Art and Natural Science in the Hellenistic World

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A thesis submitted for the degree of
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Volume I: Text

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Abstract

This thesis examines the scope and nature of natural science in the Hellenistic world using a diverse assemblage of artistic and visual material surviving from Hellenistic and Imperial times. In doing so, it provides a fresh insight into the intellectual climate that is often heralded as a hallmark of the Hellenistic age.

Following an introductory chapter that sketches some of the historical background against which developments in the natural sciences need to be set, the thesis is divided into two principal parts. The first focuses on a series of compositions containing representations of animals accompanied by identifying labels composed in Greek: the painted frieze of the Tomb of Apollophanes in Marisa; the Nile Mosaic at Praeneste; and the *verso* of the Artemidoros Papyrus. These compositions, it is argued, testify to a culture of describing, depicting, cataloguing and classifying exotic animals upon encountering them in faraway lands, which originated in royal circles in Ptolemaic Alexandria, before spreading down the social and artistic spectrum.

The second part of the thesis concerns a selection of mosaics and wall paintings that contain astonishingly naturalistic representations of animals: the late Hellenistic fish mosaics from Praeneste, Pompeii and Panisperna; a series of mosaics excavated in and associated with Attalid Pergamon; and our surviving corpus of garden paintings from Latium and Campania. These compositions demonstrate that animals were sometimes kept in captivity and studied in close detail in the Hellenistic world, probably with a combination of scientific and decorative ends in mind. They also provide important information concerning the ways in which detailed images were transmitted and re-produced during antiquity.

A picture will emerge of a world in which the animal kingdom played an important role in defining power and privilege, particularly among the uppermost echelons of society.

Acknowledgements

This thesis grew out of a Masters tutorial on Hellenistic mosaics in Trinity 2012, when I asked my tutor, Bert Smith, whether much had been written about representations of animals during Hellenistic times. A little over a year later, Bert became my supervisor as I commenced a DPhil on the subject, and I am hugely grateful for the careful balance of encouragement, wisdom, support and criticism that he has provided ever since.

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Chapter One:

Knowledge is Power:

Hellenistic Natural Science and its Historical Background

I. Prologue

> "Many indeed are the things to be seen in it, composed apparently of little chips of stone and cut fragments with assiduous attention to detail and painstaking care… There are various representations of men and animals: elephant, rhinoceros, the names written out in some extraordinary letters [nomina litteris quibusdam peculiaribus excripta]"[1]

Prince Federico Cesi composed this brief description of the Nile Mosaic at Praeneste (Fig. 33) after viewing the composition by candlelight on the occasion of his marriage to the daughter of a local aristocrat in A.D. 1614.[2] Cesi, it seems, was particularly struck by the labels accompanying many of the animals that he saw in the mosaic, composed in what he described as "extraordinary" or "peculiar" letters.[3] These labels were, in fact, written in ancient Greek, and it is not difficult to imagine Cesi's surprise at finding words in this language embedded in a work of art that lay *in situ* in a town situated just 22 miles east of Rome. This sense of surprise persists in modern assessments of the mosaic, thanks partially to these Greek labels, but also thanks to the Egyptianising thrust of its iconography, which accounts for the nomenclature of the composition. In one well-known textbook on ancient mosaics published in 1999, the presence of the pavement in Praeneste was simply described as "enigmatic".[4]

A series of studies in the second half of the twentieth century attempted to make sense of the mosaic in its Italian context.[5] Several recognised that the animals accompanied by Greek labels described by Cesi do, in fact, have a close parallel in the artistic record: not, as we might expect, in Egypt or in one of the major cultural centres of the ancient Mediterranean, but in Marisa, an historically-attested settlement originally excavated in Arab Palestine, which now

[1] Translation adapted from Whitehouse 1976, 6.
[2] Cesi married Artemisia Colonna, whose family owned the fief of Palestrina.
[3] Lewis and Short 1955, *s.v. peculiaris*.
[4] Dunbabin 1999, 51.
[5] See, for example, Gullini 1956; Phillips 1962; Steinmeyer-Schareika 1978; Meyboom 1995.

lies in the state of Israel. It was here in the summer of 1902 that the scholars John Punnett Peters and Herman Thiersch hired a guide to lead them to tombs that had recently been plundered by local grave robbers. He took them to what they later described as "the most remarkable tomb ever discovered in Palestine",[6] today known as the Tomb of Apollophanes. This assessment was precipitated above all by the tomb's extraordinary painted decoration, which included a frieze depicting a continuous sequence of animals accompanied by identifying labels in Greek (Fig. 13). A monograph published in 2007 offered a new account of the tomb decoration, and printed the photos of the animal frieze taken at the time of its discovery for the very first time.[7]

A papyrus roll from Egypt, published only in 2008,[8] offers another interesting parallel. The *recto* of this papyrus is remarkable for its "curious *mélange* of contents",[9] and features, among other things, an extract from the now lost *Geographoumena* of the Hellenistic geographer Artemidoros of Ephesos. The *verso* of this Artemidoros Papyrus contains 40 sketched vignettes of animals and fantasy creatures, again accompanied by identifying labels composed in Greek (Fig. 92).[10] While these sketches have sometimes been mentioned in the same breath as the Praeneste mosaic and the Marisa painting, scholarly discussions of the papyrus have been dominated by a fierce debate concerning its authenticity. Those who agree that it is a genuine ancient artefact are yet to reach a consensus concerning its original function(s) during antiquity.

One of the editors of the Artemidoros Papyrus proposed that the sketches of the *verso* were conceived as some kind of *cahier d'artiste*, and that "pattern books" of this sort were used to

[6] Peters and Thiersch 1905, 2.
[7] Jacobson 2007; cf. *Id.* 2004.
[8] Gallazzi, Kramer and Settis 2008.
[9] Burstein 2010.
[10] Gallazzi, Kramer and Settis 2008, 317-326.

design a series of exquisite fish mosaics surviving from late Hellenistic Italy.[11] These fish mosaics contain astonishingly naturalistic representations of large numbers of ichthyological species (Figs. 120, 128, 132), and so exhibit an artistic concern with the representation of animals that resonates with the papyrus, the Nile Mosaic and the Marisa painting. This analogy takes on an important contextual dimension when we consider that one of the mosaics originally formed the sister-piece to the Nile Mosaic at Praeneste, decorating the same basilica-like public building in the ancient town.

A series of mosaics associated with Attalid Pergamon were likewise defined by realistic representations of animals. Perhaps the most impressive is a fragmentary *emblema* from Palace V, which features an astonishingly detailed representation of a parrot in exquisite *opus vermiculatum* (Fig. 157). But two more pavements, attributed to the mosaicist Sosos of Pergamon by Pliny the Elder, and known from later versions, also depended on the accurate representation of animals – whether dead or alive – to achieve their desired effects. The first, an "un-swept floor" (Fig. 176), depicted the leftovers of a meal as though they had been discarded on the floor of an *andron*. The second showed a series of doves perched on the edge of a drinking bowl filled with water (Fig. 172). This mosaic, viewed in tandem with the parrot *emblema*, suggests that Pergamene artists developed a particular interest in the accurate representation of birds during the Hellenistic period. This interest re-emerged, and was intensified, in the garden paintings that decorated houses in Rome and the Bay of Naples from the first century B.C., including the famous example from the underground room of the Villa of Livia at Prima Porta (Fig. 197).

In some ways, it is unsurprising that this body of visual material has never been studied as a single, coherent body. After all, these works of art exhibit considerable differences, in terms

[11] This interpretation of the papyrus will be rejected in Chapter Five.

of artistic medium, date, location, purpose, and quality, and with respect to whether they represent "originals" or later versions of pre-existing works of art. For all of this diversity, the premise of this thesis is that these compositions were, in fact, *conceptually related*, and united by a shared dependence on an overarching informing idea. This informing idea, it is argued, should be sought in the world of Hellenistic zoology: that is, in a series of dynamic discourses on the animal kingdom that flourished in Hellenistic centres of learning like Alexandria and Pergamon during the third and second centuries B.C.[12]

At first sight, the notion that Hellenistic zoology underpinned this body of visual material seems paradoxical, since it is often held that this academic discipline died with Aristotle, whose zoological research programme revolutionised the study of living creatures during the second half of the fourth century B.C.[13] It is true that no zoological treatises have been preserved that *directly* continue Aristotle's pioneering work in this field,[14] and that no record has survived of Alexandrian scientists diligently cataloguing and studying newly discovered species of animals and plants. But to deny the existence of Hellenistic zoology based on the absence of explicit literary testimony would be to perpetuate an unjustified prioritisation of texts over images in the re-construction of ancient culture and society. As we shall see, the artistic evidence, correctly understood, demands this kind of historical framework, grounded in a scientific interest in animals that flourished during Hellenistic times. And while there can be little doubt that our surviving visual evidence – a tomb painting in Israel, some mosaics in Italy and Anatolia, a papyrus roll from Egypt – represents only a fraction of what there once was, enough is preserved to sketch the outlines of what was no doubt an historically important phenomenon. As it happens, a selection of textual sources survive that help to supplement this extraordinary picture.

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[12] For the notion that ancient zoology was not an integrated discipline, and that it encompassed many different discourses, see Zucker 2005, 7-54; Trinquier 2009, 355-364.
[13] See, for example, Lennox 1994, 7-24.
[14] Trinquier 2009, 354.

Of course, the task of arranging this evidence presents its own difficulties, thanks largely to the diverse nature of the surviving material. A wholesale thematic approach might seem desirable, but in practice leads to unhelpful generalisations and non-stop cross-referencing, while obscuring the resonance of each composition in the socio-cultural climate within which it was conceived. Consequently, each chapter of this thesis focuses on a particular work of art (or a group of closely related works of art) that helps to illuminate a certain aspect of Hellenistic natural science. The arrangement of chapters is loosely chronological, but strict chronological ordering is sacrificed in places to ensure that the compositions which are closest to each other in style and spirit are treated consecutively. It is hoped that the rationale dictating the order will become self-evident to readers as they progress through the thesis.

Chapter Two, focusing on the Tomb of Apollophanes at Marisa, will anchor the historical interest in the natural sciences in the third century B.C., and will point to Ptolemaic Alexandria as a principal locus of this interest. Chapter Three will concentrate on the Nile Mosaic at Praeneste, the *pièce de résistance* lying at the heart of this study. The view that the Nile Mosaic represents a version of a third century B.C. work of art from Alexandria will be upheld, and an analysis of the iconography of the upper register of the composition will reveal how royally sponsored expeditions to Aethiopia and the African coast of the Red Sea facilitated developments in the natural sciences, and permitted the Ptolemies to frame their power in territorial terms. Chapter Four, on the Artemidoros Papyrus, will attempt to make some sense of this extraordinary document, and demonstrate the extent to which the scientific interest in the natural world permeated Graeco-Egyptian society during our period. Chapter Five, focusing on the Late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna, will expose the scientific thrust of these works of art, and demonstrate that they too should be traced back to an Alexandrian original of the third or second century B.C. The

typological relationships between the mosaics will also permit a discussion concerning the ways in which detailed images of animals (and, by implication, other artistic motifs) were transmitted and replicated during antiquity. Chapter Six will treat the collection of mosaics associated with Attalid Pergamon, and demonstrate that artistic interest in the natural world extended beyond the confines of Ptolemaic Alexandria during the second century B.C. Chapter Seven, focusing on garden paintings in Rome and the Bay of Naples, will examine the artistic origins of this decorative genre, and will introduce the possibility that *some* of the individual ornithological and botanical specimens depicted in the paintings depended on artistic prototypes that originated in the Hellenistic world. Some concluding thoughts will be offered in Chapter Eight.

The remainder of this introductory chapter, meanwhile, will present some of the historical evidence that can be used to trace the outlines of Hellenistic natural science, with the objective of facilitating a more nuanced and comprehensive understanding of the works of art studied in subsequent chapters. The evidence is presented in two principal parts. The first provides a selective sketch of the intellectual and scientific activities and achievements attested in Ptolemaic Alexandria during the third and second centuries B.C. This Alexandrian focus is dictated – and justified – by the second part, which sets out *some* of the written evidence for erudite interest in the natural world during the Hellenistic period, the majority of which emanates from the Ptolemaic royal capital.

The aims of this thesis are straightforward: to bring together an historically and thematically coherent body of ancient art whose constituent compositions have traditionally been viewed in relative isolation; to outline the ways in which these compositions illuminate the world of Hellenistic natural science; to better understand each work of art in its own right, while challenging any scholarly misconceptions or misinterpretations; and to establish how detailed

images of animals and plants (and, by implication, other subjects) were transmitted and re-produced in antiquity, both during the Hellenistic period and beyond.

II. The Alexandrian Intellectual Achievement

In the third century B.C., the satirist and cynic philosopher Timon of Phleious complained that: "In populous Egypt many cloistered bookworms are fed, arguing endlessly in the chicken-coop of the Muses [Μουσέων ἐν ταλάρῳ]."[15] Although the negative thrust of Timon's assessment is palpable, he succeeded in highlighting the centrality of the "chicken-coop of the Muses" to the intellectuals who assembled in Ptolemaic Alexandria in his day. The "chicken-coop" was, of course, an unflattering moniker for the Museion, an intellectual institution clothed as a sanctuary of the Muses, which was mentioned by the poet Herodas as early as *c.* 270 B.C. as one of the city's premier attractions.[16] The Museion was connected, (whether architecturally or conceptually), with the famous Library of the Ptolemaic kings,[17] which is likewise known from our surviving literary sources. The scale and importance of this Library are suggested above all by the astronomical numbers of books that it is said to have held, even if these figures are likely to be grossly exaggerated.[18] Orosius put the collection at 400,000 volumes,[19] John Tzetzes at 490,000,[20] and Aulus Gellius and Ammianus Marcellinus at 700,000.[21]

[15] Timon fr. 60 W (Diels 12) = Ath., *Deipnosoph.*, I 22d.
[16] Herodas I, l. 31 Zanker 2009: "there's the Museum [Μουσῆιον], wine, all the good things he could want…"
[17] Erskine 1995, 38.
[18] Blum 1991, 104-113; Bagnall 2002, 351-356; Thonemann 2016, 70.
[19] Orosius, *Hist. adv. Pagan.* VI 15, 31-32.
[20] Fraser 1972a, 329.
[21] Aulus Gellius, *Noct. Att.*, VII, 17, 3; Ammianus Marcellinus XXII, 16.13.

Despite the fame of the Museion and Library in later times, the evidence for the circumstances of their foundation is relatively scarce,[22] and it is unclear whether they should be attributed to Ptolemy I Soter (*r.* 323 – 283 B.C.) or to his son and successor Ptolemy II Philadelphos (*r.* 283 – 246 B.C.). Our earliest source concerning the Library, the much discussed *Letter of Aristeas*,[23] records that Philadelphos entrusted Demetrios of Phaleron with collecting books from across the known world to stock its shelves,[24] and this version of events is supported by two much later accounts.[25] As is well known, Demetrios ruled Athens as sole governor for ten years before being ousted by his namesake Demetrios Poliorketes in 307 B.C.,[26] and later found refuge at the Ptolemaic court following the death of Kassander in 297 B.C.[27] Even so, the notion that he was entrusted with organising the Library by Ptolemy II is inconsonant with Diogenes Laërtius' testimony that one of this king's first acts upon his succession was to exile Demetrios to Upper Egypt, where he perished from a venomous snakebite.[28] If we accept the historicity of Demetrios' involvement, it seems more probable that he began organising the Library (and perhaps Museion) during the reign of Ptolemy I, before these institutions were more comprehensively developed by Philadelphos and his courtiers in subsequent years.[29]

[22] Unfortunately, the treatise *On the Museion of Alexandria* by the grammarian Aristonikos of Alexandria has not survived.
[23] The *Letter of Aristeas*, written by a Jew posing as a courtier of Ptolemy II, is difficult to date with certainty. The author knew LXX Exodus (§57, §106-108) and mentions a Ptolemaic victory over Antigonos Gonatas at sea (§180), establishing a *terminus post quem* sometime in the mid-third century B.C. A *terminus ante quem* is provided by Philo (*Life of Moses* II, 26-40) and Josephos (*Antiquities* XII, 11-118), both of whom alluded to the *Letter* during the first century A.D. Most scholars favour a date in the second century B.C.
[24] *Letter of Aristeas*, §9-11. For the letter see Murray 1987, 15-29; Honigman 2003; *Id.* 2007, 128-146; Rajak 2009, 24-91; Gruen 2010, 419-421; Hunter 2011, 47-60.
[25] Epiphanius, *On Weights and Measures* IX, 52b-c; John Tzetzes, *Prolegomena de comoedia Arisophanis* II.
[26] Plut., *Vit. Demetr.*, VIII-IX.
[27] Strab., IX 1, 20; Diog. Laert., V, 78.
[28] Diog. Laert., V, 78-79; cf. Bagnall 2002, 348.
[29] Pfeiffer 1968, 95-102; Fraser 1972a, 321-322; El-Abbadi 1990, 79-80.

Our information concerning the physical form of these buildings is similarly scarce. Not until the age of Augustus do we encounter something resembling a detailed description of the Museion, composed by the Greek geographer Strabo:

> "The Museion [τὸ Μουσεῖον] is also a part of the royal palaces; it has a public walk, an Exedra with seats, and a large house [οἶκον μέγαν], which is the common mess-hall [τὸ συσσίτιον] of the men of learning who share the Museion. This group of men not only hold property in common, but also have a priest in charge of the Museion, who formerly was appointed by the kings, but is now appointed by Caesar."[30]

From this brief account we learn that the Museion formed part of the "royal palaces" of Ptolemaic Alexandria, which were located in the Broucheion district of the ancient city (Fig. 1). According to Epiphanius, writing in the fourth century A.D., the Library was likewise located in the Broucheion, adding credence to the view that the two institutions were spatially or architecturally connected in some way.[31] In any case, we can only assume that access to this royal district was policed, and that the Museion and Library may not have been "public" facilities in the modern sense, serving only a privileged cross-section of Alexandrian society.[32] It is possible that the foundation of a second, smaller library in the Serapeion permitted a broader range of people to access the intellectual facilities that the city had at her disposal.[33]

Strabo highlights the importance of the kings to these institutions when he comments that they were responsible for appointing the priest of the Muses, the official in charge of the Museion. The same was presumably true of the Librarian responsible for overseeing activities in the Library, especially when we consider that several men who held this post are also

[30] Strab., XVII 1, 8.
[31] Epiphanius, *On Weights and Measures* IX, 52b.
[32] Rihll 2010, 411, 424.
[33] As argued by Fraser 1972a, 323, noting that the evidence for this sister library is late. Excavations at the Serapeion, have uncovered no clear traces of an Hellenistic library: see McKenzie, Reyes and Gibson 2004, 99-100.

known to have served as tutors of the royal pages.[34] A papyrus from Oxyrhynchos lists the names of most of the Librarians of the third and second centuries B.C.[35] For the most part these men were eminent literary scholars whose intellectual achievements remain well known.[36]

Mention of these officials introduces a key aspect of the Ptolemies' cultural programme: the patronage of gifted scholars and intellectuals. This was not a new phenomenon, given that the sponsorship of such men had emerged as a significant feature of autocratic splendour during the Classical period. An archetypal example is provided by the cultural programme of king Archelaos I of Macedon (*r.* 413 – 399 B.C.), who hosted the famous Athenian tragedians Euripides and Agathon at Pella towards the end of the fifth century B.C.[37] The Ptolemaic patronage of intellectuals conformed to this pre-existing framework, but with one important difference: such sponsorship could now be tied to specific institutions – the Museion and the Library – for the very first time. The result was that the kings were no longer restricted to cherry-picking a handful of prominent individuals, but could support wholesale scholarly activity on a larger scale.[38]

Even if so, the *modi operandi* of Ptolemaic patronage remain poorly understood. In recent years the traditional picture of a highly organised and rigidly structured system[39] has been challenged in favour of a more *ad hoc* model, according to which the kings spontaneously sponsored academics and intellectuals with specific ends in mind.[40] This view finds some support in Theokritos' statement that the poets who sung at the city Dionysia in Alexandria

[34] Fraser 1972a, 308-309.
[35] P.Oxy. 1241.
[36] Barnes, R. 2000, 69-70.
[37] Arist., *Pol.*, 1311b 30-34; Ael., *VH.*, XIV 17.
[38] Erskine 1995, 40.
[39] For which see Fraser 1972a, 306-319.
[40] Jacob 1998, 22-23; Trinquier 2009, 333-366; Rihll 2010, 414-417.

were rewarded "as their art deserved".[41] In reality, we should probably envisage a complex system whereby the kings assisted some intellectuals directly by means of actual financial support and/or accommodation in the Museion, and others indirectly by cultivating an intellectual centre around which they could gather.[42] Both categories included not only literary luminaries such as Kallimachos, Theokritos and Poseidippos, but also scientists, engineers and mathematicians.[43] Famously, the mathematician Euklid once warned Ptolemy I Soter that there was no "royal road" to understanding geometry.[44]

The impact of this intellectual programme can be gauged from the response that it provoked in Attalid Pergamon, where the kings likewise transformed their capital into a leading intellectual centre on the Alexandrian model. Most tellingly, Eumenes II (*r.* 197 – 159 B.C.) constructed a royal library,[45] which is said to have held some 200,000 volumes – another gross exaggeration – by the time that Marc Antony presented the entire collection to Cleopatra VII as compensation for the losses sustained by the Alexandrian Library during the Egyptian civil war.[46] Four rooms excavated behind the northern stoa of the sanctuary of Athena Nikephoros have traditionally been identified as Eumenes' library (Fig. 2),[47] but this orthodoxy has recently been challenged on compelling grounds.[48] Still, the Attalids undoubtedly followed the Ptolemaic kings in patronising prominent scholars and intellectuals, among whom Krates of Mallos, Apollonios of Perge and Polemon of Ilion are some of the best known.[49]

41 Theok., *Idyll* XVII, ll. 112-116; cf. Hunter 2003, 182-185.
42 Lloyd 1973, 5-6.
43 For the scientific achievement of Hellenistic Alexandria, see Argoud and Guillaumin 1998.
44 Procl., LXVIII 6-20; cf. Tarn and Griffith 1952, 299; Heath 1956, 1.
45 Strab., VIII 4, 2.
46 Plut., *Vit. Ant.*, LVIII.
47 For the original identification see Conze 1884; Bohn 1885, 56-72. Most recently, see Brehme 2011, 195.
48 Coqueugniot 2013, 109-124; cf. Johnson 1984, 47-60; Mielsch 1995, 772-770.
49 Pfeiffer 1968, 234-251; Hansen 1971, 397-433; Nagy 1998, 213-228; Brehme 2011, 195-197.

Traces survive of comparable initiatives in Antigonid Macedon, where Antigonos II Gonatas (*r.* 283 – 239 B.C.) sponsored a number of eminent philosophers during the third century B.C.[50] One of these men, the stoic Persaios of Kition, was even entrusted with control of the Akrocorinth – a strategically significant citadel in the heart of the Peloponnese – during the mid-240s B.C.[51] Gonatas and his successors are not known to have founded any specifically "intellectual institutions" in the manner of the Ptolemies and Attalids, but this anomaly can perhaps be explained by the fact that Athens, for centuries the cultural and philosophical heartbeat of the Hellenic world, lay squarely within Antigonid territory.[52] Still, the kings' intellectual interest persisted until the final days of the dynasty, judging by Plutarch's story that Perseus (*r.* 179 – 168 B.C.) owned a distinguished collection of books that was captured by the Roman general L. Aemilius Paullus following their decisive battle at Pydna in 168 B.C.[53]

There can be little doubt that the Attalid and Antigonid programmes were stoked by the keen sense of competition that defined interactions between the different Hellenistic dynasties prior to the rise of Rome in the first half of the second century B.C. This element of competition is encapsulated by the tale that Aristophanes of Byzantium, an Alexandrian Librarian of the third century, was thrown into jail when it transpired that he was planning to defect to the Attalid court.[54] Whatever the historicity of this episode, it provides a vivid demonstration of how the Alexandrian intellectual programme provided a paradigm for autocratically sponsored intellectualism in the Hellenistic world. Whilst a full account of this programme lies beyond the scope of this introductory chapter, it will be useful to extract three of its salient features that will be relevant when discussing the evidence for scientific

[50] Tarn 1913, 223-256; Le Bohec 1987, 315-326; Murray 2007, 13-28.
[51] Bollansée 2000, 17-26; Erskine 2011, 177-188.
[52] Tarn 1913, 223-224; Gabbert 1997, 69.
[53] Plut., *Vit. Aem.*, XXVIII, 6.
[54] Vitr. VII *pr.* 5-7.

interest in the animals during the third century B.C. These are: the imperialistic acquisition of books from across the known world; the repeated emphasis on cataloguing and classification in Alexandrian scholarship; and the peripatetic heritage of the Museion and Library.

III. The Acquisition of Books

Some of the best-known evidence concerning the Alexandrian Library documents the extraordinary measures taken by the kings and their courtiers to acquire books to fill its shelves. Athenaios of Naukratis, writing in the second century A.D., tells us that Ptolemy II Philadelphos purchased the book collection of Neleus of Skepsis, which included the prized collection of Aristotle himself, and that he transferred it to Alexandria together with "the books he got from Athens and Rhodes".[55] The reliability of this passage is called into question by an alternative tradition that Neleus bequeathed his collection to his heirs in his hometown,[56] but the allusion to Athens and Rhodes probably reflects the importance of cultural centres such as these to the Ptolemaic agents charged by the kings with acquiring new texts.[57] Interestingly, Athenaios is not the only writer who refers to the personal involvement of Philadelphos in such book collecting initiatives. In the fourth century A.D. Epiphanius could speculate that the king "wrote letters and made request of every king and prince on earth to take the trouble to send those [books] that were in his kingdom or principality… those by poets and prose writers and orators and philosophers and physicians and professors of medicine and historians and books by any others."[58]

[55] Ath., *Deipnosoph.*, I 3a-b.
[56] Strab., XIII 1, 54; cf. Barnes, R. 2000, 66.
[57] Erskine 1995, 39.
[58] Epiphanius, *On Weights and Measures* IX, 52b-c.

Acquisition strategies became increasingly high handed under Philadelphos' successor, Ptolemy III Euergetes (*r.* 246 – 222 B.C.), if our sources can be believed. Galen of Pergamon, writing during the second century A.D., describes how during the reign of this king all of the books found on board ships docked in the Alexandrian harbour were confiscated and copied, before the copies (as opposed to the originals) were returned to their owners.[59] The same author also records how Euergetes' desire to obtain the Athenians' official editions of the tragedies of Aeschylus, Sophokles and Euripides resulted in an exorbitantly expensive scheme of deception. According to the story, the king requested to borrow the texts with a view to having copies made for the royal Library. The Athenians, clearly suspicious, demanded a bond of 15 talents to ensure their safe return, which Euergetes happily paid. He nevertheless proceeded to keep the originals, leaving the Athenians with the security payment and a new deluxe set of copies as compensation.[60]

One could be forgiven for assuming, on the basis of such anecdotes, that the third century B.C. kings were primarily concerned with collecting the masterpieces of the Greek literary tradition, but it is clear that the Library also accommodated a small number of translations and re-worked versions of texts originally composed in other languages.[61] The aforementioned *Letter of Aristeas* recounts how Ptolemy II Philadelphos commissioned a Greek translation of the Torah, and there are good reasons to accept the historicity of this undertaking,[62] even if many details of the *Letter* remain suspect. Similarly, Manetho, a native priest of Heliopolis, is known to have composed his *Aegyptiaca* during the first half of the third century B.C. This chronological history of Egypt, written in Greek, drew heavily on pre-existing king lists and other documents produced in a native Egyptian *milieu*, and so re-worked the past of the colonised population into a form that was comprehensible to the

[59] Gal., *Comm. in. Hipp. Epid.*, III, CMG V, 10 2.1.
[60] Ibid.
[61] Barnes, R. 2000, 67.
[62] Rajak 2009, 24-91.

Graeco-Macedonian colonists.[63] Pliny also tells us that Hermippos, a pupil of the great Kallimachos, commented on and annotated two million lines of the Zoroastrian collection, suggesting that this work was available in Greek translation.[64] One late source simply states that the Library housed translations of texts written by "Chaldaeans, Egyptians and Romans."[65]

The all-encompassing nature of the Ptolemaic book collecting programme is all but confirmed by a passage from the *Letter of Aristeas*, which describes how Demetrios of Phaleron received vast sums of money from Philadelphos "for the purpose of collecting together, as far as he possibly could, all the books in the world."[66] The hyperbole here is palpable, but the anecdotes enumerated above – together with the astronomical numbers of books said to have been stored in the Library – leave little doubt that the kings did indeed aim to amass something resembling a universal collection of books, to be housed in a building that they had themselves constructed in the royal quarter of their new capital city. This universality is important, as it suggests that the significance of the book collection transcended its inherent cultural value, and constituted something of a political statement. By accumulating as many books as they could from the breadth of the known world and spanning the course of human history, the Ptolemies demonstrated just how far-reaching and all-encompassing their power was.[67] By controlling and commodifying Greek and non-Greek culture in this manner, the kings exhibited the geographical extent of their political influence and perhaps, by implication, their territorial aspirations.[68] No doubt their ability to attract pre-

[63] Fraser 1972a, 330; Verbrugghe and Wickersham 1996, 95-120; Jensen 2009, 89.
[64] Plin., *HN*., XXX 4.
[65] Syncellus, *Chronographia* I, 516, 3-10 Dindorf.
[66] *Letter of Aristeas,* 9-10; for analysis see Pfeiffer 1968, 99-102; Blum 1991, 104-113.
[67] Jacob 1998, 25.
[68] Erskine 1995, 45; Shipley 2000, 243; Strootman 2010, 35-36; Stephens 2010, 55.

eminent scholars to their capital city from across the known world constituted another manifestation of this kind of ideology.[69]

IV. Cataloguing and Classification

The acquisition of such large numbers of books necessitated a logical and structured method of arranging them once they entered royal hands. Thankfully, Galen's account of the confiscation of books found on ships docked in the Alexandrian harbour also provides an indication of how they were subsequently organised. Royal agents, we are told, seized a copy of the *Epidemics*, a work in the Hippocratic corpus, which had been annotated by one Mnemon of Sidē. This book was then furnished with the label "a [book] from the ships, as emended by Mnemon of Sidē", while the other books taken from the harbour were likewise labelled as being "from the ships".[70] From this we can infer that the volumes stored in the royal Library were labelled according to how and where they were acquired, with the names of previous owners and/or the names of those who had edited or annotated the text.[71] The implementation of such a system seems hardly surprising when we consider the extensive philological achievements that are attested in Hellenistic Alexandria, where the literati of the third and second centuries B.C. were occupied with producing definitive recensions of the great works of Greek literature.[72] These activities necessitated a system of classification which accounted for any discrepancies between different editions of the texts. Given that the first Librarian, Zenodotos of Ephesos, is known to have been a keen editor of Homer and other famous poets,[73] it is possible that such a system was developed relatively early in the Library's history.

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[69] Jacob 1998, 25.
[70] Gal., *Comm. in. Hipp. Epid.*, III, CMG V, 10 1.
[71] Barnes, R. 2000, 65.
[72] Pfeiffer 1968, 87-233; Fraser 1972a, 447-479.
[73] Erskine 1995, 45; Canfora 2000, 47; Shipley 2000, 240.

This treatment of books hints at a fundamental concern with cataloguing and classification, and this concern was one that was repeatedly re-visited by the scholars working in the proximity of the Museion. Most famously, perhaps, Kallimachos of Kyrene, composed his *Tables of Persons Eminent in Every Branch of Learning and a List of their Compositions* in Alexandria, a work better known as his *Pinakes*. This gargantuan literary composition, written in some 120 volumes, was a comprehensive bibliography of Greek literature in which authors were listed alphabetically according to subject or genre. Each entry included a biography of the author in question, a list of their works, the opening lines of each of text, and an indication of its length.[74] Such a large-scale undertaking was no doubt facilitated by the colossal collection of books that had been accumulated in the Library, although the extent to which it reflected the arrangement of the Library's own catalogue is very difficult to discern.[75] Even so, Kallimachos' interest in classification clearly extended beyond the confines of his *Pinakes*, judging by the statement in the Byzantine Souda that he "wrote a very large number of catalogues".[76]

The desire to catalogue and classify is also revealed by the titles of many of the treatises that were produced in Alexandria at a similar time. Among them, a work of the would-be-Attalid-deserter Aristophanes of Byzantium entitled *On Words Suspected of Not Being Used by the Early Writers* provides a particularly niche-sounding example.[77] The trend can also be discerned at lower levels of Ptolemaic society, judging by a series of educational papyri containing lists of words organised by theme, including lists of gods, heroes, rivers, months of the year, and days of the week.[78]

[74] Pfeiffer 1960, 126-134; Fraser 1972a, 452, 454; Blum 1991, 124-181.
[75] Barnes, R. 2000, 69.
[76] Souda *s.v.* Kallimachos, available in English translation online at www.stoa.org; cf. Pfeiffer 1953, xcv-xcviii.
[77] Shipley 2000, 241-242.
[78] Bonner 1977, 170-171; Cribiore 1996, 42-43; *Id.* 2009, 324-235; Morgan 1998, 101.

Crucially, however, this process of classification was not confined to literature and philology, and can also be observed in the work of the Alexandrian scientific community. The case of the medical practitioners Herophilos of Chalkedon (*c.* 330 – *c.* 260 B.C.) and Erasistratos of Ioulis (*c.* 315 – *c.* 240 B.C.) is particularly instructive. According to the Roman medical encyclopaedist Celsus, these men:

> "received from the kings wicked men brought from prison, and cut them open when alive; while breath remained in them, they examined things which nature had previously enclosed".[79]

In other words, they performed vivisections and/or dissections on human subjects, procedures which were antithetical to both the traditional Greek taboo against the examination of the interior of the human body and later Christian sensibilities: in *c.* A.D. 200, Tertullian would describe Herophilos as a "butcher" in one of his many attacks on paganism.[80] Still, there was clearly a genuine scientific purpose at hand.[81] Herophilos pioneered a new model of the human body, founded on what has been termed a "miniaturisation of anatomy".[82] Unlike previous Hippocratic studies, which had been content with describing only larger bones and organs, this model differentiated between smaller parts of the body which had hitherto remained undetected, notably nerves, the different parts of the eye, the liver, and the male and female reproductive and cardiovascular systems.[83] Herophilos supplemented his findings by inventing names for his various discoveries, in doing so creating a detailed nomenclature for the human body. Remarkably, some body parts have retained their (Latinised) Herophilean titles to the modern day, such as the cornea

[79] Celsus, *Med.*, *proemium* 23-24.
[80] Tertullian, *De anim.*, X, 4.
[81] Von Staden 1989, 138-153, 187-189.
[82] Von Staden 1996, 86.
[83] Ibid, 86-87; Shipley 2000, 346.

("horn-like", from the Greek *keratoeides*), and retina ("net-like", from the Greek *amphiblestroeides*).[84] Erasistratos, for his part, is said to have refined Herophilos' model, and to have made important discoveries concerning the heart valves.[85]

Celsus neatly summarises these developments when he writes that when Herophilos and Erasistratos examined each part of the human anatomy, they were at pains to assess "their location, colour, form, size, disposition, hardness, softness, relationship, also the projections and depressions of each one, and if one is inserted into the other or receives part of another into itself."[86] Through such work, these men succeeded in cataloguing and naming the different parts of the human body for the very first time.

A comparable concern with classification may be identified in the work of Hipparchos of Nikaia (*c.* 190 – after 126 B.C.), a mathematician and astronomer who worked in Alexandria during the second century B.C. Hipparchos produced a comprehensive catalogue of stars, in which 805 stars were organised according to their latitude and longitude, and by three categories of brightness.[87] In compiling his catalogue, Hipparchos drew not only on pre-existing Babylonian astronomical data, but also on the observations of early-third century B.C. astronomers at Alexandria, including Timocharis and Aristyllos.[88] The work enjoyed considerable longevity, judging by the fact it was adapted and expanded by Claudius Ptolemy in the second century A.D.[89]

Other studies had a more terrestrial focus. Particularly remarkable is the work of Eratosthenes of Kyrene (*c.* 276 – 194 B.C.), a gifted polymath who served as Librarian during

[84] Flemming 2003, 451.
[85] Von Staden 1996, 91-92; Shipley 2000, 346.
[86] Celsus, *Med.*, *proemium* 23-24.
[87] Tarn and Griffifth 1952, 298.
[88] Lloyd 1984, 321, 344.
[89] Tarn and Griffifth 1952, 298.

the reign of Ptolemy III Euergetes. Eratosthenes' intellectual interests were so broad that he is said to have gained the nickname "*beta*" during antiquity, since he was considered to be the second most accomplished in every branch of learning, and so presumably ranked as the greatest scholar overall.[90] His most famous achievement remains his astonishingly accurate calculation of the circumference of the earth, but he also pioneered a new brand of scientific geography aimed at systemising and quantifying the known *oikoumenē*. While his predecessors had attempted to construct geographical boundaries based on arbitrary ethnographical and botanical observations, Eratosthenes insisted on conceptualising the earth as a continuous geometric unit, rationally divided by a sequence of parallel circles and meridians passing through cities and significant geographical points.[91] In this way, he pioneered a rudimentary system of latitude and longitude, revolutionising human understanding of the surface of the earth in the same way that Herophilos and his compatriots had revolutionised the understanding of human anatomy.

This selective sketch of the literary and scientific achievements of Ptolemaic Alexandria has revealed a recurring desire on the part of scholars to classify, catalogue and quantify the known world. As we shall see, a comparable desire can be discerned in the arena of the natural sciences, since there is good evidence to suggest that many animals from the distant corners of the known world were described and catalogued for the very first time in third century B.C. Alexandria.

V. Aristotelian Heritage

[90] Ibid, 302; Shipley 2000, 327; Thonemann 2016, 71-72.
[91] Geus 2003, 243-244.

A final aspect of the Ptolemaic intellectual programme that deserves consideration is its links with Aristotle and his peripatetic school. In 343/2 B.C., Aristotle entered the world of Macedonian kings when he was hired by Philip II to tutor the fourteen year old Alexander the Great in Mieza, and stories abound of the lasting impact of his teaching on the future conqueror of the Persian Empire.[92] The influence of the great philosopher undoubtedly endured, judging by the stories concerning the foundation of the Museion and Library in Ptolemaic Alexandria.

We have already noted that Demetrios of Phaleron, the one time governor of Athens, played a significant role in the establishment of the Library. Demetrios' own intellectual background is important: our sources tell us that he was educated by Theophrastos, Aristotle's most famous pupil and successor as head of the Lykeion,[93] and some scholars have speculated that he may also have been taught by the great man himself.[94] Although Demetrios' own intellectual achievements did not equal those of his mentors,[95] he was clearly a competent and productive scholar, judging by Diogenes Laërtius' confident assertion that "In the number of his works and his total length in lines he has surpassed almost all contemporary Peripatetics".[96] The same author also praises him for the extraordinary versatility of his academic interests.[97]

It is against this background that we should read Strabo's famous statement that Aristotle "bequeathed his own library to Theophrastos, to whom he also left his school; and he is the first man, as far as I know, to have collected books and to have taught the kings in Egypt how

[92] Plut., *Vit. Alex.*, VIII 2; cf. Worthington 2003, 90.
[93] Diog. Laert., V, 39 and 75; Cic., *Off.*, I, 1; *Fin.*, V, 19, 54; *Brut.*, IX, 37.
[94] Ferguson 1911, 268.
[95] Dow and Travis 1943, 144.
[96] Diog. Laert., V, 79-80.
[97] Diog. Laert., V, 79-81.

to arrange a library."[98] The passage itself is certainly apocryphal, given that Aristotle probably died long before the establishment of the Alexandrian Library. But it does imply, more loosely, that Aristotle's own book collection in the Lykeion provided a model for the new royal Library, and fits neatly with the anecdote that Ptolemy II Philadelphos purchased Aristotle's collection from one Neleus of Skepsis. The common link between the two institutions is, of course, Demetrios of Phaleron, who presumably brought with him knowledge of the Lykeion and its book collection – as well as the "book culture" that had gained ground in Athens during the fourth century B.C.[99] – when he arrived at the court of Ptolemy I Soter in the early-third century B.C. It may also be significant that Soter subsequently hired Strato of Lampaskos, a prominent peripatetic scholar, to tutor his young son Philadelphos.[100]

It is tempting to sketch a narrative centred on the figure of Demetrios, and to imagine that he masterminded the foundation of two new intellectual institutions that were consciously and directly modelled on the Athenian Lykeion. After all, the Lykeion also contained a shrine of the Muses, a Museion, which may plausibly have served as a model for its Alexandrian counterpart.[101] In reality, however, this narrative simplifies what was no doubt a complex process, and should probably be rejected in the absence of more substantive evidence. The most we can say is that these new institutions may have incorporated some features borrowed from the Lykeion and the peripatetic school, and that Demetrios may have been responsible for their introduction. Perhaps, then, we should consider Strabo's testimony from a different angle. What it *does* confirm is that even during the Augustan age, some two and a half centuries after their foundation, the Alexandrian Museion and Library could be associated with Aristotle and his peripatetic school in popular consciousness.

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[98] Strab., XIII 1, 54.
[99] For which see Pinto 2013, 85-95.
[100] Diog. Laert., V, 58.
[101] Diog. Laert., V, 51-57; cf. Erskine 1995, 40.

The range of Aristotle's intellectual interests is well known, but there can be little doubt that he was particularly concerned with the study of animals: zoology, to retroject a modern discipline.[102] Plato and others had previously attempted to systematise and rationalise the animal kingdom,[103] but Aristotle explicitly rejected the formulations of his predecessors and addressed the subject in unprecedented detail. He was well aware of his status as a pioneer in the field, judging by his impassioned defence of the importance of zoological and botanical research at the end of the exordium to his treatise *On the Parts of Animals*:

> "Of the works of Nature there are, we hold, two kinds: those which are brought into being and perish, and those which are free from these processes throughout all ages. The latter are of the highest worth and are divine, but our opportunities for the study of them are somewhat scanty… We have better means of information, however, concerning the things that perish, that is to say plants and animals, because we live among them; and anyone who will but take enough trouble can learn much concerning every one of their kinds."[104]

In this passage, Aristotle not only justifies his work on animals, but also articulates his view that the study of things "which are brought into being and perish" should necessarily begin with the careful observation of real life specimens. This view was expressed in its purest form in his *Inquiries on Animals*, which was, in essence, a comprehensive collection of empirical facts concerning the creatures of the natural word. In the treatise, Aristotle discusses the different parts of animals (both internal and external), the materials from which they were formed, their modes of reproduction, and their diets, behaviours and habitats.[105] His dependence on the observation of real life specimens is evident throughout, even if he sometimes commits errors which are best explained if we assume that he was supplied with specious information

[102] Lloyd 1970, 115.
[103] Irby-Massie and Keyser 2002, 255-257.
[104] Arist., *Part. an.*, 844b; cf. Lloyd 1970, 115.
[105] Barnes, J. 2000, 18.

by unreliable intermediary sources: "fishermen, hunters, horse-trainers, bee-keepers and the like".[106] Particularly remarkable is his description of the male octopus,[107] which includes an account of the "hectocotylization" of one of the tentacles for effecting copulation, a phenomenon which was only re-discovered by scientists in the nineteenth century A.D.[108] Elsewhere, the content of the treatise indicates that Aristotle performed dissections when gathering data,[109] instigating a process of scientific experimentation that culminated in the human dissections and vivisections of Herophilos and Erasistratos.[110]

The question of how Aristotle "classified" the animals that he described has dominated modern treatments of the *Inquiries on Animals*. In a revealing passage, the philosopher rejects the system of sub-division by dichotomy employed by his predecessors, in which groups of animals were distinguished through the division of larger groups into two on the basis of possession or non-possession of a particular attribute.[111] Such a system, Aristotle contends, was inherently flawed, as there could be no further division of a category formed on the basis of non-possession of an attribute since the animals that comprised such a category did so by exclusion rather than because they formed a coherent group. This system also had the capacity to break up naturally occurring groups: birds, for example, might be divided on territorial/aquatic lines. For Aristotle, then, the purpose of division was to isolate genuine groups of greater or lesser inclusiveness, and this task could not be achieved through dichotomous division. Accordingly, his method was to begin with the "natural" groups perceived instinctively as such by humans, such as birds and fish, and to discern the different combinations of *differentiae* that set them apart from each other.[112] Groups were hereby

[106] Lloyd 1970, 116.
[107] Arist., *Hist. an.*, 524a 3-9.
[108] Hankinson 1995b, 162; Barnes, J. 2000, 19-20.
[109] Lloyd 1970, 116; French 1994, 40-42.
[110] Von Staden 1996, 85.
[111] Arist., *Part. an.*, 642b 5 – 644a 12; cf. French 1994, 56-58; Hankinson 1995a, 124-125.
[112] French 1994, 57-58; Hankinson 1995a, 124-127.

defined by their collective idiosyncrasies rather than by the possession or non-possession of a single arbitrary characteristic. Within each group, sub-groups or species could be identified with reference to the specific *differentiae* that set them apart from the other species belonging to the group. No single *differentia* was necessarily prior to or more important than the others; it was the combination of multiple *differentiae* that was most significant.

This system was pioneering, and it is tempting to assume that classifying animals was a theoretical task for Aristotle, and to paint him as the father of a proto-Linnaean system of taxonomy. In actual fact, Aristotle himself makes it quite clear that his collection of facts and elaboration of *differentiae* were not an end unto themselves.[113] Rather, they were designed to facilitate detailed statements concerning the "causes" of natural phenomena, which would, in turn, fit into his more wide reaching theoretical and philosophical framework. Simply put, his principal motive was explanation as opposed to description, and his careful division of species was intended to facilitate discussion at a later juncture, some of which can be found in the treatises *On the Parts of Animals* and *On the Generation of Animals*.[114]

Even so, Aristotle's zoological studies marked a watershed in the sense that they established a scientific concern for systematically describing and classifying the creatures of the natural world for the very first time. Comparable, in this respect, is the work of his pupil and successor Theophrastos of Eresos, who pioneered a similarly revolutionary approach to the study of plants. His *Inquiry into Plants*, written in *c.* 300 B.C., was also a predominantly descriptive treatise, and constituted an initial attempt to systemise the botanical world with reference to the *differentiae* that distinguished particular types of vegetation.[115] Like Aristotle's *Inquiry into Animals*, the *Inquiry of Plants* was intended to facilitate discussions of a more

[113] Arist., *Hist. an.*, 491a.
[114] Brilliantly illustrated by Pellegrin 1986, *passim*.
[115] French 1994, 92-103; Shipley 2000, 341-343.

philosophical nature, traces of which are preserved in another treatise attributed to Theophrastos, *On the Causes of Plants*.[116]

There is no evidence to suggest that Aristotle's ambitious programme of zoological research was directly continued or expanded during the Hellenistic period. Aristophanes of Byzantium did compose an epitome of the *Inquiry into Animals* during the third century B.C., but this seems to have incorporated no new data, and to have re-arranged existing Aristotelian material in such a way that the logic underpinning the arrangement of the original treatise was completely undermined.[117] Still, we shall see in this thesis that zoology took on a number of new and exciting directions during the Hellenistic period,[118] and it seems likely that Aristotle's pioneering work was one of the factors that permitted it to do so.

Another important factor was Alexander the Great's conquest of the Persian Empire. This expedition brought the Graeco-Macedonians into contact with people, places, fauna and flora that they had never previously encountered, providing the raw materials for advances in fields including zoology and botany.[119] According to Pliny the Elder:

> "King Alexander the Great being fired with a desire to know the natures of animals and having delegated the pursuit of this study to Aristotle, as a man of supreme eminence in every branch of science, orders were given to some thousands of persons throughout the whole of Asia and Greece, all those who made their living by hunting, fowling and fishing, and those who were in charge of warrens, herds, apiaries, fishponds and aviaries, to obey his instructions, so that he might not fail to be informed about creatures born anywhere. His enquiries addressed to those persons resulted in the composition of his famous works on zoology, in nearly 50 volumes."[120]

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116 Lennox 1994, 12.
117 Ibid, 14-16; Trinquier 2009, 356-357.
118 For synoptic accounts of some of these directions, see Bodson 1998a, 69-71; Zucker 2005, 18-20; Trinquier 2009, 353-366.
119 Tarn and Griffith 1952, 295.
120 Plin., *HN*., VIII 17, 44. Note, however, that according to Aelian (*VH*., IV 19), Alexander's father Philip II was the patron of Aristotle's zoological research. To these testimonia we should add the related tradition

The notion that Alexander and Aristotle undertook a sustained programme of collaborative zoological research is pure fantasy,[121] but the story may betray something of the impetus handed to natural scientists as a direct result of the king's conquest of Asia. This impetus was probably manifested in the accounts of the expedition composed by Onesikritos, Aristoboulos, Nearchos, Kleitarchos, and others, which are known to have contained detailed observations concerning the fauna and flora encountered by the Macedonians as they progressed into the heart of the Persian Empire.[122] It is also significant that Alexander and his men drew a series of geographical inferences based on zoological and botanical observations as they progressed further east,[123] each of which highlighted their continued sensitivity to the animals and plants that they saw along the way.

It is conceivable that Alexander's own interest in animals inspired some of this new zoological focus.[124] After all, our surviving accounts of the great conqueror's life are replete with stories that attest to his zeal for keeping and observing different types of animals. His interest in snakes is particularly noteworthy: we are told that he harboured a strong desire to visit two magnificent serpents owned by the Indian king Abisares,[125] and that he agreed to keep a sacred snake owned by some Indians out of harm's way.[126] Could it be that Alexander established a precedent for royal interest in the natural world, like so many other aspects of Hellenistic kingship? Perhaps, but the evidence from Ptolemaic Egypt is considerably more emphatic in this respect.

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recorded by Athenaios (*Deipnosoph.*, IX 398e) that Aristotle's *Historia Animalium* was subsidised by Alexander with a grant of 800 talents.

121 Romm 1989, 566-579; Bodson 1991, 131-133; Trinquier 2009, 335-339.

122 Pfister 1961, 30-67; Bodson 1991, 130-135; Heckel 2006 *s.v.* Amyntas [10]', 'Aristobulus', 'Baeton', 'Cleitarchus' 'Diognetus', 'Nearchus', 'Onesicritus', 'Philonides', 'Poseidonius'.

123 Geus 2003, 236-242.

124 As argued by Bodson 1991, 136-138.

125 Onesikritos F16 = Ael., *NA.*, XVI 39.

126 Ael., *NA.*, XV 21.

VI. The Ptolemies and Other Animals

There is precious little to suggest that Ptolemy I Soter was particularly interested in the animal kingdom. Lucian does tell us that this king paraded a black Baktrian camel before his Egyptian subjects in the theatre,[127] but the historicity of this episode has been doubted by scholars.[128] Rather, our surviving evidence concerning the Alexandrian interest in the natural world is clustered in the reign of his son and successor Ptolemy II Philadelphos, a king whose close connections with the Museion and Library were repeatedly evoked in the first part of this chapter. Quite how Philadelphos first became interested in the animal kingdom is difficult to say. Strabo credits him with a passion for study,[129] and it is interesting that his one-time tutor, Strato of Lampaskos, is known to have composed works *On Animals whose Existence is Questioned*, *On Animals in Folk-lore or Fable* and *On the Breeding of Animals*.[130]

In any case, Philadelphos' interest in the natural world was manifested most conspicuously during his famous Grand Procession, a lavish parade through the streets of Alexandria which probably formed part of the penteteric celebration of the *Ptolemaia* during the 270s B.C.[131] This event was originally described by the third century B.C. historian Kallixeinos of Rhodes in Book Four of his treatise *On Alexandria*, portions of which have been preserved for us by Athenaios of Naukratis.[132] Broadly speaking, the event consisted of a series of divisional processions, each honouring a different god or deified mortal. The preserved portion of Kallixeinos' account centres on the divisional procession honouring Dionysos, which

[127] Lucian, *To One Who Said, "You're a Prometheus in Words"*, 4.
[128] Trinquier 2002, 865-866.
[129] Strab., XVII 1, 5.
[130] Diog. Laert., V, 59-60.
[131] On the Grand Procession see Dunand 1981, 11-40; Rice 1983; Coleman 1996, 49-48; Thompson 2000, 365-388; Hazzard 2000, 59-79; Walbank 2002, 59-79.
[132] Ath., *Deipnosoph.*, V 196-203.

Athenaios clearly considered to be the most impressive element of the tableau. Particularly important, in the context of this thesis, is the section that celebrated the god's triumphal return from India, since it included a display of animals from the distant corners of the *oikoumenē*. Kallixeinos' description is worth quoting in full:

> "'Five hundred girls followed him [*sc.* a statue of Dionysos on an elephant]... One hundred and twenty Satyrs followed them, some wearing silver armour, others bronze. After them marched five troops of asses on which rode crowned Silenoi and Satyrs. Some of the asses had frontlets and harnesses of gold, others of silver. After them marched twenty-four elephant *quadrigae*, sixty *bigae* of goats, twelve of saiga antelopes, seven of oryxes, fifteen of hartebeest, eight *bigae* of ostriches, seven of onelaphoi, four *bigae* of onagers, and four *quadrigae* of horses. Little boys were mounted on all of these, wearing the chitons of charioteers and *petasoi*; beside them were mounted little girls wearing himatia woven with gold, and armed with light shields and thrysos-lances… In addition to these, there were six *bigae* of camels, three on either side, which were followed by carts drawn by mules. These contained foreign tents under which sat Indian women and others dressed as prisoners. More camels carried 300 *minae* of frankincense, 300 of myrrh, and 200 of saffron, cassia, cinnamon, orris, and other spices. Aethiopian tribute-bearers followed right after them; some of them carried 600 elephant tusks, others 2,000 logs of ebony, and others sixty craters full of pieces of gold and silver and gold dust. After them came two *kynegoi* with gilded hunting spears. Two thousand four hundred dogs were also led along, some Indian, the others Hyrcanian, Molossian and other breeds. Right after them came 150 men carrying trees from which were suspended different kinds of animals and birds. Then there were borne along in cages parrots, peacocks, guinea fowl, pheasants and Aethiopian birds, many in number.' Telling also of many other things, and enumerating herds of animals, he [*sc.* Kallixeinos] included 'One hundred and thirty Aethiopian, three hundred Arabian, and twenty Euboean sheep, twenty-six all-white Indian cows plus twenty Aethiopian ones, one large white bear, fourteen leopards, sixteen cheetahs, four caracals, three cheetah cubs, one giraffe, and one Aethiopian rhinoceros."[133]

Certain details are suspect: we might question, for instance, whether it was truly possible to yoke creatures such as ostriches, onagers and camels for the purpose of pulling chariots. Still,

[133] Ath., *Deipnosoph.*, V 200e-201c Rice, with omissions; cf. Theok., *Idyll* II, ll. 67-68, suggesting that a lioness may also have been paraded in the procession.

the incredibly detailed nature of the narrative suggests that Kallixeinos based his account on official sources of some description, probably the "Chronicles of the Penteterides" ["τὰς τῶν πεντετηρίδων γραφὰς"] that he mentions in the same context.[134] It is important to state from the outset that there is nothing in the passage to indicate that the animals exhibited in the procession had been subjected to systematic zoological research by Alexandrian scientists. But it *is* clear that certain aspects of the parade resonated with the Alexandrian intellectual programme that formed the subject of the first part of this chapter.

Particularly noteworthy, in this respect, is the extraordinary range of geographical locations encompassed by the animals displayed in the procession, since Kallixeinos tells us that creatures hailing from India, Aethiopia, Hyrcania (in modern Iran/Turkmenistan), Molossia (in modern Greece/Albania), Arabia and Euboea were all included in the parade. Some scholars have questioned the extent to which contemporaries would have appreciated this remarkable geographical range, and have argued that the ensemble was intended to produce a generic vision of the exotic "other" for those who witnessed the display.[135] This may well have been so, but the very fact that Kallixeinos' was able to record the origins of so many of the paraded species suggests that they were considered to be important by his sources, and that they therefore played an significant role in the conception of the parade.

On a practical level, of course, the geographical diversity of the animals attests to the extent of Ptolemaic contacts and control at the time the procession was staged. But from an ideological perspective, it constitutes yet another example of the practice of accumulation that was such "un paradigme essentiel de la culture d'Alexandrie",[136] seen also in the imperialistic acquisition of books from across the Mediterranean and the continued assembly of prominent poets and

[134] Ath., *Deipnosoph.*, V 197d.
[135] Trinquier 2002, 871-873; Schneider 2004, 324.
[136] Jacob 1998, 25.

scholars in the Ptolemaic royal capital. It is possible that this particular act of accumulation also reflected something of Philadelphos' territorial aspirations.[137] Indeed, while the king could hardly claim mastery of India, Hyrcania or Mollosia, the display of animals from these lands was one way of expressing the idea that the Ptolemies were the rightful heirs to Alexander the Great, the man responsible for conquering all of them during the fourth century B.C. It is surely no coincidence that a colossal statue of Alexander, flanked by statues of Athena and Nike and mounted in a chariot drawn by elephants, was also paraded during this section of the parade.[138]

Kallixeinos' description also resonates with the trend towards classification that we identified as a salient characteristic of Alexandrian scholarship of the third and second centuries B.C. Much of the account reads like a catalogue, in which Kallixeinos lists a particular species before providing information concerning the role it played in the procession, the number of specimens paraded, and – sometimes – its geographical origins. But Kallixeinos was also careful to explain that the display of certain animals involved the juxtaposition of breeds from different geographical locations. Most notably, we are told of Indian, Hyrcanian and Molossian dogs (as well as those of "other breeds"); Aethiopian, Arabian and Euboean sheep; and Indian and Aethiopian cows. Clearly Kallixeinos, or his sources, felt the distinctions *within* these categories of species to be significant, hinting at a process of sub-classification of livestock and dogs, which, according to some scholars, may have been conceived with economic, agricultural ends in mind.[139]

It is important to consider what this parade of huge numbers of animals would have entailed in practical terms. The challenges of housing and feeding such a large number of creatures

[137] Strootman 2014c, 333; *Id.* 2014d, 261.
[138] Ath., *Deipnosoph.,* V 201d.
[139] Rostovtzeff 1922, 113-117; Rice 1983, 95; Dumont 2001, 309-312.

suggest that a specialist facility would have been needed in or near to Alexandria in the weeks and months leading up to the Procession.[140] It is surely for this reason that almost every modern account of the urban fabric of the Ptolemaic royal capital during the third century B.C. refers to a "zoo", "zoological garden" or "menagerie", which, we are told, was probably located in the royal quarter of the city, or attached to the Museion.[141] Given that the existence of this facility is so frequently and confidently stated, it is striking that it is never explicitly referred to in the surviving ancient literature. Strabo, for example, does not mention it in his description of the city, composed in the mid-first century B.C.[142] The only possible allusion is provided by the second century B.C. historian Agatharchides of Knidos, who tells us that Ptolemy II Philadelphos collected animals together "to live in one place [συναγαγεῖν ὑπο μίαν οἴκησιν]."[143] But Agatharchides offers no information concerning the nature of this "place", and leaves open the question of whether it was a permanent facility or a temporary one that was conceived only with Philadelphos' Grand Procession in mind.[144] Unsurprisingly, the archaeological record from Alexandria contributes nothing to illuminate this murky picture.[145]

In fact, a much more nuanced view is possible. As Jean Trinquier has shown, there were major differences in the status and function of the animals that were imported into Alexandria during the third century B.C., and these differences probably translated into different conditions of captivity.[146] In the context of the Grand Procession, some of the animals clearly served a practical function, drawing chariots or carrying valuable products imported from abroad, while others appear to have been displayed in much smaller numbers, primarily as exotic curiosities. It is likely that the creatures with practical functions were kept in specialist

[140] George Jennison, himself a zookeeper, estimated (1937, 35) that "The quarters of the whole collection would probably cover about 100 acres."
[141] For an early example in English, see Hubbell 1935.
[142] Strab., XVII 1, 8-10.
[143] Agatharchides fr. 1 Burstein.
[144] Trinquier 2002, 911-914.
[145] For the material record of Ptolemaic Alexandria, see McKenzie 2007, 31-146.
[146] Trinquier 2002, 861-919.

facilities where they might receive rigorous training in order to perform their tasks with minimal disruption to the festivities. The elephants are particularly instructive in this respect, since we have papyrological evidence to suggest that the stables housing these animals were actually situated upriver in Memphis,[147] although it is unclear whether or not this arrangement was already in place during the 270s B.C. In any case, it is likely that the huge numbers of sheep and cattle mentioned by Kallixeinos were kept in farming facilities that were primarily geared towards exploiting their agricultural and economic potential.[148] Certainly no "zoo" – at least in the modern sense of the term – would have been able to accommodate such astronomical numbers of livestock.

The animals displayed as exotic curiosities are more difficult to assess, but there are also good reasons to believe that they may not have been housed in a single, all-encompassing facility. Indeed, Aelian informs us that the giant serpents imported into Alexandria during the Hellenistic period were kept not in a zoological garden, but in the sanctuary of Asklepios, where they functioned as sacred avatars of the god of healing.[149] Elsewhere, the same author mentions a beautiful peacock that was placed in the sanctuary of Zeus Poleius by an unnamed Ptolemaic ruler.[150] A different set of circumstances clearly prevailed in the case of an extraordinarily tame lion, said to have been kept in the royal palace by a queen Berenike.[151] And this was not the only animal kept in the area of the palace, judging by a short extract from the *Memoirs* of Ptolemy VIII Euergetes II (*r.* 145 – 116 B.C.) in which he describes exotic birds that were bred for their gastronomic value:

> "King Ptolemy [VIII] in Book XIII of his *Memoirs*, in the course of his discussion of the royal palace in Alexandria and the animals kept

147 *P. Petr.*, II, 20 col. IV, l. 7-8 and 12-13; cf. Scullard 1974, 133; Casson 1993, 259; Trinquier 2002, 893.
148 Trinquier 2002, 891-893.
149 Ael., *NA.*, XVI 39; cf. Trinquier 2002, 898-900.
150 Ael., *NA.*, XI 33; cf. Trinquier 2002, 900-902.
151 Ael., *NA.*, V 39; cf. Trinquier 2002, 894-895.

> there, says: Not only did he [*sc.* Ptolemy VI Philometor, *r.* 180-145 B.C.] import the variety of pheasants known as *tetaroi* from Media, but he also bred *nomades* birds, and produced so many of them that they could be eaten; for they are generally regarded as expensive food."[152]

In this light, it seems certain that the animals imported into Ptolemaic Alexandria during the third and second centuries B.C. were housed in a range of facilities, each of which catered to the needs and functions of the particular species that they accommodated. The notion of a single, integrated Alexandrian zoo does not do justice to this variety, even if we assume that Philadelphos did manage to gather large quantities of animals "in one place" prior to his famous Grand Procession during the 270s B.C.

This all leads us to consider precisely how all of these creatures came to be imported into the Ptolemaic royal capital in the first place. We shall see in Chapter Two that animals might be sent to the king by grateful local leaders, entering the realm of symbiotic relationships between ruler and ruled that constituted such an important mechanism of diplomacy and exchange in the Hellenistic world. But there were certainly other possibilities, and we happen to be particularly well informed about how animals were brought to Egypt from Aethiopia and the Red Sea coast during the reign of Ptolemy II Philadelphos.

The historical background is important. Unlike Ptolemy I Soter, who had demonstrated remarkably little interest in the territories lying to the south of Egypt,[153] Philadelphos pursued an active policy in Nubia and the Red Sea during the course of his reign.[154] In *c.* 275 B.C. he launched a military expedition into Lower Nubia, which seems to have resulted in the annexation of the Dodecaschoenus and the gold mines of the Wadi Allaqi, and the spread of

[152] Ath., *Deipnosoph.*, XIV 654c.
[153] Désanges 1978, 247.
[154] Ibid, 252-279; Hölbl 2001, 55-56.

Ptolemaic cultural and political influence in the upper Nile valley.[155] The expedition is mentioned briefly by Diodorus Siculus,[156] but further information is supplied by a series of fragments attributed to Agatharchides of Knidos,[157] an historian who worked in Alexandria during the reign of Ptolemy VI Philometor (*r.* 180 – 145 B.C.).[158] Both the scope and nature of Agatharchides' work have been debated in recent times,[159] but there can be little doubt that some of the surviving fragments allude to the genesis of Ptolemaic activity in the Upper Nile Valley and the Red Sea during the reign of Philadelphos. In a revealing passage, Agatharchides supplies two motives for this king's Nubian expedition:

> "Ptolemy, the successor of the son of Lagos, was the first to organise the hunting of elephants as well as other similar activities. Animals which had been separated by Nature he brought together to live in one place."[160]

Philadelphos' desire to capture elephants was undoubtedly precipitated by military developments in the late Classical and early Hellenistic periods. It was during Alexander's eastern campaigns that the Graeco-Macedonians first encountered elephants in a military capacity, and these tank-like beasts soon became an essential component of Hellenistic armies.[161] The partition of Alexander's empire favoured the Seleukids in this respect, since their control of the East afforded them a monopoly of Indian war elephants, cemented by a treaty between Seleukos I Nikator and the Mauryan king Chandragupta in 303 B.C., in which the former ceded territory to the latter in exchange for some five hundred elephants.[162] It is true that Ptolemy I had captured a force of elephants from Demetrios Poliorketes at the

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155 Burstein 1989, 7.
156 Diod. Sic., I 37, 5.
157 Codex 250 of Photius' *Bibliotheca* contains a series of verbatim excerpts, while the descriptions of the Red Sea composed by Diodorus (III, 12-48) and Strabo (XVI 4, 5-10) are also known to derive from Agatharchides, the former directly and the latter through the intermediary of Artemidoros of Ephesos' *Geographoumena.*
158 Burstein 1989, 12-18.
159 See, for example, Marcotte 2001, 385-426; Engels 2004, 179-192; Ameling 2008, 13-59.
160 Agatharchides fr. 1 Burstein.
161 Bar-Kochva 1979, 75-83.
162 Strab., XV 2, 9; cf. Kistler 2007, 58-67.

Battle of Gaza in 312 B.C., but it is likely that these were too old to be meaningfully deployed in combat by the time that Philadelphos succeeded him some three decades later. The problem was exacerbated by the outbreak of the First Syrian War in 275 B.C., at which stage the Ptolemaic need for a battle-ready corpus of elephants became critical. Accordingly, Philadelphos' Nubian campaign seems to have inaugurated an intensive royal project in the region south of Egypt, aimed at capturing large numbers of elephants and training them for combat.[163]

Our information concerning the elephant project is fragmentary, but there can be little doubt that it was an extraordinarily costly undertaking, which necessitated a remarkable amount of forward planning.[164] The earliest hunting parties seem to have been launched from the upper Nile valley, targeting the elephants of the central and southern Sudan.[165] Starting in *c.* 270 B.C., however, a series of ports, hunting stations and roads were built along the African coast of the Red Sea and its offshore islands, and the hunts shifted to the coast and its hinterlands.[166] These Red Sea hunts continued during the reigns of Philadelphos' successors, but seem to have come to an abrupt end towards the close of the third century B.C., following an expedition led by one Charimortos during the reign of Ptolemy IV Philopator.[167]

While these hunts were undoubtedly conceived with practical, military considerations in mind, it is likely that they also facilitated an improved understanding of wildlife in the regions south of Egypt, and that they led to the importation of creatures other than elephants into Alexandria. Compelling evidence in this direction is supplied by a remarkable series of graffiti

[163] This project may have involved importing mahouts from India, since Aelian (*NA.*, XI 25) reports that Ptolemy II Philadelphos was taken by surprise when he was presented with an elephant that understood orders in Greek: see Scullard 1974, 130-131.
[164] Casson 1993, 247-260.
[165] Désanges 1970, 37-43; Trinquier 2002, 876-878.
[166] Ibid.
[167] Strab., XVI 4, 15; OGIS no. 86.

inscribed on the legs of two pharaonic colossi in the temple enclosure of Ramses II at Abou Simbel in the upper Nile valley.[168] Several of the graffiti were inscribed by men who identified themselves as "elephant hunters", but another was inscribed by one Iason son of Zenobios, a Cilician, who could describe himself as an ὀρνιθοθήρας, or "bird-catcher".[169] Whether or not Iason was responsible for the capture of any of the "Aethiopian birds, many in number", which, Kallixeinos tells us, were paraded in the Grand Procession, is impossible to say. But the realisation that other types of animal might be captured *alongside* elephants provides an important insight into one of the mechanisms through which the king's grandiose animal collection project was effected.

Teams of royal elephant hunters were not the only individuals to venture southwards in the years following Philadelphos' Nubian expedition. Professional freelance hunters might also travel to Aethiopia and the Red Sea coast in the hope of capturing particularly magnificent or unusual creatures, which they could then present to the king in exchange for considerable material rewards.[170] The best known example is supplied by Agatharchides' account of how a group of hunters captured an enormous python before transporting it to Alexandria and being remunerated handsomely by Philadelphos for their efforts:

> "For, the second Ptolemy, who was enthusiastic about the hunting of elephants and awarded great gifts to those who, contrary to expectation, succeeded in capturing the most courageous beasts, spent much money on this passion and acquired numerous elephants as well as making known to the Greeks other animals that had not previously been seen and were of extraordinary character [καὶ ἄλλων ζώων ἀθεωρήτους καὶ παραδόξους φύσεις]. For this reason some of the hunters, who had noted the king's generosity with gifts, having recruited a sufficiently large party of men, decided to risk their lives and to capture and bring alive to Ptolemy at Alexandria one of the great snakes… Having brought the snake to Alexandria, they presented it alive to the king, an amazing sight and one unbelievable

[168] Bernard and Masson 1957, 1-46.
[169] Ibid, 33.
[170] Trinquier 2002, 878-879; Bodson 2003, 181-191.

> to those who knew it by hearsay. Having worn down the beast's spirit through the deprivation of food, they gentled it little by little so that its tameness was amazing. Ptolemy gave appropriate rewards to the hunters and maintained the snake after it had been tamed. To foreigners who visited the kingdom it provided a great and extremely remarkable spectacle…"[171]

This anecdote is also useful for what it reveals about the criteria that guided Philadelphos' zoological curiosity. Indeed, we are told that the king was interested in "animals that had not previously been seen and [that] were of extraordinary character", suggesting that both geography – since animals from further afield were less likely to have been "seen" – and physical and behavioural properties – which might contribute to an "extraordinary character"[172] – were deemed to be important by the king, who might then claim the honour of being πρῶτος εὑρετής, or "first discoverer", of the species concerned.[173] This royal interest in animals of "extraordinary character" fits very neatly with the near contemporary development of paradoxography, a literary genre concerned with the study of different categories of *thaumata* ("marvellous things"), including unusual animals.[174] Paradoxography is usually assumed to have developed in Alexandria during the third century B.C., not least because the final section of our best-preserved paradoxographical work, Antigonos of Karystos' *Historiae Mirabiles*, derives from an earlier treatise by Kallimachos of Kyrene, who is commonly held to be the father of the genre.[175] Antigonos tells us that another paradoxographer based in Alexandria, one Archelaos of Chernosesos, numbered among those "who explained *paradoxa* in epigrams to Ptolemy".[176] While the identity of the Ptolemy in question has been debated, it is clear that paradoxography found an audience among the

[171] Agatharchides fr. 80b Burstein, with omissions. See also fr. 74a Burstein: "sphinxes, dogheads and cepi are sent to Alexandria from the country of the Trogodytes and from Aethiopia."
[172] Argued by Bodson 1998a, 61-85; *Id.* 1998b, 139-212.
[173] Coleman 1996, 59-60; Trinquier 2002, 875.
[174] Giannini (1963, 247-263) identified six categories of "wonderful" things in his seminal introduction to the genre, including "Meraviglioso naturale". For a monographic study of paradoxography, in Spanish, see now Pajon Leyra 2011. The best accounts in English remain those of Schepens (1996, 375-409) and Delcroix (1996, 410-452).
[175] Cameron 1995, 81; Schepens 1996, 383; Bing 2009, 266.
[176] Antig., *Mir.*, 19, 4; cf. Schepens 1996, 400-401.

uppermost echelons of Alexandrian society, forming a kind of "literary counterpart to the activities of the hunters and explorers."[177]

The programme of importing exotic animals into Alexandria slowed down after the death of Philadelphos in 246 B.C. Aelian tells us that three more great snakes were captured and transported to Alexandria during the reign of his son and successor Ptolemy III Euergetes,[178] but our sources then fall silent until the reign of Ptolemy VI Philometor, who, as we have already seen, was said to have imported pheasants from the East and to have kept them in the royal palace. An inscription from the Temple of Isis at Philae suggests that this king also offered monkeys, a giraffe, and a panther to Harpokrates, the son of Isis,[179] but it is unclear whether this reflects historical reality or whether it simply provides one articulation of a conventional and/or symbolic dedicatory formula.[180] In any case, there is precious little to suggest that the project continued with the same scale and intensity during the second century B.C., and it is probably safe to conclude that its *floruit* fell during the reign of Philadelphos, a king whose animal collecting initiatives remain so well documented.

Whilst this animal collection project has captured the attention of modern scholars, it is important to note that very clear traces survive of another strand of the Alexandrian interest in the natural world: a culture of describing animals encountered in foreign lands without necessarily capturing them, in the manner pioneered by Onesikritos, Aristoboulos, Nearchos and Kleitarchos during Alexander's Eastern campaigns. Once again, Agatharchides of Knidos emerges as a key witness. A series of fragments attributed to this author contain descriptions of exotic and unusual creatures encountered by the Graeco-Macedonians in Nubia and the Red Sea hinterlands during the third century B.C. Crucially, the content and context of many

177 Schepens 1996, 406.
178 Ael., *NA.*, XVI 39.
179 Trinquier 2002, 882-883.
180 Ibid.

of these descriptions indicate that they did not rely on the observation of animals in captivity, but that they were dependent on contact with specimens in the wild. An instructive example is provided by his description of the giraffe:

> "In the country of the Trogodytes there is also found the animal Greeks call 'camelopard', an animal that, like its name, has in a certain sense a composite nature. For it has the spotted coat of a leopard and is the size of a camel and very fast, and its neck is so long that it obtains its food from the tops of trees."[181]

In this particular instance, the explicit mention of the "country of the Trogodytes", the reference to the creature's propensity for eating from the tops of trees, and the inaccurate information concerning its size can all be explained if we assume that the description stemmed from interaction with giraffes in the territories south of Egypt, rather than in captivity. As we shall see in Chapter Three, this conclusion is entirely consistent with the descriptions of other Aethiopian animals attributed to Agatharchides.

VII. Home and Away

This introductory chapter has sketched some of the historical circumstances that framed developments in academic fields such as zoology during the Hellenistic period. The scope and nature of these developments can only be fully appreciated with reference to the body of artistic and visual material that was introduced in the first part of this chapter, which will be systematically analysed in the remaining parts of this thesis.

The chapter concluded with a brief discussion of the zoological descriptions attributed to Agatharchides of Knidos, which introduced an important distinction in the overarching

[181] Agatharchides fr. 73a Burstein.

context of this thesis: between animals that were imported into Alexandria on the one hand, and those which were seen and described in their natural habitats on the other. This distinction between animals seen at "home" and those described during visits "away" will be central to the discussions of Hellenistic representations of animals and what they reveal about contemporary natural science. As we shall see, it is likely that the works of art discussed in Chapters Two to Four of this thesis relied on interactions with exotic animals in the wild, while those discussed in Chapters Five to Seven depended on more detailed studies of individual creatures kept in captivity.

Chapter Two:

The Tomb of Apollophanes at Marisa:
Vestiges of Ptolemaic Natural Science in Hellenistic Palestine

I. Prelude

The majority of evidence concerning the Alexandrian intellectual achievement that was presented in Chapter One pertains to events and initiatives that can be dated with confidence to the third century B.C. It is for this reason that the Tomb of Apollophanes in Marisa provides the very best starting point when attempting to re-construct the outlines of Alexandrian zoology. The painted animal frieze discovered in this tomb is the only work of art discussed in this thesis that certainly belongs to the third century B.C. It therefore provides an important chronological anchor, and constitutes a useful point of comparison for closely related works of art belonging to later periods, not least the Nile Mosaic at Praeneste.

After discussing the discovery and the dating of the tomb at the beginning of this chapter, I shall present an important selection of archaeological, papyrological and numismatic evidence that attests to the close connections that existed between Marisa and Alexandria during the third century B.C. These connections provide an historical framework for analysing the iconography of the animal frieze and the decoration of the tomb more broadly. The iconography of the frieze, it will be argued, can be connected with the animal collecting initiatives of Ptolemy II Philadelphos, some of which were discussed in the previous chapter.

II. Discovery and Dating

The Tomb of Apollophanes was discovered in 1902 just to the east of Tel Ṣandannah,[182] one of four sites that had recently been excavated in the vicinity of Beit Jibrîn by a team of British archaeologists (Figs. 3, 4). The tomb was distinguished from most others in the region by

[182] This Arabic name stems from the twelfth century A.D. Crusader church of St. Anne in the area of the tel.

virtue of its astonishing painted decoration, including a frieze depicting a continuous sequence of animals accompanied by identifying labels in Greek. A second tomb discovered nearby, known today as the Tomb of the Musicians, also yielded several remarkable wall paintings.[183]

The majority of grave goods deposited in the Tomb of Apollophanes had been looted by the time of its discovery. As a result, the best evidence for dating the tomb was supplied by thirty-five Greek inscriptions recording the names of the deceased, twenty-six carved and nine painted.[184] One of these, honouring a certain Apollophanes (Fig. 5), accounts for the modern nomenclature of the tomb, and has confirmed the identity of Tel Ṣandannah as Marisa (Hebrew: *Maresha*), a Judaean settlement mentioned eight times in the Bible,[185] which was therefore located approximately 40 km south-west of Jerusalem. The inscription reads:

> "Apollophanes, son of Sesmaios, thirty three years chief of the Sidonians at Marisa, reputed the best and most kin-loving of all those of his time; he died, having lived seventy-four years."[186]

The excavators recognised that several other inscriptions found in the tomb honoured members of Apollophanes' family, and this permitted them to construct a family tree spanning some four generations, and to establish the relative chronology of the burials in the tomb.[187] Generally speaking, the names of the first generation, including Sesmaios, Apollophanes' father, were Semitic, while those of the second generation, including Apollophanes himself, were Greek. Like the Greek language used for the inscriptions, this transition seems to reflect the impact of Hellenism on the colonial Phoenician population. In

[183] For Tomb II and its decoration see Jacobson 2007, 19, 37-38; Erlich 2009, 77-80.
[184] For the inscriptions see Peters and Thiersch 1905, 37-75.
[185] Levine 1999, 201.
[186] Adapted from Peters and Thiersch 1905, 38.
[187] Peters and Thiersch 1905, 61-62.

the third and fourth generations, meanwhile, there were Idumaean names, including two that incorporated the theophorous prefix 'Qos'. It is possible that this second transition provides evidence of the assimilation of the Sidonian colonists into the local Edomite population. Some support for this view is provided by a marriage contract written on a sherd of a ceramic jug and dated to June 176 B.C., excavated elsewhere in Marisa, which documents the wedding of a local man named *QWSRM* to his bride Arsinoë.[188]

Two systems of dating were employed in the tomb inscriptions. One of them clearly pertains to the period of Seleukid control in Marisa,[189] which began with Antiochos III's (*r.* 222 – 187 B.C.) decisive victory over the forces of Ptolemy V Epiphanes (*r.* 204 – 181 B.C.) at the battle of Paneion in 200 B.C.[190] The dates encompassed by this system span from year 117 of the Seleukid era, 196 B.C., until 119 B.C.,[191] seven years prior to the capture and destruction of the city by John Hyrcanus. The second system of dating is considerably less straightforward. It refers only to the years A, B and E, and so covers a period of just five years. The excavators suggested that the system alluded to a local era at Marisa,[192] but their explanation has been questioned on account of its failure to account for the puzzlingly short five-year span.[193] A more convincing interpretation has been advanced by Oren and Rappaport, who suggest that the system refers to years 1 to 5 of the reign of a Ptolemaic king.[194] The most obvious candidate is Ptolemy V Epiphanes, whose control of Palestine began with his accession in 204 B.C., and ended with his defeat by Antiochos III in 200 B.C., a period of precisely five

188 Kloner 1997, 31.
189 Peters and Thiersch 1905, 77.
190 Berlin 1997, 14-15.
191 Jacobson 2007, 17; Kloner 2008, 177.
192 Peters and Thiersch 1905, 78-80.
193 Oren and Rappaport 1984, 148.
194 Ibid, 148-149.

years.[195] According to this reading, an inscription referring to the year Ϛ (=7) discovered in another Marisan tomb should refer to the regnal year of an earlier Ptolemaic king.[196]

The importance of this second system lies in the fact that two of the grandsons of Apollophanes were interred in the tomb in the years Β and Ε: 203/202 and 200/199 B.C., according to Oren and Rappaport's chronological framework. On this reading, Apollophanes' own burial indicates that the tomb was already in use some two generations previously, perhaps as early as the first half of the third century B.C.[197] Some loose support for this chronology is provided by a clay lamp found in Chamber D of the tomb, which has been dated to the late-third or early-second century B.C.[198] More significantly, perhaps, the closest architectural parallel for the tomb *outside* of Marisa is provided by Hypogeion A in the Alexandrian necropolis of Shatby,[199] which Marjorie Venit has dated to *c.* 280 – 250 B.C.[200]

The primary grave goods found in similar tombs in Marisa have also been dated to the third and second centuries.[201] A particularly interesting case is provided by Tomb T561, which was likewise located in the eastern necropolis of the city, not far from the Tomb of Apollophanes. This tomb, excavated in 1985, was the first to be discovered in Marisa that had not already been entered by grave robbers, and contained ten pieces of pottery which allowed it to be dated with some certainty to the first half of the third century B.C.[202]

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195 Ibid, 148-149.
196 Kloner 2008, 176.
197 Oren and Rappaport 1984, 149.
198 Peters and Thiersch 1905, 96-97.
199 Kloner 1999b, 230; *Id.* 2008, 177; Jacobson 2007, 48.
200 For Hypogeion A at Shatby see McKenzie 1990, 63-64; Venit 2002, 26-32. Venit herself (2002, 175) dates the Tomb of Apollophanes and the Tomb of the Musicians to the second century B.C. on the basis of "Comparison with Alexandrian tombs most similar in plan", but this chronology ignores the evidence of the tomb inscriptions.
201 Oren and Rappaport 1984, *passim*.
202 Kloner 2008, 179.

III. Ptolemaic Marisa

There can be little doubt, therefore, that the Tomb of Apollophanes originally belonged to the period of Ptolemaic control in Marisa, perhaps the end of the first half of the third century B.C. A range of archaeological and literary sources attest to the vitality of the city during Ptolemaic times, and provide a suitable framework for analysing the tomb and its decoration.

The British excavation of Tel Ṣandannah concentrated on the so-called Upper City, a large central mound with a diameter of *c.* 160 m.[203] Here the excavators identified several Hellenistic strata above an Iron Age II stratum, at least one of which belonged to the Ptolemaic city.[204] They also found a selection of architectural fragments that had been re-used in buildings of the second century B.C., indicating the existence of earlier monumental structures, plausibly of Ptolemaic date.[205] The best evidence for the Ptolemaic city, however, was provided by two of the three inscriptions excavated on the mound, which mention the names of Ptolemaic royal women. The first was a fragment of limestone with a slightly curved surface, upon which the letters ΒΕΡΕΝΙ were carved.[206] Berenike was, of course, a name closely associated with the Ptolemaic dynasty, and was repeatedly given to queens and princesses, especially during the third century B.C. The second was a fragment of a cylindrical statue base, with consecutive lines of text that were broken off at the bottom and on the left hand side (Figs. 6, 7). Soon after its discovery, the inscription was restored by M. Clermont-Ganneau as follows:[207]

[203] Bliss and Macalister 1902, 52-61; cf. Kloner 2003, 9-12.
[204] Bliss and Macalister 1902, 52-58.
[205] Kloner 1999a, 190; *Id.* 2003, 9.
[206] Bliss and Macalister 1902, 70.
[207] Ibid, 68-69.

[Βασίλισσαν Ἀρσ]ινόην, μεγάλην
[Θεὰν ? Φιλοπάτ](ο)ρα τὴν ἐγ Βασιλέως
[Πτολεμαίου καὶ] Βασιλίσσης [Βερενί-]
[κης, Θεῶν Εὐεργέτων . . . . .]

[The queen Ars]inoe great
[goddess (?) Philopat]or, daughter of the king
[Ptolemy and] of the queen [Bereni-
ke, the gods Euergetes]

This reading of the inscription has produced a broad consensus that the statue base honoured – and supported a statue of – queen Arsinoë III, the sister-wife of Ptolemy IV Philopator (*r.* 222/1 – 204 B.C.).[208] Certainly, the use of the accusative [Ἀρσ]ινόην rather than the genitive suggests that the text honoured a living queen rather than a posthumously deified one, circumstances which better suit Arsinoë III than the only other credible candidate, Arsinoë II, the sister-wife of Ptolemy II Philadelphos (*r.* 283 – 246 B.C.), who died in *c.* 270 B.C.[209] Clermont-Ganneau's additional suggestion that this statue was erected to celebrate the Ptolemaic victory at the Battle of Raphia in 217 B.C. has also been widely adopted, and has led some scholars to propose that the inscription mentioning Berenike should likewise be associated with this famous military event.[210] These historical circumstances are conceivable, but remain hypothetical in the absence of any additional evidence.

Important information concerning Marisa's relationship with the royal administration earlier in the century is provided by several of the so-called Zenon papyri. These papyri document the affairs of one Zenon, from Kaunos in Karia, who managed the estate of Apollonios, the minister of economic affairs (*dioikētēs*) of the kingdom under Ptolemy II Philadelphos. From *c.* 260/59 to 258/7 B.C., Zenon travelled to Syria and Palestine on behalf of Apollonios to

[208] Kloner 1999a, 190; *Id.* 2003, 9-10; Jacobson 2007, 1.
[209] Carney 2013, 104.
[210] Kloner 1999a, 190; *Id.* 2003, 9-10.

assess the resources and revenues of the country for tax purposes.[211] Several of the papyri documenting this assignment refer to Marisa, and indicate that the city was engaged in intensive trade with Egypt and the centres of the coastal plain at this time. Particularly interesting is a papyrus which records how Zenon sent letters to officials at Marisa concerning five young slaves that he had purchased in the city who had escaped and returned to their former masters.[212] This picture of a flourishing economic centre is supported by finds from the Lower City, which indicate that oil processing and pigeon raising were undertaken on a commercial scale.[213]

The numismatic evidence also attests to the prosperity of the city during the reign of Philadelphos.[214] Of the 950 coins that have so far been found at Marisa, 135 are Ptolemaic, and of these 116 were minted between the reigns of Ptolemy I Soter (*r.* 305 – 283 B.C.) and Ptolemy VIII (182 – 116 B.C.). 78 of these 116 coins can be dated to the reign of Ptolemy II, a significant proportion, and this surely provides some indication of the commercial successes enjoyed by the city during the reign of this king, and a reflection of its integration into the economic and administrative framework of his Empire.

In the context of the present investigation, however, the most pertinent point of contact with Ptolemaic Alexandria is provided by the subterranean tombs that have been excavated in the three necropolises which surrounded Hellenistic Marisa to the east, the south-west and the north of the city. To date, approximately fifty of these tombs have been discovered. Typically, they consist of a stepped *dromos* leading to a subterranean antechamber, from which one or three long burial chambers are accessed. Along the walls of these chambers are rock-cut

[211] Magness 2012, 84.
[212] P.Cair.Zen 59015.
[213] Kloner 2001, 103-131.
[214] For this numismatic data see Kloner 2008, 171-172, who goes so far as to conclude that "the main *floruit* of the city was under Ptolemy II."

benches, gabled *loculi*, and access points to auxiliary burial chambers.[215] The resemblances to the subterranean tombs constructed in Alexandria during the Hellenistic period are clear.[216] Here, too, burial chambers were arranged around the space first accessed by visitors to the tomb, and *loculi* were usually used to inter the deceased. The only substantive difference was provided by the nature of the entrance space: in Alexandria, open-air forecourts accessed by descending flights of stairs were preferred to subterranean antechambers accessed by stepped *dromoi*. Despite this difference in format, the similarities between the tombs are sufficient to permit the conjecture that burial practices in Alexandria helped to shape the Marisan tomb type during the early Hellenistic period,[217] even if Phoenician influences can also be discerned.[218] As we shall see, there are very good reasons to believe that some of the decoration of the Tomb of Apollophanes had its conceptual origins in the Ptolemaic royal capital.

IV. The Tomb of Apollophanes

Although the evidence is patchy, it is clear that Marisa was a thriving Hellenistic town at the time that the Tomb of Apollophanes was constructed in the mid-third century B.C. The tomb itself was located in the eastern necropolis of the city,[219] and was distinguished not only by its astonishing painted decoration, but also by its exceptional size: at *c.* 17 m x 20 m, it is the largest so far discovered in Marisa.[220] In general terms, it took the form of an inverted 'T', with a burial chamber occupying each branch, (three in total), all accessed from a central antechamber. Altogether the tomb contained forty-one gabled *loculi* (Fig. 8).

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[215] Erlich 2009, 61.
[216] Adriani 1936, 70 n. 5, 76-77 n. 5.
[217] Oren and Rappaport 1984, 150; Venit 2002, 15-16; Kloner and Zissu 2007, 175-176; Erlich 2009, 61-62.
[218] As argued by Tal 2003.
[219] The eastern necropolis was formed by a strip of subterranean tombs, oriented from north to south, located approximately 250 m east of the Upper City.
[220] Kloner 2008, 173. The following description is based on Peters and Thiersch 1905, 15-28; Jacobson 2007, 16-18, 22-36; Erlich 2009, 62-77.

The decoration of the tomb was concentrated in its central burial chamber, Chamber D, which occupied the central branch of the 'T'. The doorway connecting the antechamber (A) with this room was originally flanked by a square altar to the left, and a female bust on a square base to the right, both hewn from the bedrock in high relief. The doorjambs themselves were adorned with paintings, establishing the decorative tone for the burial chamber lying immediately behind. Two cocks were painted on the outside of the jambs, above the altar and the female bust respectively. These were juxtaposed with a three-headed Kerberos on the inner face of the right jamb, above which a short romantic poem was inscribed at a later stage (Fig. 9). [221]

Chamber D itself was rectangular in shape, and had thirteen *loculi* cut into its long walls, six to the north and seven to the south.[222] Benches ran along these walls at a lower level. At the rear, eastern, end of the chamber, three steps provided access to a raised platform carved from the bedrock, which was sculpted to resemble a *kline* (Fig. 10). This *kline* stood at the base of a gabled recess (E), which in turn served as a secondary vestibule providing access to three small auxiliary burial chambers on its north (XVIII), east (XVII) and south (XVI) sides. Since they did not contain *loculi*, it is possible that these chambers were designed to accommodate sarcophagi, which were presumably reserved for the most distinguished individuals interred in the tomb. This interpretation is supported by the inscription mentioning Apollophanes, the "chief of the Sidonians at Marisa" (Fig. 5), which was originally positioned above the opening leading into the southern auxiliary chamber (XVI).

[221] Peters and Thiersch 1905, 56-60.
[222] Two of the *loculi* on the southern side were joined in a later phase, destroying one of the animal depictions of the frieze.

The decoration of these spaces was extensive. Much of the rear wall of Chamber D was accounted for by the gable, but the remaining spaces – that is, the surfaces between the edges of the gable and the corners of the side walls – were covered in paintings. Red podia were depicted at the base of the wall to either side of the gable, on top of which were painted round tripod tables, themselves surmounted by *thymiateria* (incense burners). Above these *thymiateria* was a garland that was both carved and painted, which in fact encircled the entire tomb, continuing (in its painted form) along the side walls of Chamber D, and then into the (unpainted) burial chambers that lay to the north (B) and south (C) of the antechamber. On the rear wall of Chamber D, two eagles were depicted standing above the garland, their wings outstretched and their heads turned towards the gable that separated them.

Together these elements created a decorative frame for the rear wall of the gabled recess. In the centre of this wall, the entrance to the eastern auxiliary burial chamber (XVII) was fashioned as a Doric *naiskos* in relief (Fig. 11). Red podia were painted on the wall to either side of the *naiskos*, and on top of these stood large black flat-bottomed *amphorae*, with conical lids terminating in decorative finials. These vessels are usually interpreted as Panathenaic *amphorae* thanks to their distinctive black colour, loop handles, and narrow necks and feet.[223] Their similarity to actual Panathanaic *amphorae* surviving from the Hellenistic Period[224] (Fig. 12) and to one such vessel depicted in a second century B.C. mosaic from Delos[225] lend strong support to this reading.[226]

The sidewalls of Chamber D were also lavishly decorated. The wall surfaces between the gabled *loculi* were painted to resemble fluted Ionic pilasters, depicted as though they had a

[223] Peters and Thiersch 1905, 23; Jacobson 2007, 23.
[224] For Panathenaic amphorae in the Hellenistic period see Boardman 1974, 169-170.
[225] Bruneau 1972, 264.
[226] Certainly there is precious little to corroborate the alternative view that the vessels were intended to represent *loutrophoroi*, for which see Kloner 2010, 55-61.

structural function, "supporting" the gabled structures with which they alternated.[227] Wreaths were painted in the spaces above the capitals of the pilasters, seemingly "hanging" from the walls of the room. Above them, and indeed the gables, the famous animal frieze extended along the length of each wall, and this will be described in greater detail below. Both walls were crowned by the painted garland, which, as we have already seen, also continued along the rear wall of the chamber and into Chambers B and C.

The majority of these decorative elements have traditionally been interpreted as "symbols": that is, as visual metaphors which carried implicit meanings that were independent of – and not obviously related to – their iconography. For example, the eagles are sometimes viewed as symbols of the "apotheosis of the [human] soul",[228] the garland as a symbol of "victory over death", and the cocks as symbols of the triumph of day over night, and by implication, of life over death.[229] Such interpretations no doubt stem from a desire to read the individual motifs as thematic concomitants of their common funerary context, but in reality the supposition that all of the images were imbued with a particular eschatological or chthonic significance is methodologically flawed. Indeed, there is very little to suggest that artistic motifs were systematically employed as visual metaphors during the Hellenistic period in the manner that they were in later Christian art. Only the Kerberos on the inner face of the right doorjamb leading into Chamber D can be safely identified as a chthonic image,[230] given this three-headed canine's traditional role as guardian of the underworld in Greek art and thought.

It is more significant that several of the decorative elements employed in the tomb can be widely paralleled in funerary contexts elsewhere in the Hellenistic world, notably the Doric

[227]The related theory (Meyboom 1995, 101-102; *Id.* 2011, 93; Jacobson 2007, 46) that they were intended to produce a "simulacrum of a royal Ptolemaic banqueting hall" remains entirely speculative.
[228] Jacobson 2007, 25; cf. Peters and Thiersch 1905, 88-90; Rozenberg 2001, 314; Erlich 2009, 66.
[229] Rozenberg 2001, 313-314; Erlich 2009, 66.
[230] Venit 2002, 177-178.

naiskos, the altar, the *kline*, the garland and wreaths. The correspondence with examples elsewhere suggests that these elements were included because they belonged to a more widespread funerary *koine*, and because they were commonly used to enrich the sacral, celebratory atmosphere of tombs in the Hellenistic world. The decorative elements that *cannot* be paralleled elsewhere should perhaps be interpreted in an analogous manner. Far from representing the "apotheosis of the soul", therefore, the eagles on the rear wall of Chamber D were probably, in fact, just eagles, and their depiction in the tomb is entirely comprehensible in these terms. The eagle was, after all, among the most powerful of birds, an aspect cemented by the Ptolemaic kings' continued depiction of this creature as an avatar for Zeus, the divine protector of their kingdom and dynasty (Fig. 149).[231] The Panathenaic *amphorae* on the rear wall of the gabled recess, meanwhile, need not be seen as "a symbolic motif representing victory over death"[232] thanks to their connections with athletic victory at the Panathenaic games. Rather, the *amphorae* should be taken at face value: as highly prized storage vessels which for centuries had been awarded to great men in the Greek world as trophies commemorating terrestrial triumphs. The examples depicted in the tomb were surely conceived in these terms: as emblems of success, which may also have reflected the cultural orientation of those interred within, and their taste for quintessentially Greek imagery and paraphernalia.[233]

Clearly, then, the Tomb of Apollophanes incorporated an interesting and diverse assemblage of visual ideas, some of which belonged to a pre-existing *koine* of funerary iconography, but all of which were desirable and readily comprehensible in this funerary context. Together these visual ideas helped to validate the tomb context, and hinted at the privileged status and

[231] According to one view, the eagles painted in the Tomb of Apollophanes are versions of the open-winged eagles depicted on the coins of Ptolemy I Soter and Ptolemy II Philadelphos: see Rozenberg 2001, 314, 318 n. 11; Erlich 2009, 66.
[232] Erlich 2009, 67.
[233] Mielsch 2009, 367.

cultural pretensions of the deceased. It is against this background that we should view the painted frieze of Chamber D, which was, without question, the most exceptional decorative element included in the tomb, and which provides a fascinating glimpse of the reception of Ptolemaic natural science in Hellenistic Palestine.

V. The Painted Frieze

As we have seen, the painted frieze occupied the space above the painted wreaths and gabled *loculi* on the north and south walls of Chamber D. The frieze was *c.* 7.70 m long on the south wall, *c.* 6.40 m long on the north wall, and *c.* 0.35 m high,[234] and depicted a continuous sequence of animals rendered in profile accompanied by identifying labels in Greek (Fig. 13). Descriptions of the painting tend to begin with the westernmost scene of the south frieze, and proceed along the entire length of this wall, before continuing with the easternmost scene of the north frieze, proceeding back towards the entrance of the tomb, and finishing with the westernmost creature on this wall. This order is conditioned by the orientation of the animals themselves, the majority of which on the south side of the chamber face the rear (eastern) end of the tomb, while most on the north side face the front (western) end, creating something resembling a continuous progression.[235] Whether or not viewers in antiquity would have viewed the frieze in this order is difficult to tell,[236] especially when we consider that the narrow proportions of the chamber meant that it would have been impossible to view the composition on either wall as a single homogenous unit.

[234] Jacobson 2007, 22.
[235] Erlich 2009, 70.
[236] As proposed by Erlich 2009, 70. Erlich also suggests that the "right-to-left progression reflects a Semitic conception", but in reality this is not susceptible of proof.

Entering Chamber D from the antechamber (A), and looking up and to the right, the viewer would first have encountered the westernmost scene of the south frieze, depicting two human figures hunting a leopardess (Fig. 14).[237] On the right was a wreathed trumpeter, wearing a short-sleeved *chiton* girdled above the waist, a red *chlamys* fixed to his right shoulder, a scabbard at his left hip, and white sandals. He was shown blowing a long trumpet that he held horizontally in his right hand, probably a *salpinx*, a ceremonial instrument frequently used in cultic, military and civic contexts in the Graeco-Roman world.[238] To his left was a hunter on horseback, shown hurling a spear at the leopardess in front of him with his raised right arm while grasping the harness of his rearing mount with his left. He wore a short *chiton* with a red girdle, a *chlamys* trailing in the wind, and red breeches. His horse, meanwhile, was equipped with a red harness and an ornately decorated saddlecloth. Facing them was a lactating leopardess, also standing on her rear legs, with spots rendered in red and black. She had an arrow lodged in her breast, with blood pouring from the wound. A lean hunting dog was shown attacking her from behind, while a second hound sprang forward alongside the horse and rider. The scene was framed on its left hand side by an impressionistically rendered tree in black, which has been identified as a palm frond.[239]

Above the horseman was a painted inscription, read by the excavators as: ΙΠΠΟC ΛΙΒΑΝΟΥ ΤΟΥ ΙΠΠΙΚΟΥ, "horse of Lebanon of the horseman".[240] Paul Meyboom, meanwhile, has suggested an alternative reading: ΙΠΠΟC ΛΙΒΑΝΟΥ ΤΟΥ ΙΠΠΑΡΧΟΥ, "horse of Libanos, the cavalry-commander".[241] Much depends on whether the genitive Λιβάνου was conceived as a geographical designator or as a personal name, but in truth the evidence surviving from antiquity can support either reading. On the one hand, Theophrastos

[237] The following description is based on Jacobson 2007, 25-27; Erlich 2009, 72-72.
[238] Kloner and Braun 2003, 49.
[239] Jacobson 2007, 45.
[240] Peters and Thiersch 1905, 24; Avi-Yonah and Kloner 1993, 955.
[241] Meyboom 1995, 44; cf. Rostovtzeff 1941, 520.

had used the term Λίβανος to designate Mt. Lebanon in his *Inquiry into Plants* sometime in the late-fourth or early-third century B.C.[242] On the other, Λίβανος is widely attested as a personal name in the Graeco-Roman world, appearing some twenty-two times in the published editions of the *Lexicon of Greek Personal Names.*[243] Strikingly, the name is also recorded in nine Egyptian papyri surviving from the third century B.C., two of which belong to the aforementioned Zenon archive.[244] The identifying inscription that accompanied the leopardess, meanwhile, is considerably less difficult to decipher, and certainly read ΠΑΡΔΑΛΟC.

To the left of the impressionistic palm frond followed a sequence of animals, the majority of which faced the rear (eastern) wall of the tomb.[245] From right to left, the sequence of creatures was as follows:[246] a lion with a thick mane, erroneously identified as a panther by its accompanying inscription (ΠΑΝΘΗΡΟC) (Fig. 15); an animal destroyed by the breaching of two *loculi*, perhaps also a large feline;[247] a collapsing bull (labelled ΛΥΚΟ ΤΑΥΡΟC, "wolf-bull") with blood pouring from its mouth, being attacked by a coiled serpent (Fig. 16); a giraffe (labelled ΚΑΜΕΛΟΠΑΡΔΑΛΟC) (Fig. 16); an unlabelled creature variously identified as a boar or a warthog (Fig. 16);[248] a griffin (labelled ΓΡΥΨ) with its right paw raised (Fig. 17), the only mythological creature represented on the southern portion of the frieze; an oryx (labelled ΟΡΥΞ) standing immediately behind a second palm frond (Fig. 17); and, penultimately, a two-horned rhinoceros (labelled ΡΙΝΟΚΕΡΩC) (Fig. 18). The frieze was

242 Theophr., *Hist. pl.*, IX 7, 1.
243 *LGPN* I, II, IIIA, IIIB, IV, VA, VB *s.v.* Λίβανος.
244 P.Hibeh 1 101, 2-3; P.Count. 19, 119; P.Col.Zen. 1.5 + P.Col.Zen. 2.63, Vo. Col. 3, 22; P.Cairo.Zen. 2. 59143, Ro 1; PSI 6 569, Ro 11; BGU 14 2392, 10; P.Count. 47, 304; P.Enteux. 62, Ro 1 and Vo 2; P.Tebt. 3 884, 4 and fr. 3 50.
245 Only the un-labelled creature identified as boar or warthog and the snake attacking the bull face the western end of Chamber D.
246 The following description of the animal frieze is based on Meyboom 1995, 44-50; Jacobson 2007, 27-36; Kloner 2008, 174-175; Erlich 2009, 69-75.
247 Jacobson 2007, 28.
248 Peters and Thiersch 1905, 25; Jacobson 2007, 29 (boar); Meyboom 1995, 47 (warthog).

completed, on its eastern (far left) side, by a saddled elephant (labelled ΕΛΕΦΑC) led by an axe-wielding mahout, who was perhaps accompanied by a second (female?) figure, and above whom there was an additional painted inscription reading ΑΙΘΙΟΠΙΑ, "Aethiopia" (Fig. 18). As we shall see, the scope and significance of this geographical label have been much debated by scholars.

The frieze continued on the northern side of Chamber D, where most of the creatures faced the entrance to the room.[249] Starting from the back of the room, and moving from right (east) to left (west), the sequence of creatures was as follows: an unlabelled fish with a trunk, tusks, and feathers on its tail (Fig. 19); a second unlabelled fish with a rhinoceros-like horn (Fig. 19); a crocodile (labelled ΚΡΟΚΟΔΙΛΟC) with an ibis (labelled ΙΒΙC) perching on its back (Fig. 20); an unlabelled animal which is usually identified as a hippopotamus (Fig. 20); a wild ass (labelled ΟΝΑΓΡΙΟC) being attacked by a serpent in a manner reminiscent of the bull on the south frieze, with blood pouring from a bite on its neck (Fig. 21); an unidentified mammal with the fragmentary label ΙΥΙ•Λ, which has been variously interpreted as a wolf,[250] a field rat,[251] a lynx,[252] and a hyena (Fig. 21);[253] a second unidentified mammal with the fragmentary label ΛΟΦ, most plausibly another rhinoceros (Fig. 22);[254] a porcupine (labelled ΥCΤΡΙΞ) (Fig. 22); a lynx (labelled ΛΥΝΞ) with curiously long ears (Fig. 23); and, finally, another unidentified animal with a fragmentary label (Η…C), characterised by a fully frontal human-like face with a long beard, and by a body recalling that of the lion on the southern frieze (Fig.

[249] Exceptions are provided by the fish with a rhinoceros-like horn, the wild ass fighting a serpent, and the porcupine.
[250] Peters and Thiersch 1905, 27.
[251] Avi-Yonah 1993, 789.
[252] Rice 1983, 97.
[253] Meyboom 1995, 45.
[254] Hammerstein 1980, 96; Meyboom 1995, 45; Rozenberg 2001, 318 n. 14. The identification of this animal as a tapir (Peters and Thiersch 1905, 27-28; Avi-Yonah 1993, 789) seems unlikely given that the animal is indigenous to Central and South America and Southeastern Asia.

23). The frieze was terminated by a tree painted in a greyish hue, perhaps representing an acacia.[255]

With the exception of the hunting scene, and the bull/serpent, wild ass/serpent, and crocodile/ibis groups, the animals are treated paratactically, and do not engage with each another in any meaningful way. This feature is surprising given the recurring juxtaposition of what we might reasonably term "predators" and "prey" in the frieze, and presents a stark contrast to a comparable painted animal frieze in the so-called Tomba François in Vulci in Italy, a composition usually dated to the second half of the fourth century B.C., in which many of the animals are depicted bounding forwards, some attacking their prey, others defending themselves for dear life (Fig. 24).[256] The comparative lack of interaction between the animals in the painted frieze at Marisa lends the composition a certain artificiality, and this is underscored not only by the accompanying identifying labels, but also by the complete lack of attention paid to the relative scale of the creatures: the porcupine is the same size as the adjacent hippopotamus, the elephant is the same size as the adjacent rhinoceros, and the giraffe is much too small in comparison to the adjacent warthog/boar.[257]

A possible explanation for the unrealistic scale is suggested by an analysis of the animal representations themselves, since many of the species are so detached from reality that it is clear that the artist(s) responsible for depicting them had never seen them in real life. The giraffe of the southern frieze is particularly instructive in this respect, since its hind legs are the same length as its forelegs, and so its hindquarters do not slope towards its tail as they do in reality; its head is too large, and sits on top of an implausibly slender neck; and the schematised red and brown spots of its pelt resemble those of the leopardess, and seem far

[255] Jacobson 2007, 35.
[256] For this frieze see Steingräber 1986, 377-380.
[257] Peters and Thiersch 1905, 28; Jacobson 2007, 28.

removed from the complex coat pattern of dark blotches separated by light hair seen on real life specimens (Fig. 25). Cumulatively, these elements combine to form a creature that appears quite unlike a giraffe, instead resembling "a spotted deer with a very long neck".[258] Comparable inaccuracies occur elsewhere in the composition, particularly in the northern frieze, in which the represented species were depicted with less attention to detail than their counterparts to the south.[259] Most notably, perhaps, the creature identified as a lynx is depicted with extraordinarily long ears that seem far removed from the pointed ears of real life specimens (Fig. 26).[260]

In light of such inaccuracies, it would be all too easy to dismiss the painted frieze – and indeed the decoration of the tomb more generally – as the work of provincial painters whose artistry fell considerably short of that of the finest paintings of the Hellenistic period. After all, the use of a limited colour palette of black, red, blue and green, and the conspicuous absence of elements traditionally used to develop perspective in paintings resulted in an inherently two-dimensional composition with a final effect that has been compared to that of Greek vase painting.[261] But assessing the artistry of the frieze in this manner is something of a false narrative, since it depends on a holistic knowledge of the art of the Hellenistic period and its reception by scholars in modern times. What really matters is the relative quality of the frieze in the eyes of those by whom it was it originally seen: that is, the inhabitants of third century B.C. Marisa, particularly those responsible for commissioning the tomb and its decoration. The most relevant comparative evidence is provided by the fifty or so rock cut tombs that have been excavated in the necropolises that surrounded Marisa, of which only the neighbouring Tomb of the Musicians has also yielded painted decoration. In all likelihood, therefore, the frieze was exceptional for all of the right reasons in its local context,

[258] Ibid.
[259] Peters and Thiersch 1905, 28; Jacobson 2007, 39-40.
[260] Peters and Thiersch 1905, 28; Jacobson 2007, 35.
[261] Jacobson 2007, 39.

helping to define the Tomb of Apollophanes as a particularly sumptuous burial space in comparison to the graves of his contemporaries. We should view the frieze through this lens as we turn to analyse its iconography.

VI. The Hunting Scene

The only part of the composition with a truly "narrative" dimension was the hunting scene at the western end of the northern frieze (Fig. 14). The central figure in this scene, in every sense, was the mounted horseman, depicted in the act of hurling a spear at the leopardess standing before him. The motif of the armed rider is well attested in funerary art of the late-Classical and Hellenistic periods, particularly in Alexandria, Macedonia and Thrace.[262] A particularly close parallel is provided by one of the riders represented in a painted frieze that decorated the rounded vault of the central chamber of a late-fourth or early-third century B.C. tomb at Alexandrovo in Thrace (Fig. 27), which showed eight armed men – some mounted and some on foot – hunting boars and deer with the assistance of a pack of hounds.[263] Like the Marisan horseman, the rider in question sits on the back of a rearing horse, beneath which a hound springs forwards on its hind legs. Other points of contact include the angle at which the rider holds his long spear, his red breeches, and the richly decorated saddlecloth upon which he sits.[264] Viewed in tandem with such comparanda, the hunting scene of the Tomb of Apollophanes appears as one articulation of a motif that belonged to a more widespread *koine* of funerary imagery in the Hellenistic world, much like the *naiskos*, altar, *kline*, garland and wreaths, as we have already seen.

[262] See, for example, Brown 1957, 26 pl. XI; Rhomiopoulou 2000, 58; Venit 2002, 55-58. Another interesting parallel is provided by a painted amphora from Kültepe in Kappadocia, dated to the fourth or third century B.C., which likewise depicts a mounted rider wearing *anaxyrides* pointing a spear at a rearing leopard: see Miller 2014, 196.
[263] Kitov 2001, 15-29; *Id.* 2002, 42-45.
[264] Erlich 2009, 72; cf. Mielsch 2009, 366.

The armed rider motif also had a strong pedigree in Hellenistic royal iconography, both in funerary and non-funerary contexts. An archetypal example is provided by the painted frieze of the Tomb of Philip II in Vergina, which depicted ten armed men, three of whom were on horseback, hunting deer, a boar, a lion and a bear in a sacro-idyllic landscape setting.[265] Other examples include the hunting and battle scenes of the so-called Alexander Sarcophagus from Sidon (Fig. 28);[266] the bronze group dedicated by Krateros at Delphi to commemorate the occasion that he saved Alexander from a lion during a hunt;[267] a marble relief from Messene now in the Louvre, which may document the same episode;[268] and the depiction of Ptolemy IV Philopator on horseback on the Raphia decree (Fig. 29). It is tempting to interpret the Marisan hunting scene as a deliberate adaption of this royal mode of representation to honour a provincial aristocrat,[269] but in truth it is difficult to discern whether it would have been perceived as such during antiquity. The most we can say is that the motif carried intimations of privileged status and terrestrial accomplishment that ensured that it was well suited to this aristocratic funerary context.

Even if so, the precise nature of the relationship between the motif and the individuals buried in the tomb is difficult to pin down. If, as the excavators proposed, the inscription above the rider originally read "[the] horse of Lebanon of the horseman", it is possible that the rider represented one of those interred in the tomb, perhaps even Apollophanes himself. In this case the motif's connotations of high status would have been directly fastened on the deceased, painting him as a privileged individual who belonged to the uppermost echelons of Marisan society.[270] It may also have alluded to an actual interest and/or participation in hunts during his lifetime, an idea that is brought into sharper focus when we consider the literary

[265] Andronikos 1984, 106-119.
[266] von Graeve 1970, 58-61; Houser 1998, 281-291.
[267] Plut., *Vit. Alex.*, XL, 4; Plin., *HN.,* XXXIV, 63-64; cf. Palagia 2000, 183-185.
[268] Palagia 2000, 202-204; *Id.* 1998, 27-28.
[269] Suggested by Erlich 2009, 71-72.
[270] Miller 2014, 196.

evidence for the popularity of this activity in the Levant during the Hellenistic period.[271] Indeed, the apocryphal *Testaments of the Twelve Patriarchs,* dated to *c.* 100 – 70 B.C., include a description of the joys of hunting in Judaea,[272] and an earlier decree of Antiochos III concerning Jerusalem and its temple, dated to *c.* 198 B.C., reveals that animal skins were traded in the region.[273] If, on the other hand, the inscription identified the horseman as "Libanos, the cavalry-commander", the motif can only have alluded to the deceased in a more tangential manner, since the inscriptions naming those who were buried in the gabled *loculi* suggest that no one named Libanos was ever interred in the tomb itself.

In any case, the local frame of reference is confirmed by two elements of the iconography that seem to allude to the Sidonian ethnicity of the deceased. Firstly, the animal being hunted was a leopardess, and this choice of prey presented a contrast to Macedonian hunting scenes, in which the lion, the royal animal *par excellence*, was most frequently represented.[274] The only parallels are offered by two royal sarcophagi from Sidon itself, one of which is the aforementioned Alexander Sarcophagus, which is commonly believed to have housed the remains of Abdalonymos, the man appointed to rule the Sidonians by Alexander the Great. The short hunting scene of the sarcophagus showed a party of Sidonian hunters spearing a magnificent leopard (Fig. 28),[275] and this theme was repeated on the so-called Satrap Sarcophagus from the same cemetery, one side of which showed the mounted Satrap and another rider in his entourage aiming spears at a cowering leopard.[276] In light of these precedents, it seems very possible that these big cats had a specifically Levantine frame of reference, especially when we consider that they were also represented in the decorative programme of the Toubiad stronghold of Qasr al-Abd at 'Iraq el-Amir, built in the early-

[271] The evidence is presented by Jacobson 2007, 44.
[272] *The Testament of Judah,* 2:3-7.
[273] Josephus, *AJ* XII 146.
[274] Franks 2012, 36-41.
[275] von Graeve 1970, 58-61; Pasinli 1996, 86-89.
[276] Pasinli 1996, 79.

second century B.C.[277] No less significant were the red breeches worn by the Marisan horseman, which find few parallels in the Hellenistic visual tradition. Such garments had long been associated with the East in the Greek world,[278] and the closest iconographic precedents are again found in the sculptural decoration of the Sidonian royal sarcophagi, on which native warriors and hunters were represented wearing similar *anaxyrides*.[279] Together, these features suggest that the hunting scene of the painted frieze was conceived as taking place in the Levant, and this would be all but confirmed if the excavators were indeed correct in recognising a reference to "Lebanon" in the accompanying inscription.

To summarise, then, the hunting scene of the painted frieze of the Tomb of Apollophanes recalled other elements of the tomb's decoration in re-producing a motif which belonged to a more widespread *koine* of upper class funerary imagery in the Hellenistic world, some of which was royally sponsored. This motif was carefully adapted to its Levantine context through the inclusion of iconographic details that reflected the Sidonian ethnicity of those buried in the tomb. This complex interplay of external visual ideas and local influences is a process that can also be detected in the animal frieze proper, to which we may now turn.

VII. The Animal Frieze

As we have already noted, the hunting scene was separated from the rest of the southern portion of the frieze by an impressionistically rendered palm frond. The relationship between these two parts of the composition has been much discussed, and is crucial to our understanding of the iconography. According to one school of thought, the two sections formed a unitary narrative composition, which together depicted a hunting expedition in a

[277] Queyrel 1991, 209-251.
[278] Castriota 2005, 89-102.
[279] Mielsch 2009, 366.

location specified by the geographical label accompanying the elephant and mahout at the far eastern end of the frieze: Aethiopia.[280] One proponent of this view has even argued that the northern portion of the frieze also formed part of this Aethiopian hunting narrative.[281] According to a second school of thought, however, the narrative aspect was limited to the leopardess hunting scene, and the remainder of the southern frieze was conceived in isolation, together with the whole of the northern frieze.[282]

To my mind, there is precious little to support a narrative reading of the entire composition as a hunting expedition in Aethiopia. An obvious objection is provided by the general absence of hunters, since the armed rider pursuing the leopardess – who was, after all, separated from the rest of the animals by a tree – was the only hunter represented in the entire frieze. Moreover, the notion that the "Aethiopia" label applied to the leopardess hunt is itself problematic, given that this section of the frieze was probably located in the Levant by carefully selected iconographic details, and perhaps also by an inscription referring to "Lebanon", as we have seen. The animals themselves, meanwhile, were treated paratactically, and just as there is very little to suggest that they interacted with each another, there is also no evidence to suggest that they were conceived as interacting with an (invisible) hunting party. A narrative reading of the northern frieze is completely excluded by the presence of two fantastical fish depicted at its eastern extremity, which could hardly be hunted in the same manner – or indeed inhabit the same environment – as the terrestrial animals.

Even so, the "Aethiopia" label remains a significant feature, and indicates that "Aethiopia clearly played a role in the conception of the frieze".[283] This point is underscored by the inclusion of several characteristically Aethiopian animals in the composition, not only the

[280] Meyboom 1995, 44-49; Erlich 2009, 72-73.
[281] Meyboom 1995, 44-49.
[282] Jacobson 2007, 42.
[283] Versluys 2010, 585.

elephant, but also the giraffe and the two rhinoceroses. At first sight, the decision to depict these exotic African animals in Hellenistic Idumaea seems difficult to explain, but the issue is clarified when we recall the mid-third century B.C. date of the tomb and the close relationship with Ptolemaic Egypt that Marisa enjoyed at this time. We saw in Chapter One that that Ptolemy II Philadelphos launched a large-scale military expedition to Aethiopia and Nubia in *c.* 275 B.C., and that this expedition paved the way for the importation of "extraordinary" animals into Alexandria, many of which were subsequently paraded in the king's Grand Procession.[284] Viewed in this context, it seems likely that the depiction of Aethiopian animals in the Tomb of Apollophanes owed something to Marisa's close relationship with Alexandria during the mid-third century B.C.

This theory is brought into sharper focus when we compare the Marisan frieze with two works of art that articulated comparable thematic and iconographic concerns. The first is a tessellated mosaic from the Shatby district of Alexandria, which depicted, in its centre, three Erotes hunting a stag, no doubt a variant of the hunting motif known from earlier Macedonian mosaics (Fig. 30).[285] One of the borders that surrounded this central field depicted a continuous sequence of animals, four on each long side and three on each short side, consisting of lions, leopards, griffins, a bull, a boar, a stag, a gazelle, a ram, and a hyena. Several of these creatures recur at Marisa, although we should note that at Shatby no identifying labels were attached to the individual representations. Still, the similarities between the compositions were not limited to their choice of fauna, but also included the juxtaposition of real and fantastical animals, the use of sketchily rendered trees to create a superficial landscape setting, the lack of attention paid to the relative scales of the creatures, and – most strikingly – the paratactic treatment of the individual animals (Fig. 31).[286] The mosaic has been

[284] Burstein 1989, 1-12.
[285] For this mosaic see Brown 1957, 68-69; Daszewski 1985, 103-110.
[286] Erlich 2009, 74-75.

dated to *c.* 290-260 B.C. on technical grounds,[287] and it therefore offers excellent contemporary evidence that the sequential, paratactic format of the Marisa frieze was one that may have been borrowed from the Ptolemaic royal capital.

Equally instructive is a comparison with the Nile Mosaic at Praeneste, a late-second century B.C. *opus vermiculatum* masterpiece which, as we shall see in Chapter Three, was probably a later version of a third century B.C. work of art from Ptolemaic Alexandria (Fig. 33).[288] The upper iconographic register of the Nile Mosaic depicted a wild landscape reminiscent of the rocky desert of Lower Nubia, filled with representations of many different animals, some of which were equipped with identifying inscriptions composed in Greek. These Greek inscriptions provide a clear point of contact with the frieze at Marisa, and this similarity is underscored by the animals that were represented in *both* compositions: the lion, the snake, the giraffe, the warthog, the rhinoceros, the elephant, the crocodile, the ibis, the hippopotamus, the onager and the lynx.[289] The fact that these species were represented in a Nubian landscape in the Nile Mosaic at Praeneste was not coincidental, since many of them were indigenous to Africa during antiquity, and would not have been found in the Levant. How then did they come to be represented in a tomb in Palestine? One possibility is that the artists responsible for the frieze relied on artistic prototypes that originated in a cultural milieu where these exotic African animals were well known. In light of the close connections that we have sketched between Marisa and Alexandria during the third century B.C., and the historically attested interest in extraordinary animals in Ptolemaic Alexandria, it seems probable that these prototypes would have originated in – or in an environment closely connected to – the Ptolemaic royal capital.

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[287] Daszewski 1985, 105-110.

[288] As early as 1905, it was recognised that the upper register of the Nile Mosaic provides the most compelling iconographic parallel: see Cook 1905, xv-xvi.

[289] In the case of the lynx, it is interesting to note that the unusual spelling ΛΥΝΞ, rather than the more usual ΛΥΓΞ, occurs in both the Marisa frieze and the Nile Mosaic.

The case for an Alexandrian connection is therefore compelling, but it is important to note that some of the animals represented in the frieze may have had a local frame of reference, since several of them *were* found in the Levant during antiquity: the lion, the boar, the onager, the porcupine, the lynx, and the bull. According to one view, these Levantine fauna were consciously juxtaposed with creatures from the African interior, resulting in a sequence of animals that was defined, to some extent, by its internal geographical diversity.[290] This is certainly possible, but it is important to note that virtually all of these "Levantine" animals are also known to have inhabited Africa during antiquity,[291] making it very difficult to determine whether the depictions of these creatures were based on the artists' own knowledge of local wildlife, or, like the Aethiopian animals, on artistic prototypes imported from Alexandria. The fact that these animals were equipped with identifying labels in the manner of their Aethiopian counterparts speaks in favour of the second view, especially when we consider that there was no discernable difference in the level of accuracy with which they were represented. In either case, the decision to represent animals that were found in the Levant may have had a particular resonance in this Idumaean context, and so constitutes a further example of the complex interaction of external influences and local realities in the conception of the tomb.

It remains to determine how the fantastical creatures represented in the animal frieze fit into this picture. The griffin (Fig. 17) was the exotic animal *par excellence* in the ancient world, and was commonly employed to evoke farthest limits of the *oikoumenē* in contemporary art and thought. Most ancient writers seem to have associated this creature with the Far East, whether India or Skythia, but an alternative tradition located it in Aethiopia.[292] At first sight

[290] Jacobson 2007, 44.
[291] Erlich 2009, 82-85; Versluys 2010, 584-585.
[292] Meyboom 1995, 283-284 n. 12; Pajón Leyra 2012a, 354-356.

this lack of consistency seems strange, but it is entirely comprehensible in historical terms. As Pierre Schneider has shown, real and fantastical animals were often associated with both India *and* Aethiopia during antiquity, thanks to a widespread way of thinking that led to confusions and conflations between these regions by virtue of their positions on the outermost fringes of the known world.[293] The griffins represented in the Marisa frieze and the Shatby mosaic were surely conceived in these terms: as archetypal evocations of exotica that were intended to recall the outermost limits of *oikoumenē*, be they to the East or to the South.

The two fantastical fish at the eastern end of the northern frieze (Fig. 19) are more difficult to assess, since they have no clear parallels in the artistic record. In their initial publication of the tomb, the excavators pointed out that certain physiognomic features of these fish recall the elephant and rhinoceros facing them at the eastern extremity of the southern frieze, and suggested that they embodied "a pseudo-scientific theory of the universe, whereby there are corresponding creatures and existences in the separate realms of land and sea".[294] Strong support for this theory is supplied by a series of similarly fantastical fish depicted on the *verso* of the Artemidoros Papyrus, several of which were equipped with identifying labels alluding to the name a of particular land animal, and represented with some of the defining physiognomic features of the creature in question.[295] The best examples are provided by the "hare-fish" labelled "λαγω[ό]c" (Figs. 104, 105),[296] the "falcon-fish" labelled "ἱέραξ" (Figs. 106, 107),[297] and the "bull-fish" labelled "ταῦροc" (Figs. 108, 109), all of which will be analysed in greater detail in Chapter Five.[298] Viewed in this light, it seems very possible that the two Marisan creatures were, in fact, an "elephant-fish" and a "rhinoceros-fish", and that

[293] Schneider 2004, *passim*.
[294] Peters and Thiersch 1905, 95; cf. Avi-Yonah 1993, 790.
[295] Mielsch 2009, 367.
[296] Galazzi, Settis and Kramer 2008, 339-340.
[297] Ibid, 358-360.
[298] Ibid, 378-380.

they were conceptualised as Aethiopian animals in the manner of their terrestrial counterparts.

This leaves only the creature at the western end of the northern frieze, which, as we have noted, combined a bearded human face with a lion-like body and tail (Fig. 23). The lack of consensus concerning the identity of this creature makes its geographical contextualisation extremely difficult. According to one view, it was, in fact, just a standard lion, and could be associated with Africa and/or the Levant in the manner of the other creatures represented in the frieze.[299] In reality, however, the anthropomorphic features of the creature's face are sufficiently pronounced to render this reading questionable, and it seems much more probable that it represented a mythological or fantastical animal of some description. Two such identifications have been proposed. Of these, the theory that the painted creature represented the mythical Assyrian *lamassu* can be ruled out on the grounds that this creature is reported to have had eagle's wings, no traces of which are to be found at Marisa.[300] Much more promising is the view that the creature represented the *mantichore*,[301] a ferocious creature described by the late-fifth century B.C. author Ktesias, which, we are told, had both a lion's body and a human face.[302] On a purely physiognomic level, the identification of the creature as a *mantichore* is convincing, but a degree of caution is urged by the fact that it is very difficult to reconcile this interpretation with the remains of the accompanying identifying label. According to one of the excavators:

> "The first and last letters appear to be plain, H and C, and between these there seems to be room for three average letters, which might mean also two or four according to the letters and the way they were written."[303]

[299] Meyboom 1995, 285 n. 19.
[300] Jacobson 2007, 35.
[301] Cook 1905, xii-xv; Jacobson 2007, 35.
[302] Ktesias *apud* Arist., *Hist. an.,* 501a 26 – 501b 1; Paus., IX 21, 4-5; Ael., *NA.*, IV 21.
[303] Peters and Thiersch 1905, 95.

The differences between our two surviving versions of the inscription – in a photograph taken shortly after the discovery of the tomb (Fig. 32), and in the coloured lithograph produced subsequently – make it difficult to gage the full significance of this description. Specifically, it is unclear whether the reference to the "last letter" of the inscription pertains to the large lunate sigma which is clearly visible in the lithograph but very difficult to make out in the photograph, or to the smaller lunate sigma-shaped character that appears in the photograph but which is barely legible in the lithograph. The latter, it should be pointed out, is substantially smaller than the eta at the beginning of the inscription, and has at least one short line projecting from the curve of its C, suggesting that it may not have been a sigma at all, but rather a part of a more calligraphically complex letter, henceforth referred to as "[C]". In either case, the letter sequence "H- - -[C][C][…]" is difficult to reconcile with the identification of the creature as a *mantichore*. The proposal that the 'H' is a misreading for the 'TI' of MAPTIXΩPAC finds little support in the photograph,[304] and the alternative suggestion that the inscription originally read ΠΑΝΘΗΡΟC fits poorly with the appearance of the creature.[305]

It is possible, I think, to offer a new, tentative interpretation of the animal, based partly on its accompanying label, and partly on its physiognomy. With respect to its physiognomy, there are striking visual correspondences between the Marisan creature and one of the animals depicted in the Nile Mosaic at Praeneste, which has a human-like head with long, flowing hair, and the body of an ass, designated by its accompanying inscription as an HONOKENTAYPA: that is, a female *onokentauros*, or "ass-centaur" (Figs. 57, 59). The body of this animal is virtually identical to that of our Marisan creature, the only difference being that it clearly has hooves rather than the paws seen in the coloured lithograph depicting the

[304] Suggested by Jacobson 2007, 35.
[305] Suggested by Meyboom 1995, 285 n. 19.

latter. We should note, however, that these paws are almost impossible to make out in the original photograph, and it is plausible that they were erroneously restored on the assumption that the creature's body was like that of a lion. In any case, the tail of the Marisan creature does not droop like that of the lion in the southern frieze, but is erect like that of the *onokentaura* on the Nile Mosaic, and its long, pointed ears seem closer to those of an ass than those of a lion. Conceivably, then, the body of the creature was not that of a lion at all, but rather that of an ass like the *onokentaura* in the Nile Mosaic, in which case it may have been intended to represent a male "ass-centaur", or *onokentauros*. It is in this light that we should return to the accompanying painted inscription, which, as we have seen, read "H- - - [C][C][…]". Might this be restored as "HONOKENTAYPOC"? Certainly, the eta at the beginning of the inscription suits this reading, and the sigma-like [C] visible in the original photograph might easily have been part of an omicron or kappa, in which case the large lunate sigma would represent part of a kappa or epsilon.

From a geographical perspective, it is clear that the *onokentauros* was conceptualised as an Aethiopian creature during antiquity,[306] while the *mantichore* was commonly associated with India. Whatever its identity, then, the creature clearly evoked the outermost limits of the *oikoumenē*, in much the same way as the griffin depicted on the southern frieze.

Viewed in its entirety, therefore, the painted frieze of the Tomb of Apollophanes consisted of a series of quintessentially Aethiopian animals, juxtaposed with several creatures that were indigenous to both Africa and the Levant, and a small number of fantastical animals that were commonly associated with the fringes of the known world. The presence of the Aethiopian animals strongly suggests that some of the artistic prototypes used in the design of this frieze originated in Ptolemaic Alexandria or a related environment, and there is no reason to doubt

[306] Ael., *NA.*, VII 9.

that the representations of the other animals originated in the same cultural milieu. Accordingly, the painted animal frieze sheds important new light on the close relationship that Marisa enjoyed with the Ptolemaic royal capital during the mid-third century B.C.: "a radiation of the thoughts and interests centred at that time in Alexandria, an unexpected reflection in the provinces which illuminates the culture of the capital from a new side".[307]

VIII. Explaining the Animal Frieze

The question of precisely why the animal frieze was considered apposite *in a funerary context* in Hellenistic Idumaea remains to be discussed. Evidently the patron responsible for commissioning the painting took a conscious decision to co-opt Alexandrian imagery in his tomb, but his reasons for dong so are difficult to pin down. One of the excavators romantically suggested that this man may have been a professional "collector of animals for the royal shows at Antioch", and that the decoration of Chamber D was inspired by his profession.[308] Unfortunately this theory falls down on several fronts, not only its reliance on an erroneous chronology and an invented Seleukid context, but also thanks to elements of the iconography itself, most notably the casual juxtaposition of real and mythological animals.

An alternative hypothesis was advanced by David Jacobson in his recent monograph on Tombs I and II, according to which the animal frieze was intended to evoke the famous parade of animals in the Grand Procession of Ptolemy II Philadelphos.[309] Crucially, for Jacobson, the animal parade formed part of the section of the Procession devoted to Dionysos, one of the divine progenitors of the Ptolemaic line, and for this reason he proposes that the animals of the frieze were included by virtue of their conceptual ties with

[307] Peters and Thiersch 1905, 91.
[308] Peters and Thiersch 1905, 95.
[309] Jacobson 2007, 46-49.

this divinity. Support for this Dionysian connection he finds in the *thymiateria* and *amphorae* depicted in Chamber D, precious metal versions of which were likewise paraded in the Dionysian section of Philadelphos' Procession. For Jacobson, this collection of images was not simply intended as a visualisation of Philadelphos' parade, but referred more specifically to Dionysos' chthonic aspect, "offering the promise of the afterlife to the interred".[310] The animal frieze was therefore included for its symbolic significance, and alluded to the afterlife in a manner akin to the Kerberos depicted on the inner face of the right doorjamb at the entrance to the chamber.

Generally speaking, Jacobson's theory has been poorly received, and with good reason.[311] From a methodological perspective, it falls into the trap of interpreting the decorative motifs as visual metaphors which carried implicit meanings that were independent of their iconography. As we have already seen, the grounds for such readings are rarely compelling, and a more profitable approach is to consider the motifs at face value, and to ask why they may have been considered useful or desirable in such a funerary context. More specifically, the concept of a Dionysian decorative programme is difficult to substantiate owing to the complete absence of overtly Dionysian images, let alone images which expressly referred to the god's chthonic or funerary aspect. After all, we have already seen that both the *thymiateria* and the *amphorae* represented in the tomb are comprehensible in their own terms, and do not need to be connected to any such overarching decorative programme. In the case of the animal frieze, meanwhile, the presence of identifying labels imparted a scientific dimension which surely grounded the individual creatures in the world of the living, rather than the chthonic realm of the deceased.

[310] Jacobson 2007, 48.
[311] See, for example, Kloner 2008, 177-178; Mielsch 2009, 367-368; Versluys 2010, 584-585.

In light of these observations, it is tempting to dispense with Jacobson's arguments altogether, but his theory that the animal frieze was intended to recall the parade of animals in the Grand Procession of Ptolemy II Philadelphos is one that deserves serious consideration, for two principal reasons. Firstly, and most obviously, a considerable number of the animals that were depicted in the frieze are known from Kallixeinos' account to have been paraded in the Grand Procession: namely the leopard, the bull, the giraffe, the oryx, the rhinoceroses, the elephant, the onager and the lynx.[312] Secondly, and more importantly, however, the paratactic, sequential arrangement the animals in the frieze is one that seems fundamentally parade-like in conception. Reading the frieze as a procession accounts for the complete absence of narrative in the composition, and accords well with the connections that we have sketched between the iconography of the composition and the cultural and artistic currents of contemporary Alexandria. From a historical perspective, meanwhile, there can be little doubt that news of Philadelphos' spectacular Procession must have spread far and wide in the aftermath of the event itself, and given Marisa's close ties with Alexandria during the third century B.C., there is no reason to doubt that the patron of the tomb would have heard all about the king's astonishing display of animals from the distant corners of the known world.

If we entertain the notion that the animal frieze of the Tomb of Apollophanes was conceived as a comparable "display", it becomes possible to forward some hypotheses about the significance of the composition. In all likelihood, the decision to represent a selection of animals in a parade-like format constituted a conscious evocation of the latest mode of celebrating power and extravagance in Ptolemaic Alexandria. In other words, the frieze both alluded to and was modelled on Ptolemy II's display of animals, and constituted an iconographic reaction to this remarkable event in an aristocratic provincial context. For the deceased, this choice of theme was presumably conditioned by a desire to celebrate *his own*

[312] Ath., *Deipnosoph.*, V 200e-201c; cf. Erlich 2009, 77-80.

power and extravagance in a manner commensurate with the extraordinary size of his tomb and the rest of its painted and sculptural decoration. Far from alluding to the promise of a blessed afterlife, therefore, the painted frieze of the Tomb of Apollophanes was conceived as a marker of elevated status and connectedness to the royal centre, embodying the "cultural competence"[313] and the privileged socio-political standing of those interred within.

A remarkable papyrus from the Zenon archive confirms that the foremost men in the Levant were indeed attuned to the royal taste for importing exotic creatures into Alexandria during the reign of Ptolemy II Philadelphos. The document records a gift made to Philadelphos in 257 B.C. by Toubias, a wealthy clan-leader in Transjordan and brother-in-law of the High Priest of Jerusalem:

> "To King Ptolemy from Toubias, greetings. I have sent you two horses, six dogs, one mule bred from an ass, two white Arab donkeys, two wild mules' foals, and one wild ass's foal. Farewell."[314]

Whether or not the family of Apollophanes also sent animals to the Ptolemaic king is impossible to say. But in a political landscape where sending extraordinary animals to Alexandria was one way in which powerful men might demonstrate their loyalty to the ruling power, it is unsurprising that a painted frieze depicting such animals was considered appropriate for the decoration of the tomb of a local aristocrat. Here it constituted a royally sanctified status symbol that was perfectly suited to a decorative programme designed to celebrate the life of the deceased.

IX. Conclusion

[313] Versluys 2010, 585.
[314] P.Cair.Zen. 1 59075; cf. Bagnall and Derow 2004, no. 65.

The painted frieze of the Tomb of Apollophanes demonstrates beyond all reasonable doubt that the practice of depicting exotic animals accompanied by identifying labels in Greek originated during the third century B.C., a time when Ptolemaic royal agents had begun to encounter exotic animals in the territories south of Egypt and to import them into Alexandria. Both the Aethiopian elements of the iconography and the close connections that can be traced between Marisa and Alexandria at this time suggest that the origins of the frieze should be sought in the visual culture of Ptolemaic Alexandria.

Of course, the realisation that the practice of depicting animals with identifying labels originated in third century B.C. Alexandria reveals nothing of *how* these representations came into being in the first place, and *why* they were considered to be effective and useful. These questions lie at heart of the following chapter, which focuses on the Nile Mosaic at Praeneste. As we shall see, there are good reasons to believe that the identifying labels were taxonomic in conception, and that they were conditioned by a *scientific* interest in the natural world that flourished in third century B.C. Alexandria.

Chapter Three:

The Nile Mosaic at Praeneste:
Taxonomic Natural Science in Hellenistic Alexandria

I. Prelude

In this chapter we turn to the Nile Mosaic at Praeneste, a work of art lying at the heart of several of the central ideas presented in this thesis (Fig. 33). Like the painted frieze of the Tomb of Apollophanes, this mosaic incorporated representations of Aethiopian animals accompanied by identifying labels composed in Greek. Many features of the composition have been debated and re-debated in recent times, not least its date, the original configuration of its iconography, and the function of the building in which it was originally laid.[315] These issues are of considerable importance, but will be addressed only briefly in the following chapter. Instead, the discussion focuses on the iconography of the Nile Mosaic, and what it reveals about the character and scope of natural science in the Hellenistic world.

The chapter begins with a brief account of the architectural context of the Nile Mosaic and its turbulent history since the early-seventeenth century A.D., which is intended to fasten attention on the difficulties involved in assessing the iconography of this remarkable composition. The discussion will then turn to two aspects of the iconography that are crucial to the interpretation of mosaic proposed at a later stage. Firstly, the topographical dimension of the mosaic is explored, facilitating the conclusion that its iconography constitutes a visualisation of the entire course of the River Nile, stemming from its source in Aethiopia, winding through Egypt, and ending at its mouth in the Delta. Secondly, several elements of the iconography are highlighted that demonstrate that the design of the composition should be dated to the third century B.C., and that it was therefore a later version of a pre-existing work of art, presumably from Ptolemaic Alexandria. This third century B.C. context provides

[315] For the very best summary of the existing scholarship on the mosaic, and some useful new insights, see Hinterhöller 2009.

a platform for discussing the significance of the iconography of the composition, which, it is argued, alludes to the aftermath of a successful Ptolemaic military campaign in Aethiopia.

The second half of the chapter focuses on the Aethiopian animals accompanied by identifying labels in its upper iconographic register. A comparison between these identifying labels and other instances of labelling in Greek art will suggest that they were fundamentally taxonomic in nature, and that they testify to a concern with the classification of animals that resonates with the general trajectory of Alexandrian intellectualism described in Chapter One of this thesis. An analysis of the iconography of these animal representations will then demonstrate that they were formulated in the context of sporadic interaction with these creatures in the wild, and in the same cultural milieu as the zoological descriptions of Aethiopian fauna composed by the second century B.C. author Agatharchides of Knidos. The chapter concludes with a consideration of the role played by these animals – and by the gemstones depicted in the rocky Nubian landscape that they inhabit – within the iconography of the composition as a whole.

II. Architectural Context and Post-Medieval History

The Nile Mosaic of Praeneste was originally laid in the Lower Complex of the ancient town. This building, *c.* 90 m wide, consisted of a basilica-like structure divided into four aisles by rows of columns, flanked by an apsidal hall to the East, and by a courtyard-like space to the West (Figs. 34, 35).[316] It bordered the forum of the town on its northern side.[317] Within this architectural ensemble, the Nile Mosaic decorated the floor of an artificial grotto shaped like an apse, which was accessed through the rear wall of the eastern apsidal hall (Fig. 36). This

[316] For the Lower Complex at Praeneste, see Delbrück 1907, 47 -51; Fasolo and Gullini 1953, 17-51; Lauter 1979, 437-457; Riemann 1986, 357-404; Krumme 1990, 155-165.
[317] Meyboom 1995, 8.

grotto was *c.* 10.00 m high, and its vaulted ceiling was decorated with imitation rock made of pumice, lending it a cave-like appearance.[318] The floor of the grotto was roughly semi-circular in shape, *c.* 6.87 m wide and *c.* 4.35 m deep, but with three quadrangular protrusions interrupting the arc of the semi-circle, one aligned on the central vertical axis of the apse, and the other two disposed symmetrically to either side.[319] The entire floor was covered by the mosaic, which was laid *in situ* in stunning *opus vermiculatum*. The composition would originally have been submerged beneath a thin layer of water, which entered by seeping through the porous walls of the grotto.[320] This feature no doubt enhanced the vivid polychromy of the composition, and prevented it from being walked on. Another mosaic, depicting a selection of realistic-looking fish, decorated the floor of a similar grotto at the back of the courtyard-like space positioned to the west of the basilica, and is discussed in considerable detail in Chapter Five.

For many years, the Lower Complex was believed to be the famous sanctuary of Fortuna Primigenia at Praeneste, and the Nile Mosaic was identified as the *lithostroton* pavement, which, according to Pliny the Elder, was laid in the sanctuary by Sulla after he had sacked the town in retribution for its support of the Younger Marius in 82 B.C.[321] This reading of the evidence was cast into serious doubt by the Allied bombardments of Palestrina in 1944, which resulted in the discovery of a second, larger architectural complex positioned further up the slope of the town, the so-called Upper Complex, which has since been identified as the sanctuary of Fortuna.[322] As a result, many scholars have dispensed with a religious reading of

[318] Meyboom 1995, 8; Hinterhöller 2009, 20.
[319] Hinterhöller 2009, 20.
[320] Meyboom 1995, 8; Hinterhöller 2009, 20.
[321] Plin., *HN* XXXVI 64, 189. For the theory that the complex was either a precursor or Sullan addition to the famous sanctuary of Fortuna, see Delbrück 1907, 47-51; Fasolo and Gullini 1953, 49, 301-324; Riemann 1986, 357-404. For the theory that it was, in fact, a sanctuary of Isis, see Marucchi 1907, 293; Coarelli 1987, 79-82; *Id.* 1994, 124-129; Lavagne 1988, 228-256; Krumme 1990, 155-165; Stewart 2014, 227.
[322] Meyboom 1995, 10-11.

the Lower Complex altogether, and have instead identified it as a public building.[323] Strong evidence for this theory is supplied by the architecture of the complex, which finds its closest parallels in secular rather than sacred buildings, such as the curia, basilica and comitium flanking the south side of the forum at Pompeii.[324] Further support is supplied by the complex's proximity to the forum, and by an inscription revealing that the *aerarium* (treasury) of the ancient town was located in the basement of the apsidal hall.[325] In such a context, the two cave-like grottos lying behind the apsidal hall and courtyard-like space were probably *nymphaea*, sacred spaces dedicated to the nymphs, which were often incorporated into public buildings during the Hellenistic period, and decorated with imitation rocks, mosaics and statues.[326]

The realisation that the Lower Complex was not the sanctuary of Fortuna has also precipitated a re-assessment of the chronology of the building. Importantly, many of the surviving architectural elements of the complex find close parallels in the aforementioned Upper Complex of the ancient town, which has been accurately dated to *c.* 110 B.C. on the basis of architectural and epigraphical evidence.[327] For instance, the *opus incertum* used in the Lower Complex was "more or less identical" to that used in the Upper Complex, and both complexes contained distinctive Graeco-Corinthian capitals of a very similar kind.[328] In light of these correspondences, a date in the final quarter of the second century B.C. seems most likely. According to one school of thought, the spatial relationship between the two complexes implies that the Lower was constructed *before* the Upper, suggesting that it should be dated to *c.* 125 – 120 B.C.[329] Of course, it does not necessarily follow that the Nile Mosaic

[323] Vaglieri 1907, 291-295; *Id.* 1909, 233-241; Coarelli 1989, 118; Meyboom 1995, 8-16; Tammisto 2005, 7.
[324] Meyboom 1995, 12-13.
[325] Delbrück 1907, 57-58; Gullini 1984, 532; Coarelli 1987, 40.
[326] Meyboom 1995, 13.
[327] Fasolo and Gullini 1953, 301-338; Degrassi 1969, 111-127; Coarelli 1987, 62ff; Meyboom 1995, 10-11.
[328] Meyboom 1995, 14.
[329] Ibid, 14-15.

was laid in the Lower Complex at the time of its construction, and it is presumably for this reason that the composition has variously been attributed to Sullan,[330] Caesarean-Augustan,[331] Tiberian,[332] Flavian[333] and even Hadrianic[334] times. Still, there is nothing in the iconography, style or technique of the composition to suggest that it could not have been laid in the late-second century B.C.[335]

In any case, the Nile Mosaic remained *in situ* until Andrea Peretti, the archbishop of Palestrina, arranged for it to be removed in pieces between A.D. 1624 and 1626.[336] The pieces were taken to Rome, where they were presented to Cardinal Francesco Barberini. Between 1628 and 1630, Cassiano dal Pozzo commissioned a series of watercolour copies of the mosaic for his Museum Chartaceum, each of which re-produced one of the removed pieces (Fig. 37). The value of these 'dal Pozzo copies' was soon realised when in 1640 the pieces were returned to the fief of Palestrina, which had been purchased by the Barberini in 1629. During transit, the boxes containing the pieces were loaded upside-down, with the result that a significant proportion of the *tesserae* fell from their original bedding.[337] Giovanni Battista Calandra, the head of the mosaic works of St Peter's, travelled to Palestrina and was able to repair them using the dal Pozzo copies.[338] Remarkably, Calandra also re-integrated the pieces into a single composition, and installed it in an apse at the back of the entrance hall of the Palazzo Barberini, perhaps incorporating fragments that had remained *in situ* during the

330 Tammisto 2005, 6; Coarelli 1990, 237; Moffitt 1997, 229, 232; Gullini 1956, 9-12; Pollitt 1986, 205.
331 Walker (2001, 334-336; *Id.* 2003, 91-202) and Weill-Gouchaux (2001, 332-334) date the mosaic to the mid-first century B.C. owing to a belief that it was commissioned by – and depicted – Kleopatra VII. Schjrivers (2007, 223-229) the period following the 20s B.C. to support his theory that it was commissioned to commemorate the triumph of one Marcus Valerius Messalla Corvinus.
332 Parlasca 1994, 44.
333 Ericsson 1984, 60.
334 Panayides 1994, 44-46.
335 Hinterhöller 2009, 37.
336 My description of the post-medieval history of the mosaic is founded on the accounts of Meyboom (1995, 3-4, 191-198 ns. 1-15) and Whitehouse (1976, 1-10; 2001, 71-87).
337 Hinterhöller 2009, 18.
338 Calandra had already undertaken some initial restoration work in Rome.

original removal.[339] The mosaic underwent further restorations in Rome between 1853 and 1855, and was taken to the Eternal City once again in 1943, this time to protect it from the Allied bombardments of the Second World War. Today it is displayed on the upper floor of the Museo Archeologico Nazionale Prenestino, the old Palazzo Barberini.

It is thanks to this turbulent post-medieval history that today's Nile Mosaic is different from the one that was originally laid during antiquity. In its present state, the mosaic combines authentic original fragments, parts restored in 1640 and 1853-1855, and parts that were newly made to connect the individual sections during Calandra's restoration of 1640.[340] Thankfully, we have a rough idea of the balance of these elements thanks to studies undertaken in 1952, when the tufa backing of the mosaic was removed and the reverse sides of the *tesserae* were exposed. This process allowed Giorgio Gullini and Salvatore Aurigemma to distinguish between the original and restored portions of the composition by recording variations in the size and/or colour of the *tesserae*, and the type of cement used to fix them.[341] Although their results did not entirely correspond, Gullini and Aurigemma both concluded that approximately half of the modern mosaic is the work of restorers (Fig. 38). At first sight this percentage seems worryingly high, and begs the question how far the restored portions of the mosaic accurately re-produce the original composition. Fortunately, Helen Whitehouse's re-discovery of the original dal Pozzo copies in the Royal Library of Windsor Castle has permitted this question to be answered in some detail.[342] Generally speaking, the restored parts of the mosaic are faithful to the original composition, albeit with the loss of some of its more intricate detail.[343]

339 Meyboom 1995, 196 n. 10.
340 Ibid, 4.
341 Gullini 1956, 15 pls. XIII, XIV, XVI-XVII; Aurigemma 1959, 50 Figs. 4-52.
342 Whitehouse 1976, *passim*.; *Id.* 2001, 71-131.
343 Andreae 2003, 84.

It is more difficult to assess how far the composition as a whole reproduces the original mosaic in terms of the relative arrangement of the individual sections, since no overall plan of composition seems to have been made prior to its removal from the Lower Complex in the seventeenth century.[344] It is also clear that the dimensions of the mosaic have changed, since its current measurements (5.85 m wide at the base, 4.31 m deep) are smaller than those of the floor of the grotto-apse in which it was originally laid.[345] This change in size was also accompanied by a change in shape, judging by the loss of the three rectangular projections that originally interrupted the arc of its semi-circle.

III. Re-constructing the Topography of the Nile Mosaic

Despite these difficulties, the basic arrangement of the original iconography of the Nile Mosaic is relatively assured. The mosaic was divided into two distinct vertical registers,[346] differentiated by the types of landscape that they depicted, and by the people, fauna, flora and buildings that populated them.

The lower register clearly represents Egypt during the annual inundation of the River Nile.[347] It is composed of a series of self-contained scenes set within in a body of floodwater in such a way that they resemble independent floating islands.[348] Viewed together, these scenes constitute a panorama of the different groups of people who inhabited Hellenistic Egypt, the variety of activities that they engaged in, the selection of boats that they sailed,[349] and the

344 Meyboom 1995, 4.
345 Meyboom 1995, 4; Andreae 2003, 79, 90-92; Hinterhöller 2009, 19.
346 This is clear from the dal Pozzo copies of sections of the original mosaic (for instance, sections 9, 10 and 11) in which these two registers are superimposed, one above the other.
347 For the lower register see Meyboom 1995, 28-41; Hinterhöller 2009, 51-52.
348 These 'islands' resonate with Diodorus Siculus' description of the Nile inundation (I 36, 7-8): "since the land is a level plain, while the cities and villages, as well as the farm-houses, lie on artificial mounds, the scene comes to resemble the Cyclades Islands."
349 For an excellent account of these boats, see Friedman 2006, 115-145.

range of buildings that they built and frequented. We see Greeks engaged in a hippopotamus hunt on the river (Fig. 39), farmers and fishermen in the midst of their everyday activities, a group of soldiers performing a ritual libation, peasants collecting lotuses in papyrus canoes, Egyptian priests leading a solemn religious procession, and a group of garlanded symposiasts enjoying the finest food and drink that the land of the Nile had to offer (Fig. 40). These activities take place against an architectural backdrop of Greek-style sanctuaries and pavilions, a native Egyptian temple complex, farms, reed-huts, tower houses, and a lavish *pergola*.

In contrast, the upper register of the composition (Figs. 51-71) contains no buildings whatsoever.[350] Instead, it depicts a wild landscape filled with granite rocks, sandstone hilltops, and sandy plains, which is reminiscent of the rocky desert of Lower Nubia: that is, the area stretching from the first cataract of the Nile into Northern Sudan.[351] This landscape is filled with no fewer than forty-six animals of thirty-six different species,[352] some twenty of which are equipped with identifying inscriptions composed in Greek. Most of the represented species were indigenous to Upper Nubia and Aethiopia during antiquity: that is, the savannah country covering most of Sudan, Eritrea and Northern Ethiopia.[353] The animals are pursued by groups of black hunters, who are armed with oval shields and bows, and clothed in rustic *exomides*. Together these elements constitute a "synoptic and symbolic representation" of the lands south of Egypt.[354]

Viewed in tandem, therefore, the two registers have a pronounced geographical dimension, depicting Egypt and its adjacent territories in northwest Africa. If we follow the rough arrangement of the individual sections demanded by the surviving evidence (Fig. 41),

[350] For the upper register see Meyboom 1995, 20-27; Hinterhöller 2009, 52-54.
[351] Meyboom 1995, 43-44.
[352] Hinterhöller 2009, 52.
[353] Meyboom 1995, 48-49.
[354] Meyboom 1995, 50.

however, it becomes possible to trace a further topographical division between the lower and upper halves of the lower register.[355] Generally speaking, the lower half of the register is dominated by "Hellenistic" buildings, including the pavilion-shrine of section 13, the tetrastyle propylon of section 16, and the pergola of section 19, while the upper half is filled with buildings that can be associated with the Egyptian *chora*, most notably the Egyptian temple complex in section 11 (Figs. 60, 61), but also the towers, fortified villas and farms of sections 9 and 10, and the temple with a Nilometer and obelisks in section 8. The dichotomy is not exact, given that at least one Egyptian-style building – either the reed hut of section 15, or the farmhouse of section 17 – was originally positioned in the bottom half of the lower register,[356] but the evidence is sufficient to suggest an internal division according to which the lower half of the register represented the Hellenised Delta and the upper half represented Middle and Upper Egypt and the lands adjacent to Aethiopia.

For some scholars, this bi-partite division of the lower register of the mosaic provides a framework for identifying specific buildings and sites in its individual vignettes.[357] Assessing the plausibility of these topographic identifications is a complicated task, predominantly because of the lack of direct correspondence between the buildings depicted in the Nile Mosaic and the archaeological remains surviving from ancient Egypt. On the one hand, this lack of correspondence should not exclude the possibility that the artist(s) responsible for the composition modelled the vignettes on specific sites and buildings, given that much of Hellenistic Egypt has been lost to archaeologists.[358] On the other, there is a real danger of falling into the trap of associating the vignettes with specific sites in order to create a neat topographical framework that is not corroborated by the visual material itself. Two

[355] Hinterhöller 2009, 51-52; Stewart 2014, 232.
[356] The relative positions of these sections remain unclear: compare the reconstructions of Whitehouse (1976, 70-76), Andreae (2002a, 24-25; 2003, 92-102) and Tammisto (2005, 14-16, 18 Fig. 10).
[357] See, for example, Steinmeyer-Schareika 1978, 52-97; Pollitt 1986, 207; Coarelli 1990, 238-244; Ling 1991, 7-8, 11; Meyboom 1995, 50-79; Hinterhöller 2009, 56-67.
[358] Hinterhöller 2009, 99-100.

methodological considerations necessarily follow. Firstly, topographical identifications should be evaluated on a case-by-case basis, regardless of whether they form part of wholesale interpretations of the iconography of the composition. Secondly, the burden of proof necessarily lies with those proposing specific identifications. In other words, unless a *convincing* topographic identification can be proposed on the basis of specific iconographic features, a generic interpretation remains preferable.[359]

With this in mind, it is difficult to associate the majority of scenes in the mosaic with specific sites in Hellenistic Egypt, even if we accept the likelihood that the artist(s) drew on their general experiences of real life buildings and places when formulating their designs.[360] A possible exception is provided by the "pavilion scene" of sections 13 and 14, which centres on a group of soldiers and a solitary female figure gathered in front of a tetraprostyle pavilion-shrine (Figs. 42, 43, 44).[361] This pavilion-shrine cannot be associated with any structure surviving in the archaeological record, but several accompanying details suggest that the scene *may* be taking place in Alexandria. The most significant is the large red parasol with a yellow tasselled fringe represented in section 14, which was not incorporated into Calandra's re-construction of 1640, and which is known only from the corresponding dal Pozzo watercolour (Fig. 45). Such parasols were frequently employed as attributes of kings and queens or as symbols of royal power in ancient art, suggesting that the Ptolemaic ruling couple may have been shown standing beneath the example in the mosaic.[362] Support for this reading is supplied by the original position of section 14, since the king and queen would have been located in the very centre of the foreground of the composition, a position commensurate with their pre-eminent socio-political status in Hellenistic Egypt. If they were

[359] Generic interpretations are favoured by Boëthius and Ward-Perkins 1970, 461; Meyboom 1977, 76-77; Parlasca 1994, 44; Rouveret 2004, 334; Siebert 1999, 253; Traunecker 2000, 151; Tammisto 1995, 20.
[360] Tammisto 2005, 20.
[361] For sections 13 and 14, see Meyboom 1995, 34-37.
[362] Meyboom 1995, 64-70; cf. Whitehouse 2001, 114-115.

indeed represented, it would be natural to show them in Alexandria, which was, after all, their centre of power and influence, and the site of their famous palace.[363] A degree of support is offered by the long quay attached to the pavilion, which may have been intended to evoke either the royal port of the Lochias peninsula[364] or the Hepastadion causeway connecting the island of Pharos with the mainland.[365]

In any case, the topographic dimension of the composition fits neatly with what we know about the development of landscape representation in Hellenistic art.[366] In particular, it calls to mind Diodorus Siculus' testimony concerning an Alexandrian artist named Demetrios, who is said to have hosted Ptolemy VI Philometor in Rome in *c.* 165 B.C., and who was apparently a painter of *topographia*, a pictorial genre concerned with the detailed representation of landscapes.[367] Whether or not the Nile Mosaic itself constitutes an example of *topographia* is difficult to say, since the exact definition of this genre in relation to *chorographia*, another ancient mode of painting concerned with the representation of landscapes, remains largely unknown.[368]

IV. Ptolemaic Iconography

Within this topographical framework, a series of "persuasively Ptolemaic items"[369] confirm that the iconography of the composition should be dated to the Hellenistic period. The clothing, armour and weapons of the group of soldiers shown gathering in front of the

363 For the palace see Nielsen 1999, 130-133.
364 Steinmeyer-Schareika 1978, 80-82; Coarelli 1990, 238-241, 244, 246-247; cf. Stewart 2014, 231.
365 Andreae 2003, 98; Hinterhöller 2009, 50-51, 65-66.
366 La Rocca 2008, 17-61.
367 Diod. Sic., XXXI 18, 2.
368 For the Nile Mosaic as *topographia* see Beyen 1960, 311; Meyboom 1995, 186-189; Hinterhöller 2009, 104. For the Nile Mosaic as *chorographia* see Moffitt 1997, 228, 233-237; Blanckenhagen, Alexander, Mertens and Faltermeier 1999, 44-45; Hinterhöller 2009, 104-105. La Rocca (2008, 17-20), meanwhile, sees the landscape as "un ibrido tra una carta corografica eseguita da un topographos e, almeno in alcuni settori, una carta della fauna locale".
369 Stewart 2014, 228.

pavilion-shrine in section 13 are particularly instructive in this respect, since they are all characteristically Hellenistic (Figs. 42, 43, 44).[370] One of the men even carries a shield decorated with a Macedonian starburst emblem, confirming that he and his compatriots should be understood as Ptolemaic soldiers.[371] The same conclusion applies to the trumpeter shown standing on the bow of the bireme in section 17 of the composition, who is known, thanks to the corresponding dal Pozzo copy, to have worn the typically Macedonian *kausia* (Figs. 46, 47).[372] The form of the bireme itself is no less significant, since its system of two rows of oars arranged *en echelon* and projecting through an outrigger oarbox is attested only from the late-fourth century B.C. to the late-second century B.C., characterising this as a "typical Hellenistic warship".[373] We should also mention the distinctive architectural elements of the buildings represented in the lower register of the composition, several of which find parallels in real architecture surviving from Hellenistic Alexandria. The segmental pediments of the pavilion-shrine depicted in section 13 (Figs. 42, 43) and the Greek-style temple depicted in section 8, for example, recall the segmental pediments that decorated a number of Alexandrian tombs built in the Hellenistic period, including Tomb II at Anfushi, Hypgeion II at Gabbari, and a tomb from Marsa Matrouh.[374]

It is more difficult to assign a specific date *within* the Hellenistic period to the iconography of the composition, but two considerations suggest that it may have been conceived during the third century B.C. Firstly, we saw in Chapter One that Ptolemaic activities in Aethiopia and the Red Sea hinterlands were concentrated in the third century B.C., and that the majority of evidence concerning the Alexandrian interest in the fauna of these regions also pertains to this time. Secondly, we saw in Chapter Two that the painted frieze of the Tomb of

370 Meyboom 1995, 36-37; Stewart 2014, 228.
371 Meyboom 1995, 270-271 n. 164.
372 Whitehouse 2001, 120-121.
373 Friedman 2006, 140-141.
374 McKenzie 2007, 93-94.

Apollophanes at Marisa contained a series of comparable representations of animals, and that this composition can be dated with some confidence to the mid-third century B.C.

Of course, the realisation that the late-second or early-first century B.C. Nile Mosaic contained iconography that should probably be associated with the third century B.C. introduces the idea that the composition represents a later version of one or more earlier work(s) of art, and that the artists responsible for its design utilised detailed prototypes. One theory holds that the mosaic accurately re-produced the iconography of a single work of art from Hellenistic Alexandria,[375] while a variant of this theory suggests that the composition actually re-produced the iconography of *two* Alexandrian works of art, each corresponding to one of its iconographic registers.[376] Other arguments hold that the design of the composition was formulated for the first time in Praeneste itself, using a selection of prototypes derived from a variety of different sources,[377] or indeed using an illustrated scroll documenting a "Tierfangexpedition" sent to Aethiopia by Ptolemy II.[378] Assessing the relative merits of these interpretations is a delicate task, but from a methodological perspective it seems dangerous to sub-divide the iconography of the composition into many parts with undue haste, since it only survives as a homogenous whole. As we shall, there are very good reasons to believe that *all* of the iconography should be traced back to a single work of art that originated in Ptolemaic Alexandria.

V. Interpreting the Nile Mosaic

375 Gullini 1956, 45-49; Tybout 1989, 340-341; Coarelli 1990, 225, 249; Dunbabin 1999, 51.
376 Meyboom 1995, 99-102.
377 Phillips 1968, 198-224; Ericsson 1984, 58; Panayides 1994, 37, 44; Leach 1998, 91-95; Martin 2005, 416; Hinterhöller 2009, 46-49.
378 Steinmeyer-Schareika 1978, 102-108.

The iconography of the Nile Mosaic has inspired a multitude of competing interpretations in recent times. Filippo Coarelli, for example, argued that the mosaic was conceived as a visualisation of the Grand Procession of Ptolemy II Philadelphos in Alexandria, and that it was intended to evoke Kallixeinos of Rhodes' description of this famous event.[379] This theory has rightly been challenged on the grounds that there is precious little in the iconography itself to suggest that any kind of procession is taking place, and to this we might add the criticism that the design encompasses the whole of Hellenistic Egypt, and not just the Ptolemaic royal capital. Angela Steinmeyer-Schareika, meanwhile, proposed a narrative interpretation of the composition according to which its lower register was modelled on an illustrated literary text that represented the series of sites visited during a royally sponsored animal hunting expedition to Aethiopia.[380] Again there are serious problems, not least the complete absence of Graeco-Macedonian hunters in the upper register of the composition.[381] Most recently, Andrew Stewart has argued that the mosaic was intended to illustrate the tri-partite division of the human race into savage barbarians, civilised barbarians and civilised Graeco-Macedonians, concluding that it was designed as a propagandistic composition that was simultaneously "racist, imperialist and exploitative".[382] There can be little doubt that the designer of the composition took considerable care to represent the different groups of people that inhabited Hellenistic Egypt, and that their juxtaposition invited reflections on the differences in their appearance, customs and values. But it does not necessarily follow that the mosaic was "racist" in conception. Rather, it may simply have been intended as an objective study of the people of Egypt, without implying moral or class judgements, whether positive or negative.[383]

[379] Coarelli 1990, 226-229, 249-250.
[380] Steinmeyer-Schareika 1978, 52, 79-80, 96-97, 124-126.
[381] Trinquier 2007, 36-37.
[382] Stewart 2014, 227-233.
[383] This rebuttal owes much to Smith's study of so-called genre figures: see Smith 1991, 139.

A different approach was adopted by Paul Meyboom, who proposed that the mosaic illustrated the annual festival in the month of Khoiak celebrating the funeral procession and subsequent resurrection of the god Osiris, events that were believed to mark the start of the Nile inundation.[384] The theory centres on the procession of Egyptian priests passing through a propylon in section 16, who carry a rectangular chest supported by two poles on their shoulders, identified as the ritual sarcophagus of Osiris being carried towards the god's tomb in the "grove complex" of sections 13, 20 and 16 (Fig. 48). The religious thrust of this scene is palpable, and it is entirely possible it was intended to allude to the celebrations that accompanied the annual inundation, be it the Khoiak festival itself or another aspect of the festivities.[385] Whether or not this religious element constituted the central, unifying theme of the mosaic seems more open to debate. After all, the interpretation does not explain the presence of the Aethiopian fauna in the upper register of the mosaic, and this inconsistency led Meyboom to propose that the composition is a combination of two pre-existing Alexandrian prototypes, each corresponding to one of its two iconographic registers.[386] Furthermore, the procession of priests in section 16 did not occupy an especially prominent position within the composition, and may simply have been conceived as one of the "charakteristische Eigenheiten des Landes" in the manner of many of the other vignettes of the lower register.[387]

Much more prominent was the "pavilion scene" represented in sections 13 and 14, which, we have seen, occupied the centre of the foreground of the composition, and was further distinguished by the presence of the Ptolemaic ruling couple standing beneath a lavish red parasol. Other features confirm the exceptionality of the scene, notably the height of the pavilion-shrine, which is the tallest structure represented in the mosaic, and the unparalleled

384 Meyboom 1995, 50-79.
385 As suggested by Malaise 1997, 516-517.
386 Meyboom 1995, 99-102.
387 Hinterhöller 2009, 69-70.

number of comparatively tall figures shown standing in front of this building. In its current state the scene is heavily restored, but its original details can be re-constructed with some confidence thanks to the corresponding dal Pozzo copies.

The scene centres on a group of ten human figures standing in front of the pavilion-shrine, nine of whom are Ptolemaic soldiers wearing characteristically Hellenistic armour (Fig. 42, 43, 44).[388] The tenth figure is a female, standing at the far right of the group, who wears a blue chiton and a yellow himation, and carries a palm branch in her left arm and a *kyathos*, a ladle for dispensing wine, in her right. She is usually interpreted as a priestess. All of the figures are shaded by a large awning, which is hung from the pediment of the pavilion-shrine and fastened to the stump of a tree and to a pole. Beneath the awning there is also a large table supporting three ornamental drinking horns (*rhyta*), next to which a large gold or bronze crater stands on the ground. The soldier standing immediately to the left of the priestess is shown drinking from a *rhyton* similar to those displayed on the table,[389] and is further distinguished by the wreath that he wears on his head. He is sometimes referred to as the "general" or "officer" of the group by virtue of these exceptional features.

The assemblage of eating and drinking paraphernalia indicates that the group in front of the pavilion-shrine is partaking in some kind of ritual celebration, but the nature of this celebration requires careful scrutiny. For Meyboom, the scene should be associated with the Khoiak festivities, much like the other vignettes represented in the lower register.[390] Viewed in isolation, however, the iconography of the scene does not immediately lend itself to a religious reading of this nature. Particularly instructive is the manner in which the nine

[388] For descriptions of the scene, see Steinmeyer-Schareika 1978, 80-82; Coarelli 1990, 238-241, 244, 246-247; Meyboom 1995, 34-37; Hinterhöller 2009, 58-59.
[389] Both Steinmeyer-Schareika (1978, 81) and Coarelli (1990, 245) interpreted this as a trumpet, but its similarity to the *rhyta* on the table suggests that it is indeed a drinking horn.
[390] Meyboom 1995, 64-70.

soldiers are represented. They are all standing, clothed in cumbersome armour and helmets, and armed with large shields, swords and long spears. In front of them is a pile of military equipment consisting of shields, helmets, and an axe,[391] as well as a lean hound of the kind commonly employed in hunting and warfare in the ancient world.[392] Together these elements create the impression that these men have recently been engaged in an active military campaign, and this does not fit particularly neatly with the notion that they have simply gathered here to indulge in a ceremonial drinking party related to the annual inundation of the River Nile.

A comparison with the party of seven soldiers represented on the painted frieze of a third century B.C. Macedonian tomb at Aghios Athenasios is enlightening in this respect (Fig. 49).[393] Although three of these soldiers are clothed in full "Macedonian military dress",[394] a number of features suggest that this group has not been engaged in any actual fighting. At least four of the men wear only a chiton, (with or without an accompanying himation), and two of them have dispensed with their military *krepides* and instead wear insubstantial sandals. These items of clothing would have been poorly suited to actual combat, and the same might be said of the decorative winged helmets and *kausiai* that the men wear on their heads, especially when compared to the heavy Thracian-style helmets worn by the soldiers in the Nile Mosaic. It is also noticeable that only three of the men carry shields, even if all seven of them are equipped with long spears. Together, these features seem better suited to a ritual or ceremonial context as opposed to one strictly connected to the military sphere, and this observation is confirmed by the iconography of the rest of the frieze, which depicts a lavish symposion taking place in an outdoor setting.

391 Note Agatharchides' testimony (fr. 54b Burstein) that elephant hunters in Aethiopia commonly wielded axes.
392 Note Agatharchides' testimony (fr. 80b Burstein) that the group of hunters who caught a giant serpent for Ptolemy II provoked the beast with a "pack of fierce dogs".
393 For this tomb panting, see Tsibidou-Avloniti 2002, 91-97; Brecoulaki 2006a, 268-280.
394 Miller 2014, 184.

The contrast is stark, and lends credence the view that the celebration in front of the pavilion-shrine in the Nile Mosaic should be associated with a military campaign undertaken by the group of soldiers. Support for this theory is offered by the palm branch held aloft by the priestess in her left arm, which was interpreted by Meyboom as "a sign that the flood has been successful".[395] Typically, the palm branch was employed as an attribute of victory in ancient art, and its presence here suggests that the group of soldiers may be celebrating a military triumph of some description. The wreath worn by the general may also be significant in this respect, since such wreaths were also employed as attributes of victory in the ancient world, in athletic and other contexts.

It is important to ask how far the iconography of the rest of the composition corroborates this reading of the pavilion scene as a celebration of Ptolemaic military success. The only other overt reference to military activity is provided by the bireme depicted in section 17 (Figs. 46, 47). The original position of this section has been debated by scholars, and it is unclear whether it was located immediately adjacent to the pavilion scene, or further back, between sections 11 and 19. In either case, it is possible to make some important observations concerning the manner in which the ship was represented.[396] In the first instance, its bow was pointed towards the pavilion-shrine, suggesting that the vessel was shown sailing up the Nile *towards the Delta*,[397] perhaps on the way back from a naval campaign. This campaign was a significant undertaking, judging by the number of crew required to operate the bireme. Indeed, two rows of twenty-seven oars are visible on its port side, suggesting that it accommodated some 108 rowers in total, to which we should add the seventeen hoplites whose heads, shields and spears are visible over the sides of the vessel. A

[395] Meyboom 1995, 69.
[396] The very best account of this ship provided by Friedman 2006, 121-122, 132-134, 137-138, 140-141.
[397] Contra Meyboom 1995, 40.

figure identified as the *prorates* stands on the bow of the ship, and the dal Pozzo copy indicates that he was originally shown sounding a long trumpet, which he held in his right hand. This action clearly constituted an announcement or proclamation of some sort, the precise nature of which is open to interpretation. One suggestion, predicated on the supposition that section 17 was positioned adjacent to the pavilion scene, is that the *prorates* heralds the arrival of the Ptolemaic royal couple standing beneath the parasol in section 14, and that the ship was their royal escort.[398] An alternative possibility is that he is, in fact, announcing the successful return of the ship and its crew from an expedition in a faraway land. The leftmost soldier positioned in front of the pavilion-shrine in section 13 has sometimes been viewed in an analogous way: as a messenger bringing news of a military triumph.[399] He is spatially separated from his companions, and seems to be advancing towards them, propping himself up on the spear or walking stick that he holds in his right hand.

According to this reading of the Nile Mosaic, then, the lower register featured both a series of scenes exhibiting the daily life of the many socio-ethnic groups that inhabited Hellenistic Egypt, and one or two vignettes that alluded to the celebration of a successful military campaign, probably in the presence of the Ptolemaic ruling couple. Of course, this begs the question of what kind of military campaign was being celebrated. An answer is suggested by the upper register of the composition.

VI. Aethiopia and Ptolemaic Natural Science

The decision to depict Aethiopia and Nubia in the upper register of the Nile Mosaic is entirely comprehensible in historical terms. We saw in Chapter One that Ptolemy II

[398] Walker 2001, 334.
[399] Coarelli 1990, 245; Stewart 2014, 230.

Philadelphos launched a military campaign into Aethiopia and Nubia in *c.* 275 B.C., and that this expedition paved the way for subsequent explorations of the lands south of Egypt, and for the importation of elephants and other "extraordinary" animals into Alexandria. As we have noted, the upper register of the mosaic is filled with depictions of such extraordinary creatures, twenty of which are accompanied by identifying labels composed in Greek, in a manner reminiscent of the painted frieze of the Tomb of Apollophanes at Marisa.

It is important to stress that the practice of labelling figures had a strong pedigree in classical art.[400] Pliny the Elder held that the custom went back to the earliest times,[401] and there can be little doubt that it was firmly established by the late Archaic and early Classical periods, judging by well-known examples such as the north and east friezes of the late-sixth century B.C. Siphnian Treasury at Delphi, in which gods, giants and heroes were accompanied by painted identifying labels in Greek,[402] and Polygnotos' *Ilioupersis* in the Kindian Lesche at Delphi, dated to the 460s B.C., whose protagonists were still readily identifiable when Pausanias viewed the painting some six centuries later.[403] Hellenistic instances of the practice are less well known, but famous examples are provided by the Gigantomachy frieze of the Great Altar at Pergamon, where the names of the gods were inscribed on the cornice immediately above the composition, and those of the giants were inscribed on moulding course immediately below;[404] and the so-called Archelaos relief found at Bovillae in central Italy, in which the personifications sacrificing to Homer in the lowest register were identified by their names inscribed below.[405] The continued popularity of such labelling is attested by the painted Odyssey frieze discovered on the Esquiline (Fig. 50) and the Ilioupersis frieze from the House of the Cryptoporticus in Pompeii, both dated to the mid-first century B.C.,

[400] Hurwit 2015, 56-63.
[401] Plin., *HN*., XXV 16.
[402] Osborne 1998, 121-123.
[403] Paus., X 25, 2 – 27, 4.
[404] Smith 1991, 159.
[405] Ibid, 187.

which again featured protagonists accompanied by identifying labels in Greek.[406] Most scholars contend that these paintings were inspired by Hellenistic originals.

Viewed against this background, it is tempting to conclude that the identifying labels accompanying many of the animals in the upper register of the Nile Mosaic at Praeneste constituted simply one manifestation of an artistic phenomenon that had gained traction in the Greek-speaking world over a period of several hundred years. But the *differences* between the labels in the Nile Mosaic, and those in, say, the Odyssey frieze in the Vatican are also very instructive. Most obviously, the labels in the Vatican frieze were used to identify the principal players in Homer's *Odyssey*, men and heroes whose exploits had been well documented in the Greek literary tradition, while those in the Nile Mosaic were used to identify a series of exotic creatures that came from foreign lands. The Vatican frieze seems to have been more typical in this respect, since such labels were used to identify gods, heroes, personifications, and men – and not animals – in each of the works of art enumerated in the previous paragraph. A second difference is provided by the important role played by identifying labels in producing what we might term "narrative specificity" in the individual scenes of the Vatican frieze. Here the labels were attached to figures engaged vigorous action and interaction, lending each scene an exactness which mirrored that of the corresponding episode in Homer's *Odyssey*. In the Nile Mosaic, however, the labels were attached to animals which, for the most part, did not interact with each other in any meaningful way. Again the Vatican frieze seems more typical in this respect: compare, for instance, the Gigantomachy frieze of the Great Altar, where the identifying labels lend a sense of precision to this apocalyptic battle of gods and giants, to the extent that one scholar has proposed that the composition may have been modelled on a lost Attalid court epic.[407]

[406] Ling 1991, 107-111.
[407] Smith 1991, 163-164.

One way of exploring the significance of these differences is to consider the extent to which removing the labels would have affected the intelligibility of either composition. Although we should not underestimate ancient viewers' familiarity with the *Odyssey* and the ways in which it could be translated into art and visual culture, it seems likely that removing the identifying labels from the Vatican frieze would have rendered some of its scenes less comprehensible in the eyes of those who viewed them. The narrative would have become less well defined, the protagonists less easy to identify, the details of each scene more open to interpretation.[408] Whether the impact of removing the identifying labels from the upper register of the Nile Mosaic would have been quite as dramatic is less certain. As we have seen, the labels contributed nothing to the composition in the way of narrative, and it seems likely that the overall thrust of the iconography – a collection of foreign animals in an exotic land inhabited by black hunters – would have remained comprehensible to most viewers with or without the labels.

In light of these differences, it becomes possible to forward some hypotheses about the significance of the identifying labels of the Nile Mosaic. Lacking a true narrative function, these constituted a self-sufficient aspect of the iconography, attaching definitive names to a portion of the animals depicted in the upper register. Although each label pertained to the representation of a particular creature, the juxtaposition of so many labelled animals resulted in something resembling a visual catalogue of species, albeit one that was carefully integrated into a complicated and iconographically diverse work of art. In such a context, the labels furnished a level of specificity that lay well outside the norms of representations of animals in ancient art, and which hinted at concerns of a more scientific nature. The most compelling explanation is that they were, in fact, taxonomic in conception, providing one manifestation a

[408] Ling 1991, 109-110.

process of naming and classifying newly discovered creatures that had taken root in Ptolemaic Alexandria during the third century B.C. This reading fits very neatly with the evidence that was presented in Chapter One of this thesis, where we saw that cataloguing and classification constituted such important elements of Alexandrian scholarship and intellectualism during the Hellenistic period.

The majority of labels were attached to representations of creatures that were indigenous to Aethiopia during antiquity, and it is tempting to infer that the Alexandrian programme of classifying animals was restricted to creatures that had been encountered by the Greeks in the territories south of Egypt. But the upper register of the composition also incorporates representations of several creatures that were not indigenous to Africa, and whose presence in a rocky Nubian landscape is impossible to reconcile with reality. Among them are the bear of section 7 (Figs. 51, 52), the camel of section 3 (Figs. 53, 54), and the peacock of section 3 (Figs. 53, 54), which were indigenous to Syria, Arabia and India respectively.[409] Both the bear (labelled ΔPKOC, probably a misspelling for APKOC) and the camel (labelled VABOYC) were accompanied by identifying labels, suggesting that animals from outside of Africa could be classified and catalogued in precisely the same manner as their Aethopian counterparts during the third century B.C. This is entirely consistent with the display of animals from all corners of the known world during Philadelphos' Grand Procession, and with Agatharchides' statement that this king was interested in "animals separated by nature":[410] that is, from the all corners of the *oikoumenē*.

VII. The Origins of Taxonomic Representations

[409] Meyboom 1995, 46, 47.
[410] Agatharchides fr. 1 Burstein.

It remains to determine the process through which these representations of animals accompanied by identifying labels came into being. We saw in Chapter One that Ptolemy II Philadelphos brought together animals from across the known world "to live in one place" in Alexandria,[411] and, against this background, it is tempting to conclude that these representations were conceived in the Ptolemaic royal capital itself, where artists and intellectuals might view these creatures in captivity first hand. Support for this notion is offered by Kallixeinos of Rhodes' account of the Grand Procession, which indicates that a considerable number of the animals depicted in the upper register of the mosaic were paraded through the streets of the city during the 270s B.C.

On closer inspection, however, the iconography of composition suggests that this reconstruction is unlikely to be correct.[412] The most obvious problem is posed by the four demonstrably fantastical animals depicted in its upper register: the "*xiphías*" creature labelled ΞΙΟΠΓ shown standing on a rocky outcrop in section 2,[413] which combines a sturdy, hippopotamus-like body with a long, crocodile-like mouth containing very sharp teeth (Figs. 55, 56); the female "ass-centaur" labelled HONOKENTAYPA in section 1, which combines a human-like head with the body of an ass (Figs. 57, 59); the creature labelled KPOKOΔIΛOCXEPCAIOC shown basking in the sun in section 7, which combines a lizard-like body with a dog-like head (Figs. 51, 52); and the "crocodile-panther" labelled KPOKOΔIΛOΠAPΔAΛIC in section 11, which combines a crocodile-like body with a panther-like head (Figs. 60, 61). Clearly none of these representations were modelled on real life animals kept in Alexandria, and this raises the possibility that the taxonomic

411 Ibid.
412 Contra Trinquier, (2002, 887-888) who argues that it is impossible to know under what kind of conditions the represented creatures were observed.
413 The "*xiphías*" nomenclature is predicated on the correspondences between this creature and an animal representation accompanied by the label "*xiphías*" on the Artemidoros Papyrus: see Pajón Leyra 2009, 64.

representations of *real* animals featured in the mosaic might also have been conceived elsewhere.

It is significant, in this respect, that the majority of real creatures depicted in the composition were represented relatively synoptically, and without a zoological level of accuracy. A good example is supplied by the rhinoceros of section 9 (Figs. 62, 63, 64), which stands out thanks to the unusual orange and yellow colour of its hide. The most glaring inaccuracy is provided by the sharp set of teeth that appear inside the creature's open mouth, since the two African sub-species of this herbivorous animal do not, in fact, have any teeth at the front of their mouths, relying instead on their lips to pluck food from trees. We might also point to the small size of its horns, the fact that the front horn is roughly the same size as the posterior horn, the incorrect positioning of its nostril and eye, and the rather flat projection of its (tasselled?) ears. The giraffes of section 5 are similarly unnaturalistic (Figs. 65, 66, 67). Their necks are too short in relation to their bodies, and their bodies are too hefty in relation to their legs, and their complex coat has been reduced to a schematised pattern of dark V-shapes set against a light background.[414] Other examples abound: the bear in section 7 (Figs. 51, 52) looks more like a cow; the *kepos* monkey in section 6 (Figs. 68, 69) looks like an arboreal dog; and the lynx in section 6 (Figs. 68, 69) resembles the famous sculpture of a seated lion from Amphipolis in Northern Greece. The lack of attention paid to the relative scales of the creatures is also very noticeable.

The consistency of these inaccuracies makes it unlikely that the representations were founded on the detailed observation of real life specimens kept in captivity. Rather, it seems much more probable that they relied on sporadic contact with the species concerned, and that some were composed in the aftermath of these interactions: that is, without the artists necessarily

[414] Coleman 1994, 258.

being in the presence of the represented animal. These observations fit more neatly with the hypothesis that some of the representations were formulated on the basis of encounters with these animals *in the wild*, in contexts such as royally sponsored expeditions to Aethiopia and the Red Sea hinterlands during the third century B.C.

Support for this theory is supplied by a series of correspondences between the iconography of the upper register and the collection of zoological descriptions attributed to Agatharchides of Knidos, who, as we have seen, wrote an historical account detailing Ptolemaic initiatives in Aethiopia and the Red Sea during the third century B.C. In total, twelve of Agatharchides' descriptions of Aethiopian animals survive, concerning lions and "ant-lions", cheetahs and/or leopards, rhinoceroses, elephants, giraffes, sphinxes, the doghead, *kepi*, carnivorous bulls, horned pigs, hyenas, and giant snakes.[415] The majority of these creatures were also represented in the Nile Mosaic: a lioness suckling her cub with the label ΛΕΑΙΝΑ in section 6 (Figs. 68, 69); a pair of cheetahs with the – erroneous – label ΤΙΓΡΙC in section 7 (Figs. 51, 52); a rhinoceros with the label ΡΙΝΟΚΕΥϬC in section 9 (Figs. 62, 63); two elephants in sections 3 and 6, now lost, but known from the corresponding dal Pozzo copies (Figs. 54, 69); a pair of giraffes with the restored label Κ.ΜΕΛΟΠΑΡΑΑΛΙ, originally perhaps ΚΑΜΕΛΟΠΑΡΔΑΛΙC, in section 5 (Figs. 65, 55); a monkey, perhaps a kind of guenon, identified as a "sphinx" by its label CΦΙΝΓΙΑ in section 2 (Figs. 55, 56); a baboon-like animal labelled ΚΗΙΥΙΕΝ, probably a misspelling for ΚΕΠΠΟΝ, a diminutive of *kepos*, in section 6 (Figs. 68, 69); a pair of pigs with horns, probably warthogs, in section 10 (Figs. 70, 71); a striped hyena with the label ΚΡΟΚΟΤΤΑC in section 3 (Figs. 53, 54); and two giant snakes in sections 1 and 7 (Figs. 58, 59). The only animals described by Agatharchides that are *not* visible are the "ant-lion", "doghead", and carnivorous buffalo. The extent of the crossover is

[415] Agatharchides frs. 68-80 Burstein.

clear, opening the possibility that some of the representations of animals in the mosaic were conceived in the same cultural milieu as Agatharchides' zoological descriptions.

Important information concerning this milieu is supplied by Agatharchides' own testimony that his account of the African coast of the Red Sea was founded on "information that we have obtained from the royal *hypomnemata* at Alexandria and that we have learned from eyewitnesses."[416] The royal *hypomnemata* were the official reports of Ptolemaic agents who had been sent to the territories south of Egypt during the third century B.C.[417] Agatharchides explicitly cites the testimony of one Simmias, who is known to have explored the coast south of Ptolemais of the Elephant Hunts for Ptolemy III Euergetes, and to have composed a report of this nature.[418] He is also believed to have consulted the *hypomnemata* of Satyros, who explored the country of the Troglodytes and founded Philotera there on behalf of Ptolemy II Philadelphos,[419] and Ariston, who surveyed the western coast of Arabia during the reign of the same king.[420] The reference to "eyewitnesses" is more ambiguous, but is commonly taken to refer to reports that were less official in nature, but likewise written by men who had been sent to Nubia and Aethiopia by the kings.[421] Several such accounts are known, including those written by Dalion, who was the first to explore the Nile valley south of Meroe during the reign of Philadelphos,[422] and by Pythagoras, an admiral serving under Philadelphos and/or Euergetes, who is known to have composed a treatise *On the Erythraean Sea*.[423] Agatharchides' dependence on such sources is clear from the very close correspondences between his

[416] Agatharchides fr. 81 Burstein.
[417] Burstein 1989, 30-31. Agatharchides' access to sources of this nature is readily explained by the close relationships that he enjoyed with a number of prominent royal courtiers during the reign of Ptolemy VI Philometor: Ibid, 14-15.
[418] Agatharchides fr. 41 Burstein.
[419] Strab., XVI 4, 5; Burstein 1989, 31.
[420] Diod. Sic., III 42, 1; Tarn 1929, 14.
[421] Désanges 1978, 258; Burstein 1979, 97-101; *Id.* 1989, 31-33. Our principal source concerning these authors is Plin., *HN*., VI 183.
[422] Désanges 1978, 259-260.
[423] Ibid, 278-279.

description of the *kepos* monkey and the description this animal attributed to Pythagoras,[424] and between his account of the *krokottas* hyena and the description of this creature attributed to Dalion.[425]

The very nature of these reports indicates that the zoological descriptions that they contained would have been based on interactions with species in the wild, and this is borne out by those transmitted by Agatharchides, several of which explicitly allude to the behaviour of Aethiopian creatures in their natural habitats. If, therefore, we are justified in speculating that some of the taxonomic representations of animals in the upper register of the mosaic originated in the same cultural milieu as these descriptions, it is possible that they, too, were conceived in the context of royally sponsored expeditions to Aethiopia during the third century B.C. One possibility is that the royal *hypomnemata* and eyewitness accounts were themselves illustrated, and that their taxonomic representations of animals were later re-produced in large scale works of art, including the composition that inspired the Nile Mosaic at Praeneste.[426]

This re-construction is necessarily hypothetical, and may over-simplify what was probably a complicated and multi-faceted process. Still, the evidence is sufficient to justify the view that the taxonomic representations of animals in the mosaic were formulated on the basis of sporadic contact with the species concerned, perhaps in conjunction with – or in response to – written descriptions similar to those transmitted by Agatharchides. Had they been based on the close study of animals in captivity, we would expect closer attention to matters of scale and detail, and an absence of overtly fantastical creatures. Viewed in tandem with Agatharchides' zoological descriptions, therefore, the taxonomic representations attest to a

[424] Compare Agatharchides fr. 76 Burstein and Ael., *NA.*, XVII 8.
[425] Compare Agatharchides fr. 78 Burstein and Ael., *NA.*, VII 22.
[426] Suggested by Phillipps Jr (1962, 117-182) and Steinmeyer-Schareika (1978, 75-80).

process of naming, classifying, describing and depicting creatures upon encountering them in foreign lands, and this is entirely consonant with the trajectory of Alexandrian intellectualism that was presented in Chapter One of this thesis.

This reading is also much more consistent with the presence of four demonstrably fantastical animals in the upper register of the composition. It is clear that such fantastical creatures were described in the *hypomnemata* and "eyewitness" accounts consulted by Agatharchides, judging by this author's accounts of the "ant-lion", the "dog-head", and the carnivorous bull, all of which seem to have had precious little basis in reality.[427] While these particular species do not seem to have been depicted in the Nile Mosaic at Praeneste, there are good reasons to believe that taxonomic representations of such creatures might be formulated in the manner of those of real animals. Firstly, a taxonomic representation of the "ant-lion" does survive, sketched on the *verso* of the so-called Artemidoros Papyrus, as we shall see in Chapter Four. Secondly, and more importantly, Aelian preserves a description of the "ass-centaur" composed by Pythagoras, the Ptolemaic admiral whose description of the *kepos* was recycled by Agatharchides.[428] This description provides a firm point of contact between the third century B.C. sources utilised by Agatharchides on the one hand, and the taxonomic representations of fantastical animals in the Nile Mosaic on the other.[429]

VIII. Fantastical Animals

Of course, the realisation that representations of fantastical animals were formulated in the same manner as those of real animals says nothing of how and why these creatures came to be described and depicted in the first place, since they can hardly have been based on

[427] Agatharchides frs. 70, 75, 77 Burstein.
[428] Ael., *NA.*, VII 9.
[429] Steinmeyer-Schareika 1978, 79-80.

interaction with real life specimens in the same way as, say, a rhinoceros or giraffe. It is also clear that the factors underpinning these representations were different to those that lay behind the representation of a griffin in the painted frieze of the Tomb of Apollophanes at Marisa. Indeed, while the griffin had long been regarded as an exotic animal *par excellence* in the classical world, there is nothing to suggest that the *xiphias*, the "ass-centaur", the "crocodile-panther" and the *krokodiloschersaios* had the same kind of pedigree in pre-existing art and thought.

A useful starting point when analysing these fantastical animals is provided by our earlier observation that many of the representations of *real* animals in the Nile Mosaic exhibit noticeable morphological inaccuracies. These inaccuracies were presumably conditioned by a range of factors: lack of opportunities to study a particular species in close detail; loss of memory as to what a given creature actually looked like; lapse of time between seeing and depicting a given species; the influence of written accounts; confusion caused by contradictory testimonies concerning the appearance of an animal; the supposition that the nomenclature of a creature necessarily mapped onto its physiognomy; and so on. The literary tradition encompassing Agatharchides' zoological descriptions preserves evidence of a comparable process of distortion, involving the transmission of rumours, exaggerations, and factual inaccuracies. For example, Agatharchides describes the giraffe as being the same size as the camel, when in reality it is much larger, and claims that this creature has the spotted coat of a leopard, which we know to be untrue.[430] He also narrates the capture of a python thirty cubits (*c.* 13.72 m) long,[431] even though the species to which he refers, the African rock python, is only attested to a maximum length of *c.* 7.50 m.[432] Most telling is his assertion that "Sphinxes resemble the animals as depicted in pictures except that they are completely

[430] Agatharchides fr. 73 Burstein.
[431] Agatherchides fr. 80 Burstein.
[432] Starin and Burghart 1992, 50-62. Note, however, that Bodson (2003, 186) regards Agatharchides' measurement as accurate.

covered with hair and are tame and gentle in disposition",[433] which reveals a propensity for blurring the boundaries between the real and fantastical, since he is almost certainly referring to a monkey of some description.[434]

In an intellectual environment where distortion, exaggeration, conflation, inaccuracy and hearsay were regular aspects in the representation and description of *real* animals, it is not difficult to imagine how creatures of a seemingly fantastical nature – including the *xiphías*, "ass-centaur", "crocodile panther", and *krokodiloschersaios* of the Nile mosaic – might infiltrate the sphere of Hellenistic zoology. Some of these creatures may have had their conceptual origins in encounters with real species in foreign lands. All were subject to a process of descriptive and representational distortion that eroded their foundations in reality. The details of this process are, of course, very difficult to re-construct, but some useful insights are supplied by Agatharchides' description of one such fantastical creature, known as the carnivorous buffalo:

> "Of all the animals that people mention, however the carnivorous bull is the fiercest and in every way the most difficult to subdue. In size it is larger than domesticated bulls, and in fleetness of foot it is not inferior to a horse while its mouth opens as far as its ears. Its colour is an extremely bright red. Its eyes are more brilliant than those of a lion and at night they gleam. Its horns have a peculiar characteristic. For most of the time the animal moves them like its ears, but in fights they stand erect. The direction of growth of its hair also is opposite that of other animals […] Its skin is also said to be immune to wounds. Although many have tried to capture one, no one has succeeded in subduing it […] the Trogodytes rightly consider this animal to be the strongest since nature has endowed it with the courage of a lion, the swiftness of a horse, the strength of a bull and immunity to iron whose nature is the strongest of all."[435]

[433] Agatharchides fr. 74a Burstein.
[434] Suggested by the creature labelled ΣΦΙΝΓΙΑ in section 2 of the Nile Mosaic, which is clearly a long-tailed monkey.
[435] Agatharchides fr. 77b Burstein.

It is significant that the description of this animal – with its bright red pelt, inverted hair and manoeuvrable horns – encompassed the statement that it had never been captured, since this all but confirms that it was never studied in systematic detail at very close quarters. In fact, Agatharchides provides some indication of the kinds of channels through which descriptions of this animal were formulated and circulated when he lets slip that at least a portion of the account was founded on hearsay: ("Its skin is also said to be […]"). Clearly, then, the description was not founded on direct interaction with a living, breathing animal: and the same was presumably true of the visual representations of such creatures, which likewise depended on stories and rumours rather than first hand interaction.

This all leads to some important conclusions. It is clear that depicting and describing animals in Hellenistic times often involved striking a balance between fact, rumour, and fiction. But it is equally apparent that the balance of these elements varied from representation to representation, and from description to description. From a modern, post-Linnaean standpoint, it is comparatively easy to differentiate between those representations and descriptions of animals in which "fact" was predominant, and those in which "fiction" rose to the fore, hence the binary classification of real and fantastical animals maintained so far in this thesis. Whether or not this distinction was as sharply defined in the ancient psyche as it is today seems much less certain. Indeed, the casual juxtaposition of real and fantastical animals in the Nile Mosaic at Praeneste and the painted frieze of the Tomb of Apollophanes at Marisa suggests that all of these creatures were conceptualised as belonging to a common spectrum of "extraordinary" creatures, most of which had been classified and represented for the first time as a result of royally sponsored expeditions to foreign lands. The majority of ancient viewers may not have been attuned to the fact that some of the animals were more realistic than others. Rather, *all* were probably believed to have a firm basis in reality, and *all* of their

taxonomic identifying labels were probably taken as paradigms of the advancements in knowledge that had been precipitated by the exploration of hitherto unchartered territories.

IX. Territorial Ideology

According to the interpretation of the Nile Mosaic at Praeneste outlined in this chapter, then, the lower register of the composition alludes to the aftermath of a Ptolemaic military expedition, set against the backdrop of a peaceful and prosperous Egypt, while the upper register alludes to the advances in scientific knowledge that were precipitated by royally sponsored expeditions to Aethiopia from the 270s B.C. Viewed in its entirety, therefore, the mosaic constitutes a visualisation of the aftermath of a successful expedition to Aethiopia, which encompasses the return of soldiers from this foreign land, the intellectual advancements that the mission facilitated, and the continued stability that Ptolemaic rule brought to the countries traversed by the river Nile. It follows that the mosaic is entirely comprehensible as a unitary composition, and that it was probably inspired by a single, pre-existing work of art, presumably from third century B.C. Alexandria. The presence of the ruling couple in section 14 indicates that this work of art probably originated among the uppermost echelons of Ptolemaic society.

In light of this royal connection, it is important to note that the decision to depict a newly explored foreign land resonated with the territorial rhetoric that seems to have been an important aspect of Alexandrian court poetry during the third century B.C.[436] The best-known example is provided by Theokritos' seventeenth *Idyll*, a panegyric exalting Ptolemy II Philadelphos and his father:

[436] Strootman 2010, 40-44; *Id.* 2014a, especially 47-49; *Id.* 2014b, 320-322.

> "…over all these [Egyptian cities] mighty Ptolemy rules as king. In addition he cuts off for himself a part of Phoenicia, Arabia, Syria, Libya and of the dark-skinned Aethiopians. He gives orders to all the Pamphylians, to the Cilician spearmen, to the Lycians and to the warlike Karians, and to the islands of the Cyclades, since his are the finest ships that sail the seas. All the sea and land and the roaring rivers are ruled by Ptolemy, and about him gather a host of horsemen and a host of shielded warriors, equipped with glittering bronze."[437]

In the first part of this extract, Theokritos emphasises Philadelphos' mastery over the lands of his empire, beginning with his royal powerbase in Egypt and then moving to the other territories in his realm, including the land of the "dark-skinned Aethiopians". In the second part, the poet delivers a more open-ended definition of the king's authority, painting him as the rightful ruler of "All the sea and land": that is, the entire *oikoumenē*. A similar definition of royal power was presented by Kallimachos of Kyrene in his *Hymn to Apollo*. Kallimachos praises Philadelphos, "beneath whose crown shall come – not unwilling to be ruled by a Macedonian – both continents and the lands that are set in the sea, as far as where the ends of the earth are and the source from whence the swift horses of Helios carry him."[438]

This territorial rhetoric was perpetuated during the reign of Ptolemy III Euergetes, judging by the so-called Victory Stele, a Greek inscription of *c.* 241 B.C. discovered in Adoulis on the Red Sea, which commemorated the king's achievements in the Third Syrian War (246 – 241 B.C.).[439] In the inscription we are told that having crossed the River Euphrates, Ptolemy III "subdued Mesopotamia, Babylonia, Susiane, the Persis, Media and the rest of the land as far as Baktria": in other words, the entirety of the Seleukid empire. Other sources verify that the king did indeed reach as far as Babylonia,[440] but they also suggest that he withdrew to Egypt

[437] Theok., *Idyll* XVII, ll. 85-94; cf. Hunter 2003, 153-170.
[438] Kallim., *Hymn* IV, 166-170.
[439] For this inscription see Strootman 2014a, 48; *Id.* 2014b, 321-322.
[440] App., *Syr.*, 65; BM 34428 = BCHP 11.

in 241 B.C. without having progressed much further.[441] Certainly, then, he did not conquer "the rest of the land as far as Baktria". Perhaps the enumeration of territories belonging to the Seleukid Empire expressed a belief that they constituted "spear won land" in the wake of Euergetes' victories over Seleukos II, but this rhetoric was in no way aligned with reality.[442] Rather, the territorial content of the inscription was hypothetical and aspirational, conforming to the universalistic ideology presented in the poetry of Theokritos and Kallimachos.

Seen against this background, it seems likely that the composition that inspired the Nile Mosaic was also designed to frame Ptolemaic power in territorial terms. The ruling couple, afforded pride of place in the lower register of the composition, were presented as the masters of the lands lying south of Egypt, who had successfully tamed a region hitherto "inhospitable to foreigners and altogether dangerous"[443] for the very first time. In this context, the animals accompanied by identifying labels in the upper register surely had a pronounced ideological dimension. Taxonomic knowledge, it seems, has become an allegory for territorial domination and political power.

This ideological dimension becomes even more pronounced when we consider an element of the iconography of the mosaic that is frequently overlooked: the oval-shaped features interspersed among the rocks of the upper register, which are usually identified as precious and semi-precious gemstones (Figs. 51-71). The appearance of these stones is generic, making it very difficult to discern whether they were intended to represent particular types of gem.[444] Still, their inclusion in the composition fits neatly with what we know of the Ptolemaic kings' exploitation of precious stones and minerals in the region south of Egypt during the third and second centuries B.C. Agatharchides is again a useful witness, since he describes the miserable

[441] Just., *Epit.*, XXVII 1, 9.
[442] Strootman 2014a, 48; *Id.* 2014b, 321-322.
[443] Diod. Sic., I 37, 5.
[444] Meyboom 1995, 222 n. 4; Tammisto 1997, 255 n. 355.

working conditions of the men who worked the gold mines of the Wadi Allaqi, which were opened in the aftermath of Philadelphos' Nubian campaign of *c.* 275.[445] He also mentions the extraction of topaz on the island of Gazirat Zabarjad, near the Red Sea coast.[446] Pythagoras, the admiral whose description of the *kepos* was utilised by Agatharchides, was responsible for the extraction of these topaz deposits during the reign of Philadelphos,[447] as was Philon, the author of another of the "eyewitness" accounts referred to by the Knidian.[448]

These connections are interesting, but the full significance of the gemstones depicted in the mosaic can only be appreciated with reference to a collection of twenty newly discovered epigrams written by the poet Poseidippos of Pella, grouped under the title *Lithika*, *On Stones*.[449] Poseidippos was an epigrammist who wrote on a wide range of subjects during the first half of the third century B.C., and whose close connections with the Ptolemaic kings at this time are well known. The epigrams of the *Lithika* describe a series of precious stones emanating from an impressive range of geographical locations, including India, Persia, Arabia, Lydia, Samos and Euboea. In each case, we are told of the passage of a particular stone from its place of origin to Ptolemaic Egypt, and of how it was subsequently transformed into a sumptuous gem in the hands of a Greek artisan. An analogy with the systematic collection of animals and books from across the known world in Alexandria is as obvious as it is compelling.

The final epigram of the collection, meanwhile, concludes with a prayer on behalf of the Ptolemaic sovereign: "But now, Lord of Geraestus [Poseidon], together with his islands keep

[445] Agatharchides frs. 23-29 Burstein. A team of French archaeologists have also discovered evidence of Ptolemaic gold mining at Samut, in eastern Egypt (Brun, J.-P., 'Ptolemaic Gold Mining at Samut (Egypt): The 2014 Campaign', lecture at All Souls College, Oxford, 22/05/2014).
[446] Agatharchides fr. 84a Burstein; cf. Plin., *HN*, XXXVII 108.
[447] Plin., *HN*., XXXVII 24; cf. Fraser 1972b, 305-305 n. 365.
[448] Plin., *HN*., VI 183; XXXVII 108; cf. Désanges 1978, 248-249.
[449] Poseidippos AB 1-20.

Ptolemy's lands and shores unshaken."[450] Meticulously conceived, this closing invocation not only asks for protection of the "land", "shores" and "islands" of the Ptolemaic kingdom, but also serves to set the preceding epigrams – with all of their geographical content – within an unambiguously royal framework. The result is an open-ended definition of Ptolemaic power, in which the king is presented as the master of the natural world through his extraction and refinement of raw mineral resources from across the *oikoumenē*.[451] Seen against this background, it seems likely that the precious stones depicted in the upper register of the Nile Mosaic also contributed to the territorial ideology of this remarkable composition. Like the taxonomic representations of animals, these gemstones hinted at the discoveries that had been precipitated by royally sponsored activities in the lands south of Egypt, and implied that royal authority extended to this region and to its mineral resources.

X. Conclusion

If this interpretation of the Nile Mosaic at Praeneste is correct, the animals accompanied by identifying labels in the upper register simultaneously alluded to the advancements in scientific knowledge that had been occasioned by third century B.C. expeditions to the lands south of Egypt, and were intended to demonstrate the wide reaching nature of Ptolemaic royal power. The notion that these representations had an ideological dimension is entirely consonant with the display of creatures from across the known world during the Grand Procession of Ptolemy II Philadelphos, and with the historically attested interest of this king – and others – in exotic animals emanating from hitherto unchartered lands.

[450] Poseidippos AB 20 Nisetich, ll. 19-20.
[451] Bing 2009, 254-259.

These conclusions also have implications for our interpretation of the painted frieze of the Tomb of Apollophanes in Marisa, which was the subject of the previous chapter of this thesis. By deliberately co-opting an existing iconographic repertoire that had previously been used to communicate royal concerns, the patron of the frieze could present himself as a well-connected man who was familiar with the latest modes of expressing power and privilege in Ptolemaic royal circles.

The representations of animals in the Nile Mosaic also reveal a great deal about the character and scope of natural science in the Hellenistic world. The identifying labels testify to an interest in classifying and taxonomising animals that fits very neatly with broader trends in Alexandrian scholarship during the third century B.C. This programme of taxonomy seems to have encompassed both real and fantastical animals, but the extent of this division should not be overstated, since it is very clear that the distinction between these categories was not as defined in the ancient world as it is today. In any case, it is likely that many of these representations emerged in the same milieu as the *hypomnemata* and "eyewitness" accounts cited by Agatharchides of Knidos: that is, in conjunction with literary descriptions, stories and *topoi* that were formulated on the basis of sporadic encounters with these species in the wild. Additional support for this theory will be provided in the next chapter, which focuses on the *verso* of the so-called Artemidoros Papyrus.

Chapter Four:

The Artemidoros Papyrus:
Re-assessing the Iconography of an Extraordinary Artefact

I. Prelude

A third example of the representational phenomenon that we have analysed in Chapters Two and Three is provided by the so-called Artemidoros Papyrus, a remarkable papyrus roll covered on both sides in text and images, known also as P.Artemid for short. The *verso* (reverse side) of this papyrus roll contains a large number of sketched vignettes of animals, depicted individually or occasionally in small groups, all of which were accompanied by identifying labels composed in Greek.

As is well known, P.Artemid. has generated an extraordinary amount of discussion and debate since its discovery was first announced in 1994.[452] The papyrus was the subject of a highly publicised exhibition in Torino in 2006, before it was finally published in a voluminous 600-page *editio princeps* in 2008.[453] Neither the exhibition nor the *editio princeps* avoided controversy. The former coincided with the beginning of a fierce debate concerning the authenticity of the papyrus, which has continued to dominate discussions of the artefact in the years since.[454] Many important details of the *editio princeps*, meanwhile, have been attacked by scholars on both sides of the authenticity debate. Some of these controversies will be touched upon in this chapter, but my aim is not to provide an overview of the state of the debate(s). Rather, we shall see that P.Artemid. testifies to the extent to which Alexandrian zoology permeated Graeco-Egyptian society during the Hellenistic period and beyond.

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[452] Albert 1994, 229.

[453] Gallazzi, Kramer and Settis 2008.

[454] Useful reviews of the authenticity debate are presented by Marcotte 2010, 333-371 and Pajón Leyra 2014, 353-370. The staunchest advocate of the view that the papyrus is a modern creation is Professor Luciano Canfora of Bari University, who has relentlessly argued, in conjunction with a number of loyal collaborators, that the document should be attributed to the famous nineteenth century forger Konstantinos Simonides: see, for example, Canfora 2008; *Id.* 2011; and, for a comprehensive list of publications denying the authenticity of the papyrus, *Quaderni di Storia* 74 (2011), 238-241. But there is a growing scholarly consensus, particularly outside of Italy, that the papyrus should be regarded as an exceptional ancient survival rather than a modern forgery. Among the most convincing proponents of this view are D'Alessio 2009, 30-34; *Id.* 2012, 292-309; Hammerstaedt 2009a, 323-337; *Id.* 2009b, 82-103; and Gallazzi and Kramer 2012, 257-281. Suffice to say, this chapter inclines to the view that the papyrus is indeed ancient.

The chapter begins by contextualising the illustrations of the *verso*, through discussions of the contents of the *recto* of the papyrus, the date of the artefact, and the original configuration of its surviving fragments. This process of contextualisation will introduce some interesting connections between P.Artemid. and the works of art studied in previous chapters, and will demonstrate that the extravagant interpretation of the function(s) of the papyrus proposed in the *editio princeps* simply cannot be substantiated. Attention will then shift to the *verso* illustrations themselves. After discussing the iconography and disposition of the individual vignettes, the notion that the animal drawings should be connected to the text on the *recto* of the papyrus will be explored, laying the foundations for subsequent discussions concerning the relationship between these drawings and a body of zoological and paradoxographical literature surviving from antiquity. As we shall see, the *verso* illustrations attest to an intellectual climate in which stories, reports and *topoi* had a tangible impact on the ways in which animals were described and represented, and in which real and fantastical animals might happily co-exist. The chapter concludes with a discussion of the function of the artefact during antiquity, and how it contributes to the picture of Hellenistic natural science presented in the first half of this thesis.

II. Re-constructing P.Artemid.

The original provenance of P.Artemid. is entirely unknown. During the 1980s, the fragments of the document were painstakingly extracted from a lump of recycled papyrus resembling some kind of *papier mâché*, described as a "Konvolut" by the editors, which is now known only from a single photograph (Fig. 72).[455] This Konvolut was acquired by the Armenian-German

[455] For a convincing refutation of Silio Bozzi's theory (2009, 1-46) that this photograph is a modern counterfeit, see Baumann 2012, 231-255.

antiquities dealer Serop Simmonian, who claims to have transported it from Egypt in 1971, shortly – and conveniently – before the UNESCO convention of 1972, which banned such exports.[456] While the function of the Konvolut has been disputed, it is usually connected with the funerary sphere.[457]

Fifty or so fragments of P.Artemid. were extracted from the Konvolut, and were found to belong to four independent sections of the document, which are distinguished by their diverse contents on the *recto* (front side). Section A contains, from left to right, drawings of two bearded heads, aligned vertically (Fig. 73); and three fragmentary columns of Greek prose (designated cols. I-III), containing an otherwise unknown encomium of the discipline of geography. Section B contains a small section of a map. Section C contains, from left to right, a large but unfinished map (Fig. 74); two columns of Greek prose (cols. IV-V), containing a description of Spain (Fig. 75); and twenty-three separate drawings of hands, feet, and beardless heads (Fig. 76). Section D contains one further drawing of a head.

The relative arrangement of these four sections proposed in the *editio princeps* was founded on the description of Spain written on Section C. This description begins (*ll.* 1-14) with an account of the geographic extent of Iberia, the name of this territory, and its division into two Roman provinces. Significantly, these lines are very close to a fragment from Book II of the (now lost) *Geographoumena* of the Hellenistic geographer Artemidoros of Ephesos, preserved for us by Constantine VII Porphyrogenitus (A.D. 905 – 959),[458] who himself drew on an intermediate version of the text recorded by the sixth century lexicographer Stephanos of

[456] On the twentieth century history of the papyrus see D'Alessio 2009, 27-28; Van Minnen 2009, 65.
[457] D'Alessio 2009, 28; Parsons 2009a, 28; Obbink 2009, 14-16; Rathbone 2012, 442. Obbink doubts that the 'Konvolut' was used as mummy cartonnage on the grounds that the use of papyrus texts to make cartonnage ended before the first century A.D., but D'Amicone et al (2009, 173-191) demonstrate that the Turin Museum's second-century A.D. mummies excavated at Assiut (ancient Lycopolis) are made of cartonnage from papyrus texts.
[458] Kramer 2001, 116; Billerbeck 2009, 65.

Byzantium.[459] The correspondence is virtually exact, and there can be little doubt that the passage is a quotation from Artemidoros' *Geographoumena,* accounting for the modern nomenclature of the papyrus. Our knowledge of Artemidoros himself is relatively murky.[460] We are told by Markianos of Herakleia, who wrote an *Epitome* of the *Geographoumena* in the fourth or early-fifth century A.D., that Artemidoros' *floruit* fell during the 169th Olympiad: that is, in 104 – 101 B.C.[461] The precise significance of this date has been much discussed in recent times. According to one school of thought, this is when the geographer undertook a diplomatic journey to Rome on behalf of his native Ephesos.[462] According to another, the date simply refers to his literary *acme*.[463] In either case, it is clear that Artemidoros wrote his *Geographoumena* in the late-second or early-first century B.C.

Taking their lead from this quotation, the editors proposed that P.Artemid. was originally conceived as an early Roman *de luxe* copy of Book II of Artemidoros' *Geographoumena*. According to this reading, the unknown text on Section A represents the *proem* of Book II, and was followed by a map of Iberia, the territory described in the extract from the *Geographoumena* in Section C. A map was indeed drafted, but the project was abandoned for reasons that remain unclear. This interpretation, which assumes the unity of the two passages of text and the map separating them, led the editors to restore the order of the sections of P.Artemid. as (from left to right) Section A – Section B – Section C. To explain the remaining contents of the papyrus, the editors proposed that the artefact enjoyed two subsequent "lives" upon the abandonment of the *de luxe* book project. Firstly, they argue, the animal drawings were added to the *verso* in an artist's studio, where they would have served as a

[459] Hammerstaedt (2012, 309-324) has convincingly argued that Stephanos' account of Iberia was derived (albeit through "indirect transmission") from the original text of Artemidorus, as opposed to from the considerably later *Epitome* of Markianos of Herakleia.
[460] For the life and work of Artemidoros see now Canfora 2007, 3-29; Lenus 2008, 279-288; Gallazzi, Kramer and Settis 2008, 98-113; Schiano 2010a, *passim*; Engels 2012, 139-155; Panichi 2013, 101-106.
[461] Markianos of Herakleia, *Epit. Per. Menipp.* I, 3 = *GGM*, I, 566.
[462] Alonso-Núñez 1980; Knibbe 1998, 102, n. 213; Canfora 2007, 3-11; Lenus 2008, 279-288. For Artemidoros' embassy to Rome see Strab., XIV 1, 26.
[463] Gallazzi, Kramer and Settis 2008, 99-101, 106-107; Engels 2012, 142.

"pattern book" for producing images in other media such as mosaics and wall paintings. Secondly, the blank spaces on the *recto* – including the space identified as a *kollema* (blank space) adjacent to the left hand margin of Section A – were filled with anatomical drawings, which were perhaps inspired by ancient sculpture.[464]

Uncompromising and bold, this theory of "three lives" successfully accounted for the diverse contents of the papyrus. But it was not long before serious reservations were expressed about its validity. These centred on the text of Section A, identified by the editors as the *proem* to Artemidoros' Book II. Simply put, this passage is markedly different to the extract from the *Geographoumena* in Section C in language and style, being characterised above all by its "lack of connective particles, odd word order, repetitive vocabulary and pleonasms",[465] as well as the consistent misspelling of several important terms.[466] The editors explained this inconsistency with reference to the different function of the *proem* compared to the rest of Book II, and by proposing that it represents an unusual example of an "Asianic" style of prose.[467] To other eyes, however, the passage has appeared as though it was composed by someone who was not in complete control of proper written Greek: certainly not Artemidoros of Ephesos.[468] Furthermore, the irregular layouts and inconsistent dimensions of the text columns would seem strange in the context of luxury book production.[469]

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464 Adornato 2008b, 469-473, 489-493; *Id.* 2009, 53.
465 Rathbone 2012, 445.
466 D'Alessio 2009, 28, 34, 41; Janko 2009, 403; Parsons 2009a, 27; Condello 2009, 55-82. The eccentricity of the passage is reflected by the striking variety of interpretations that it has precipitated: contrast, for example, Tosi 2009, 25-54 with Porciani 2010, 207-231. For a summary of some of the other scholarly positions, see Schiano 2010b, 240-241.
467 Gallazzi, Kramer and Settis 2008, 113-115, 134-139.
468 Schiano 2010b, 241: "Gallazzi-Kramer's theory of Artemidoros' authorship of the whole text actually appears to be a minority position."
469 Parsons 2009a, 29-30; Janko 2009, 403.

The map of the *recto*, meanwhile, is similarly enigmatic: the absence of place names and labels means that the identity of the represented region is far from certain, and we remain ignorant of its original size, its scale, and the significance of many of its symbols.[470]

With the argument bubbling ever more ferociously, the issue was clarified by two scholars who independently demonstrated that the arrangement of the sections proposed by the editors is certainly incorrect.[471] The more scientific contribution was that of Giambattista D'Alessio,[472] who recognised that the ink of the text and drawings on the *recto* left offset prints on the *verso*, and that these mirror prints – many of which were overlooked or misinterpreted by the editors – can be used to link the right hand margin of Section C with the left hand margin of Section A. As a result, the material evidence necessitates that the sequence of sections on the *recto* ran Section C – Section A – Section B, rather than Section A – Section B – Section C. D'Alessio also demonstrated that a small fragment depicting a drawing of a head on the *recto* and a hyena-wolf on the *verso* (V1), known now as Section D, had been erroneously appended to section C by the editors, and that it was originally positioned to the right of Section A on the *recto*. He also showed – on the basis of the direction in which the distance between the original and offset images increases, and the actual increase in these distances – that the extant portion of P.Artemid. (*c.* 250 cm long and *c.* 32.5 cm high) was originally preceded by another section at least as long to the left of Section C on the *recto*.

This radical re-arrangement has terminal implications for the editors' interpretation of the original function of P.Artemid. Most importantly, the passage of a text identified as the *proem* of Book II of the *Geographoumena* was demonstrably transcribed *to the right* of the extract from

[470] For the difficulties associated with the map, see Talbert 2009, 57-64.
[471] D'Alessio 2009, 27-43; Nisbet 2009, 19-22; cf. Tarte 2012, 325-336.
[472] D'Alessio 2009, 27-43.

Book II, and was separated from it by a space filled with anatomical drawings. These drawings were themselves contained within a single space on the *recto*, and were not, therefore, an afterthought stemming from a later "life" of P.Artemid. but a "substantive item in the sequential use of the roll".[473] It follows that the text of Section A simply cannot be an "Asianic *proem*" written by Artemidoros, and, in light of its stylistic and linguistic idiosyncrasies, it seems safest to conclude that it was composed by another, less eloquent writer.

There are also important implications for our appreciation of the animal drawings on the *verso*. Firstly, the realisation that the extant portion of P.Artemid was originally preceded by another section indicates that the surviving animal vignettes on the *verso* may represent only a portion of what there once was. Secondly, the re-arrangement of the surviving sections of the *recto* necessitates a corresponding alteration of the sequence of material on the *verso*, which therefore ran Section D – Section B – Section A – Section C, from left to right.[474] Although the contents of the *verso* differ from those of the *recto* in the sense that they are thematically and stylistically unified, the re-configuration of the relative order of drawings has had a significant bearing on scholarly perceptions of the logic underpinning their arrangement, as we shall see later on in this chapter. Thirdly, and finally, the supposition that the drawings of the *verso* should necessarily be attributed to a later phase (or indeed "life") of the papyrus needs to be re-considered. From a methodological perspective, it is essential to investigate the possible connections between the different elements of the papyrus before reconstructing independent and unrelated phases of use during antiquity.

III. Dating and Contextualising P.Artemid.

[473] Parsons 2009b, 22.
[474] For this point see Pajón Leyra 2012a, 354.

The presence of an extract from Book II of the *Geographoumena* provides a definitive *terminus post quem* for the Artemidoros Papyrus, since this text is known to have been written during the late-second or early-first century B.C. The precise chronology of the document remains ambiguous, but there are several compelling reasons to believe that it should be dated to the late-Ptolemaic or early-Imperial period. Most tellingly, the papyrus was tested with the Carbon-14 method, which dated it to between 40 B.C. and A.D. 130 with a 95.4% level of confidence.[475] The chemical composition of the ink, meanwhile, is consistent with the carbon-based inks which remained standard on papyri until the third century A.D. [476] From a palaeographical standpoint, the script of the *recto* is consistent with other hands of the late-Ptolemaic and early-Roman periods.[477] Some scholars have proposed that a late-first century B.C. date is most likely on the basis of palaeographic parallels, but a shortage of adequate comparanda from the first century A.D. means that a later chronology remains plausible.[478]

Broad support for this chronology is provided by twenty-five administrative documents that were extracted from the Konvolut together with the fragments of P.Artemid. These documents can be dated between the reigns of Nero and Domitian (A.D. 54 – 96),[479] and provide a fascinating insight into the lives of Alexandrian citizens during this time, including their admission to the register of Alexandrian *epheboi*, their legal affairs in Alexandria, and their property in the Antaeopolite *nome*, situated some 500 km south of the old Ptolemaic royal capital. They also impact upon the question of the papyrus' authenticity, when we consider

[475] Gallazzi, Kramer and Settis 2008, 66-71; Parsons 2009a, 28; D'Alessio 2009, 28.
[476] Gallazzi, Kramer and Settis 2008, 71-78. The ink, unlike the papyrus, has not yet been subject to C^{14} testing.
[477] Gallazzi, Kramer and Settis 2008, 90-91; Parsons 2009a, 30-31; Obbink 2009, 12; Van Minnen 2009, 168-169; Strassi 2009, 16-22; Delattre 2009, 7-14; contra Wilson 2009, 23-26.
[478] Parsons 2009, 30-31; Strassi 2009, 16-22; Obbink 2009, 12.
[479] Gallazzi, Kramer and Settis 2008, 60-62; Parsons 2009a, 28; *Id.* 2009b, 20. A number of these documents have now been published: see Gallazzi and Kramer 2014, 117-153.

that such prosaic documents would be very difficult to forge and almost impossible to sell at a profit.[480]

The details concerning the affairs of Alexandrian citizens may also provide a glimpse of the social and cultural milieu in which P.Artemid was conceived, even if the original provenance of the document remains completely unknown. Indeed, analogy with these administrative documents would suggest that the Artemidoros Papyrus originated in an environment where the cultural currents of the Ptolemaic royal capital circulated freely, and this conjecture finds good support from the contents of the document itself. Most notable, in this respect, are the animal sketches of the *verso*, which are clearly reminiscent of the representations of animals in the painted frieze of the Tomb of Apollophanes at Marisa and the Nile Mosaic at Praeneste, compositions whose conceptual origins undoubtedly lay in Hellenistic Alexandria. The extract from Book II of Artemidoros' *Geographoumena* on the *recto* of the papyrus may also be significant in this respect. An Ephesian by birth, Artemidoros is known to have spent time in Alexandria, thanks to Diodoros Siculus' testimony that he resided in Egypt,[481] and Strabo's report that:

> "the rhinoceros, is but a little short of the elephant in size, not, as Artemidoros says, "in length to the tail" (although he says that he saw the animal at Alexandria), but falls short, I might almost say, only about … in height,[482] judging at least from the one I saw…"[483]

Both the date and length of Artemidoros' residency in Alexandria have been much debated in recent times, together with just how much of the *Geographoumena* he composed during his

[480] Parsons 2009a, 28; Rathbone 2012, 442.
[481] Diod. Sic., III 11, 2.
[482] The measure of the difference in height is missing from the manuscripts. Artemidoros must have given it in terms of either cubits or span.
[483] Strab., XVI 4, 15 = Artemidoros fr. 97 Stiehle.

stay.[484] In truth, our evidence is insufficient to justify definitive answers to these questions, and it is surely more profitable to fasten attention on what we *do* know about Artemidoros' relationship with the Ptolemaic royal capital. Strabo's comment suggests that Artemidoros saw and studied animals in Alexandria,[485] and it seems likely that he was well acquainted with the interest in the natural world that blossomed in the "city by the sea"[486] from the third century B.C. onwards. It is also clear that Artemidoros studied texts written by scholars who had been based in Alexandria, even if we accept that these works may have been available for consultation elsewhere. Particularly important, in the context of this thesis, is the realisation that much of Artemidoros' account of Aethiopia and Arabia in Book Eight of the *Geographoumena* seems to have been derived – in places virtually word-for-word – from the earlier work of Agatharchides of Knidos.[487] Most notably, his account of the animals of Aethiopia, preserved for us by Strabo,[488] constitutes a paraphrase of Agatharchides' excursus on the fauna of this region.

We saw in Chapter Three that there are a number of interesting correspondences between Agatharchides' zoological excursus and the taxonomic representations of animals in the upper register of the Nile Mosaic at Praeneste. These correspondences facilitated the conclusion that some of the taxonomic representations should be traced back to sources that originated in the same cultural milieu as the *hypomnemata* and "eyewitness" accounts consulted by Agatharchides. Seen against this background, it is striking that the taxonomic animal representations on one side of P.Artemid. were juxtaposed with a passage of text written by an author who demonstrably plagiarised Agatharchides' treatise on the other. This opens up

[484] For contrasting conclusions see Lenus 2008, 282-286 and Gallazzi, Kramer and Settis 2008, 105-107.
[485] Gallazzi, Kramer and Settis 2008, 105-106.
[486] So named by "the Potter's Oracle": Austin 2006, no. 328 l. 35.
[487] Stiehle 1856, 222; Bunbury 1883, 62-63; Fraser 1972a, 549-550; Burstein 1989, 22; Warmington and Hornblower 1996, 182; Schiano 2010a, 30; Engels 2012, 147.
[488] Strab., XVI 4, 15-16 = Artemidoros frs. 97 and 98 Stiehle.

the possibility that the *recto* and *verso* of this remarkable roll were defined by greater internal coherence than its editors had originally assumed.

IV. Artemidoros, Agatharchides, and the *Verso* of P.Artemid.

It was Stefano Micunco, one of the proponents of the view that P.Artemid. is a modern forgery, who first recognised that several of the animal vignettes on the *verso* of the papyrus depict animals that were certainly described by Artemidoros in Book Eight of his *Geographoumena* (paraphrasing the earlier zoological excursus of Agatharchides of Knidos).[489] The animals described by Artemidoros include elephants, lions, leopards, rhinoceroses, giraffes, sphinxes, "dog-heads", *kepi*, carnivorous bulls, hyenas known as κροκούττας, and giant snakes. Several of these creatures have visual analogues on the *verso* of P.Artemid., notably in the vignettes depicting a giraffe (V21) (Figs. 77, 78),[490] a leopard(ess) (V19) (Figs. 79, 80),[491] a hyena (V02) (Figs. 81, 82),[492] and those depicting gigantic snakes (V16, V22, V25) (Figs. 83, 84).[493] In addition to these, however, two correspondences are particularly striking. In separate passages, Artemidoros tells us that:

> "The country abounds in… lions called ants [λέουσι τοῖς καλουμένοις μύρμηξιν], which have their genital organs reversed, and are golden in colour, but are less hairy than those in Arabia."[494]

> "Artemidoros also speaks of serpents thirty cubits in length which overpower elephants and bulls; and his measurement is moderate, at least for serpents in this part of the world…"[495]

[489] Micunco 2008a, 183-188; *Id.* 2008b, 243-246.
[490] Gallazzi, Kramer and Settis 2008, 391-393; Kinzelbach 2009, 64-65.
[491] Gallazzi, Kramer and Settis 2008, 383-387; Kinzelbach 2009, 59-61.
[492] Gallazzi, Kramer and Settis 2008, 330-332; Kinzelbach 2009, 16-17.
[493] Gallazzi, Kramer and Settis 2008, 372-377, 394-399, 406-411; Kinzelbach 2009, 47-54, 66-71, 75-76.
[494] Strab., XVI 4, 15.
[495] Strab., XVI 6, 16 = Artemidoros fr. 98 Stiehle.

Remarkably, both of these extracts have visual counterparts in the drawings on the *verso* of the papyrus. One of the vignettes (V22) depicts a large feline accompanied by the label "μύρμηξ" (Figs. 85, 86),[496] while another (V16) shows a violent encounter between an elephant and a large snake, labelled "στειρὸς ἐλέφας" ("sturdy elephant") and "χέρσυδρος ὄφις" ("serpent snake") respectively (Figs. 87, 88).[497] The correspondences seem too close to be coincidental, and we are left with little choice but to conclude that the iconography of the *verso* was linked, in some way, to the textual tradition that encompassed Artemidoros' *Geographoumena* and Agatharchides' zoological excursus. This realisation, coupled with the presence of extract from Book Two of the *Geographoumena* on the *recto* of P.Artemid., confirms that the two sides of the papyrus were thematically connected, and casts further doubt upon the editors' assumption that the animal illustrations of the *verso* should necessarily be attributed to a later phase of re-use.

Of course, this all begs the question of the extent of the relationship between the illustrations of the *verso* and the textual tradition encompassed by Artemidoros' *Geographoumena*. The only substantive attempt to engage with this issue has been made by Irene Pajón Leyra, who argued – in the wake of D'Alessio's re-configuration of the sequence of the sections of the papyrus – that the vignettes of the *verso* constitute a "geographical zoology" modelled directly on Artemidoros' *Geographoumena*.[498] According to this interpretation, the largest vignettes of the *verso* of the papyrus were organised from left to right in a sequence defined by the geographical origins of the creatures that they depicted, starting in Libya, progressing eastwards through Egypt and Aethiopia, and finishing in India. This order was conditioned by

[496] Gallazzi, Kramer and Settis 2008, 394-399; Kinzelbach 2009, 66-71.
[497] Gallazzi, Kramer and Settis 2008, 372-377; Kinzelbach 2009, 47-54.
[498] Pajón Leyra 2012a, 336-357.

Books VII to IX of the *Geographoumena*, which described these territories in an identical order. The theory can be represented schematically, as follows:

Libya → **Egypt →** **Aethiopia →**
lynx vs. wild goat (V38) – *xiphías* vs. "saw tuna" (V9) – snake vs. elephant (V16) – griffin vs.

India →
leopardess (V19) – giraffe (V21) – *myrmex* vs. snake (V22) – leopard vs. snake (V25) – tiger (V31)

This is a bold and innovative hypothesis, but one that has too many parts missing to be truly sustainable. Although it is possible that the order Libya-Egypt-Aethiopia-Arabia-India reflects the original structure of Artemidoros' Books Seven to Nine,[499] we remain ignorant of the extent to which Artemidoros included descriptions of animals in the parts of his treatise dealing with Libya, Egypt, Arabia and India, since nothing akin to his description of Aethiopian fauna has been preserved in relation to these territories. In other words, Pajón Leyra's theory requires us to believe that the organisation of the zoological drawings on the *verso* of P.Artemid. was dictated by the structure of the *Geographoumena*, despite the complete absence of evidence for any zoological content in the majority of text concerned. This is problematic, especially when we consider that only *some* of the Aethiopian animals described by Artemidoros in Book Eight of the *Geographoumena* were depicted on the papyrus: indeed, the rhinoceroses, sphinx-monkeys, dog-heads and *keboi*, and carnivorous bulls that he mentions are all conspicuously absent.

Even so, the central tenet of the theory would remain intact if it could be shown that the vignettes of the *verso* were disposed in a carefully conceived geographical sequence. Again, however, there is room for doubt. Most notably, Pajón Leyra's geographical contextualisation

[499] Pajón Leyra 2012a, 345; cf. Stiehle 1856, 216-228.

of the lynx-goat,[500] *xiphías*-"saw-tuna",[501] and leopard-snake[502] vignettes in Libya, Egypt and India respectively fails to convince. The case of the *xiphías*-"saw-tuna" vignette (Figs. 89, 90) is particularly instructive. Conceding that the "saw tuna" is impossible to locate geographically, Pajón Leyra places the vignette in Egypt by comparing the *xiphías* with representations of the same creature in the Nile Mosaic at Praeneste and in several Pompeian wall paintings.[503] The analogy with the Nile Mosaic is particularly useful, thanks to the corresponding identifying label and similar morphology of the specimen in this composition (Figs. 55, 56). Crucially, however, the *xiphías* of the Nile Mosaic is represented in its upper iconographic register, which – as the dry, rocky landscape and the animals populating it make clear – was designed to represent Aethiopia, and not Egypt. For this reason, it seems more rational to locate the *xiphías*/"saw tuna" vignette in Aethiopia, much like the snake/elephant, griffin/leopardess, giraffe and *myrmex* vignettes positioned to its right. Pajón Leyra's attempt to characterise the hyena (V2) adjacent to the *xiphías*/"saw tuna" group (Figs. 81, 82) as an Egyptian animal thanks to "its presence in the Nile-focused Palestrina mosaic" falls short for the same reason:[504] it too appears in the Aethiopian register of the Italian mosaic, and was explicitly identified by Agatharchides and Artemidoros as one of the animals that inhabited Troglogytic country.[505]

It seems clear, therefore, that the theory that the *verso* of P.Artemid. constituted a "geographical zoology" that was directly modelled on Artemidoros' *Geographoumena* simply cannot be substantiated. Still, two important issues emerge from this discussion. Firstly, the notion of a "geographical zoology" introduces the possibility that the vignettes of the *verso* were disposed in a rational or ordered sequence that was determined by an organisational

[500] Ibid, 348.
[501] Ibid, 347.
[502] Ibid, 348-351.
[503] Notably in the Casa di Maius Castricius and the Casa del Medico.
[504] Pajón Leyra 2012a, 348.
[505] Agatharchides fr. 78 Burstein; Artemidoros fr. 98 Stiehle.

criterion or key of some description. Secondly, it is clear that the relationship between these vignettes and the textual tradition encompassed by Artemidoros' *Geographoumena* (and Agatharchides' zoological descriptions) requires further scrutiny. To tackle these issues, it will be necessary to consider the layout and iconography of the *verso* illustrations in greater detail.

V. Analysing the *Verso* of P.Artemid.

The surviving fragments of the *verso* of P.Artemid. preserve traces of 40 vignettes featuring representations of animals accompanied by identifying labels composed in Greek. The quality of the illustrations is variable, but most seem very sketchy in appearance, and appear to have been executed quickly.[506] The preservation of the vignettes also varies: in some cases they are more or less completely intact, while in others the animal representation(s) and/or identifying label(s) are partially or entirely missing. In total, traces of representations of some forty-seven animals survive. The majority of the vignettes depict individual animals, but seven of them show two or more animals configured in an "anecdotal or narrative relationship".[507] The *xiphías*-"saw tuna" vignette, discussed briefly above, provides one good example of such a narrative group. In all cases, the draughtsman has added a cursory indication of background, land or water as appropriate. These rudimentary backgrounds underscore the isolation and independence of the vignettes, which are spatially and proportionally unconnected to each other.

Besides the labels that accompany the individual animals, the only text on the *verso* is supplied by a general title, positioned towards the top right hand corner of Section C (Fig. 91). At first sight the peripheral position of this title seems odd, but it is important to recall Giambattista

[506] Settis 2008, 88; Obbink 2009, 17; Lehmann 2012, 269.
[507] Elsner 2009, 48.

D'Alessio's calculation that the extant portion of P.Artemid. was originally preceded by another section at least as long to the left of Section C on the *recto*, meaning that it was originally followed by another section at least as long *to the right* of this section on the *verso*. Accordingly, the title may originally have been positioned in roughly the centre of the collection of animal illustrations. The text is restored by the editors as follows:

ζῶα] τὸν Ὠκεανὸν
οἰκοῦν]τα καὶ πτηνὰ
κα[ὶ πεζ]ὰ [κα]ὶ κήτη[508]

"animals that inhabit the ocean, animals with wings, with feet and sea monsters"[509]

This reading has recently been challenged,[510] but enough of the text is preserved to support the view that it referred to the division of the animal kingdom into different classes of species, perhaps conforming to the traditional Aristotelian division of all creatures into aquatic, flying and terrestrial beings.[511] Crucially, however, the title also seems to resonate with the arrangement of the vignettes on the papyrus.[512] Viewing the *verso* in its entirety, the majority of representations of birds are positioned towards the top of the papyrus roll, the majority of representations of fish are positioned towards the bottom of the roll, and the majority of representations of terrestrial animals are positioned somewhere in between (Fig. 92). While it is true that several vignettes break with this pattern, perhaps owing to spatial constraints, a sufficient number conform to suggest that the general title established a divisional framework that was reflected in the arrangement of the representations of animals.

508 Gallazzi, Kramer and Settis 2008, 425-426.
509 Pajón Leyra 2012a, 340.
510 Pajón Leyra 2010, 132-135; *Id.* 2012a, 340-345.
511 Gallazzi, Kramer, and Settis 2008, 312 n. 7; Pajón Leyra 2012a, 341.
512 Van Minnen 2009, 173-174; contra Kinzelbach 2009, 9.

Turning to the animal sketches themselves, we observe a now familiar juxtaposition of real and fantastical creatures.[513] This binary classification is not exact, since some of the represented creatures – including many of the fish and several of the birds – combine realistic features with strong elements of caricature, and seem to bridge the gap between reality and fantasy,[514] while others are so sketchy that it is very difficult to discern the extent of their basis in reality. Despite this ambiguity, at least five of the represented species are demonstrably fantastical: the "panther-crocodiles" (V3) (Figs. 93, 94), the *xiphías* (V9) (Figs. 89, 90), the "saw tuna" (V9) (Figs. 89, 90), the griffin (V19) (Figs. 79, 80), and the *myrmex* (V22) (Figs. 85, 86). Three of these five creatures find parallels in the compositions analysed in Chapters Two and Three of this thesis: the griffin in the painted frieze of the Tomb of Apollophanes at Marisa (Fig. 17) and the border of the hunt mosaic at Shatby (Fig. 30), and the *xiphías* and "panther-crocodiles" in the Nile Mosaic at Praeneste (Figs. 55, 56, 60, 61).

Another point of contact with the Nile Mosaic is supplied by the morphological inaccuracies of many of the *real* animals represented on the *verso* of the papyrus. As well as the caricatured representations of fish and birds, we might mention the wild ram (V4), which is depicted with four horns instead of two, and with a strangely elongated neck, an absurdly low back, and a disproportionately long tail (Figs. 95, 96). Other examples include the Egyptian goose (V8), whose thin, elongated neck and long, curving beak cannot be reconciled with reality (Figs. 97, 98); the elephant (V16), whose dynamic body posture and hock joints recall those of less sturdy quadrupedal mammals (Figs. 87, 88); and the giraffe (V21), whose implausibly thin neck, thick-set rear legs and hastily rendered spots all detach it from real life specimens (Figs. 77, 78).[515] It is possible that some of these inaccuracies were the product of the modest level of artistry achieved on the *verso*, but once again it seems very unlikely that these

513 Ragnar Kinzelbach's view (2009, *passim*; *Id.* 2010) that all or most of the vignettes were modelled on real life animals rests on no substantive evidence.
514 Elsner 2009, 48.
515 Meyboom 2011, 95-96.

representations originated in the context of close observation of animals kept in captivity.

Where then did these representations originate? We saw in Chapter Three that the taxonomic representations of animals in the Nile Mosaic may have originated in the same cultural milieu as the descriptions of the same species transmitted by Agatharchides of Knidos, and in this light it seems sensible to return to the two vignettes of the *verso* that exhibit particularly striking correspondences with the surviving portions of Agatharchides' zoological excursus and Artemidoros' *Geographoumena*. As we have seen, one of these vignettes (V16) depicts a confrontation between an elephant and a giant serpent (Figs. 87, 88). In their accounts of the enmity between these creatures, Agatharchides and Artemidoros referred to the serpent "overpowering" the elephant, and the fight scene on P.Artemid. clearly embraces this power dynamic.[516] The serpent has coiled its lower half around the elephant's torso, as though squeezing the life from its chest, and has positioned its upper half in a domineering position above the head of its opponent, opening its jaws to reveal the sharp teeth with which it will soon deal a decisive blow. The elephant, for its part, is bounding from right to left, desperately attempting to escape its aggressor. Here the correspondence between text and image seems close, and the possibility of both encompassing a common *topos* seems strong, especially when we consider the continued popularity of the subject in later Roman art.[517]

The vignette depicting a *myrmex* ("ant-lion") battling a snake (Figs. 85, 86) is somewhat more complicated. According to Agatharchides and Artemidoros, the salient characteristics the *myrmex* were its golden colour, its "reversed" genitals, and its lack of hair compared to lions in Arabia. Unfortunately, it is very difficult to assess the extent to which these features were conveyed in the representation of the *myrmex* on P.Artemid., since the vignette provides no

[516] Gallazzi, Kramer and Settis 2008, 372-377; Kinzelbach 2009, 47-54.
[517] Mielsch 1986, 754-757; *Id.* 2005, 50-59.

indication of the creature's colour, the papyrus is damaged in the area covering its genitals, and there is no depiction of an Arabian lion with which to compare its hairiness. More intriguing is the observation that the depiction on the papyrus incorporates several conspicuous physiognomic features that were not mentioned by Agatharchides and Artemidoros in their descriptions of the animal. Most notably, its coat is spotted in the manner of a leopard's, two small horns protrude from its skull, it has two magnificent wings emanating from its shoulders, and its tail has a tasselled tip like that of a donkey. In truth, we would hardly have recognised this fantastical animal as the *myrmex* mentioned by Agatharchides and Artemidoros had its accompanying identifying label not been preserved, and this raises important questions concerning the scope and nature of the relationship between the textual and visual traditions. The female *onokentauros* ("ass-centaur") depicted in the upper register of the Nile Mosaic (Figs. 57, 59) provides a useful parallel, since its appearance is very different from that implied by the description of this creature composed by Pythagoras, the Ptolemaic admiral whose "eyewitness account" was certainly consulted by Agatharchides.[518]

Clearly, then, the elephant-serpent and *myrmex* vignettes of P.Artemid present something of a contrast: the former communicates a *topos* that was reported in an identical manner by Agatharchides and Artemidoros, while the latter overlaps with the accounts of these writers in subject matter but not in detail. This dichotomy is important, since it highlights the dangers of assuming a uniform relationship between the visual and textual traditions, and of generalising when assessing the origins of the animal illustrations on the *verso* of the Artemidoros Papyrus. The most that we can say is that *some* of the illustrations can be connected with descriptions and *topoi* transmitted by the surviving textual tradition, and that the others probably originated in a comparable cultural and artistic milieu. It follows that

[518] Ael., *NA.*, VII 9; cf. Steinmeyer-Schareika 1978, 79-80.

scholarly attempts to forge direct connections between the textual and illustrative traditions that are not supported by our surviving evidence should be rejected. In particular, Paul Meyboom has twice argued that the *xiphías* creature depicted in P.Artemid. and the Nile Mosaic at Praeneste represents the carnivorous bull described by Agatharchides and Artemidoros,[519] despite the fact that all of our available evidence suggests that these two creatures were perceived as being markedly difference in appearance.[520] To my mind, the editors' conjecture that the fragmentary vignette depicting the head of a horned bull (V35) (Figs. 99, 100) *may* represent the carnivorous bull seems much more sensible.[521]

In the case of the *myrmex*, the lack of correspondence between the visual and textual traditions simply demonstrates that individual animals could be described and depicted in a variety of ways during the Hellenistic period. This conclusion is hardly surprising when we consider the different ways in which many *real* animals were presented in each of the compositions that have been analysed so far in this thesis. But it seems likely that fantastical creatures like the *myrmex* and the *onokentauros* would have been particularly susceptible to this kind of presentational variety, since there was no scope for representations, reports and descriptions to be crosschecked against real life specimens.

In any case, the idiosyncratic representation of the *myrmex*, the casual juxtaposition of real and fantastic animals, and the morphological inaccuracies of many of the real animals all suggest that the illustrations of the *verso* of the Artemidoros Papyrus originated in a cultural and artistic milieu similar to the one in which the animal representations of the Nile Mosaic were conceived: that is, one in which descriptions and depictions of animals were not based upon the close observation of real life specimens kept in captivity; in which stories, rumours,

519 Meyboom 1995, 22-23, 228-229 ns. 22-23; *Id.* 2011, 94-95, 97-98.
520 Gallazzi, Kramer and Settis 2008, 354.
521 Ibid, 437-439.

exaggerations, inaccuracies and contradictory accounts concerning animals circulated freely; and in which the balance of the real and the fantastical was constantly in flux. In the next part of this chapter, an analysis of some of the other vignettes of the *verso* will provide three further insights into this milieu, and so into the scope and nature of Hellenistic zoology.

VI. The *Verso* of P.Artemid. and Aspects of Hellenistic Natural Science

The *verso* of P.Artemid. contains a series of vignettes depicting antagonism between different animal species, two of which find close parallels in our surviving literature. We have already seen that the elephant-serpent vignette embodies a *topos* communicated by Agatharchides and Artemidoros, and the vignette depicting a griffin stealing a leopard cub from its mother (V19) is comparable in this respect, since it exhibits correspondences with a story reported by Timotheos of Gaza concerning a griffin that abducts a tiger cub before being pursued by its mother into the sea.[522] Unfortunately, no texts survive to illuminate the lynx-wild goat (V38) (Figs. 101, 102), *xiphías*-"saw tuna" (V9) (Figs. 89, 90) and leopard-snake (V25) (Figs. 83, 84) vignettes, but it is significant that other narrative groups depicted in the works of art analysed in this thesis *can* be connected to the surviving textual tradition.[523] In the painted frieze of the Tomb of Apollophanes at Marisa, for example, we observe another large snake sinking its fangs into the neck of a bull (Fig. 16), recalling Agatharchides and Artemidoros' account of "serpents thirty cubits in length which overpower elephants and bulls"[524], as well as Megasthenes' description of snakes in India that "grow so large as to be able to swallow stags and bulls whole."[525] A rhinoceros and an elephant were also juxtaposed in this composition (Fig. 18), recalling Agatharchides' and Artemidoros' comparisons of the sizes of these

[522] Timotheos of Gaza, *Gram.*, 9; cf. Pajón Leyra 2012a, 354-356.
[523] Mielsch 1986, 747-763.
[524] Strab., XVI 4, 16 = Artemidoros fr. 98 Stiehle.
[525] Megasthenes ap. Plin., *HN*., VIII 14, 36.

creatures, and their testimony that they were "inclined to fight… for places of pasture."[526] In Section 21 of the Nile Mosaic at Praeneste, meanwhile, a cobra is shown confronting a mongoose, evoking the hostility between these species mentioned by Aristotle and Pliny,[527] which can perhaps be traced back to the work of the third century B.C. author Bolos of Mendes, whose work may have been particularly concerned with oppositions of this kind.[528] The same theme was represented in the tri-partite Nilotic mosaic that decorated the threshold of the *exedra* containing the Alexander Mosaic in the House of the Faun in Pompeii (Fig. 103). We might also mention the giant serpent shown devouring a heron in Section 1 of the Nile Mosaic (Figs. 58, 59), since it recalls an anecdote concerning snakes that "catch and gulp down birds passing over them" that Pliny attributes to the second century B.C. author Metrodoros of Skepsis.[529] Finally, two late Hellenistic fish mosaics from Pompeii included representations of a three-way struggle between an octopus, lobster and moray eel (Figs. 128, 132), which, as we shall see in Chapter Five, recalls a literary *topos* that was transmitted by Aristotle, Pliny and Aelian, among others.[530] There can be little doubt, then, that stories concerning the antagonism between different animal species constituted an important component of Hellenistic zoology, and it is equally clear that these stories were commonly manifested in art and visual culture. Seen against this background, it seems likely that the other narrative vignettes featured on the *verso* of P.Artemid. were connected with familiar stories or *topoi* that have not survived in the historical record.

It is also interesting that several of the fish depicted on the *verso* are equipped with identifying labels that are usually used to designate creatures belonging to different habitats, notably the

[526] Strab., XVI 4, 15 = Artemidoros fr. 97 Stiehle.
[527] Arist., *Hist. an.*, 612a; Plin., *HN*., VIII 88.
[528] Trinquier 2009, 363; cf. Mielsch 1986, 752; *Id.* 2005, 66-71.
[529] Metrodoros fr. 6 ap. Plin., *HN*., VIII 14, 36; Ael., *NA*., II 21; cf. Whitehouse 1976, 11-12, 89 n. 7 Meyboom 1995, 20, 222 n. 3; Mielsch 2005, 81-83; Trinquier 2007, 35-36.
[530] Arist., *Hist. an.*, V 590b; Plin., *HN*., IX 88, 185; Ael., *NA*., I 32; IX 25; cf. Plut*., Mor.*, 978f-979, *De soll. an.,* 27; Oppian, *Hal*., II 253, 257, 389; III 189.

"hare-fish" labelled "λαγω[ό]c" (V05) (Figs. 104, 105),[531] the "falcon-fish" labelled "ἱέραξ" (V11) (Figs. 106, 107),[532] and the "bull-fish" labelled "ταῦροc" (V17) (Figs. 108, 109).[533] These labels may reflect a Greek custom whereby the name of a particular species could be formulated on the basis of its similarity – or indeed opposition – to another animal in terms of morphology or behaviour.[534] The depictions themselves, however, stand out by virtue of incorporating caricatured features inspired by the corresponding animals named in the inscriptions: hence the "hare-fish" has a pair of the sharp incisor teeth typical of hares and rabbits, the "falcon-fish" has a beak-like mouth and two long pectoral fins angled to resemble wings, and the "bull-fish" has two horns.[535] We are reminded of the two fish at the eastern end of the northern frieze of the Tomb of Apollophanes at Marisa, which, although unlabelled, clearly incorporate physiognomic features inspired by the elephant and rhinoceros facing them at the eastern extremity of the southern frieze.[536] In all of these examples, the representation of a particular fish seems to have been conditioned by the appearance of another, non-aquatic animal, and this in turn suggests that Hellenistic zoology catered for the belief that particular birds and terrestrial animals had aquatic analogues living underwater. To our eyes, the depictions of these species seem decidedly unrealistic, but this may not have how they were perceived during antiquity: on P.Artemid. they happily co-exist with other sketchy representations of fish, some of which – including the saw-fish labelled πρίων (V10), the hammer-head labelled ζύγαινα (V18) (Figs. 110, 111), and the uranoscopus labelled οὐρανοσκόπος (V20) – probably had a firmer basis in reality.

Finally, the relationships between the represented creatures and their identifying labels throw up some interesting questions about animal nomenclature in Hellenistic times. In at least one

[531] Gallazzi, Kramer and Settis 2008, 339-340; Kinzelbach 2009, 22-24.
[532] Gallazzi, Kramer and Settis 2008, 358-360; Kinzelbach 2009, 37.
[533] Gallazzi, Kramer and Settis 2008, 378-380; Kinzelbach 2009, 55-56.
[534] Bodson 2005, 459-460; cf. Adornato 2008a, 224-227.
[535] Kinzelbach 2010, 55.
[536] Peters and Thiersch 1905, 95; cf. Avi-Yonah 1993, 790.

instance, the representation of a particular animal is juxtaposed with a name that was more commonly used to denote a species bearing very little resemblance to the depicted creature. A concrete example is provided by an animal resembling a big cat (V06), which is accompanied by the label κάστωρ, a term commonly used to denote the beaver (Figs. 112, 113).[537] In other cases, adjectival labels are employed that seem ill suited to the represented species. Particularly notable is the label reading ὦτος χέρσυδρος, meaning "eared amphibian" or "eared serpent", which accompanied a fragmentary vignette (V24) in which the only animal is a slender creature with long, projecting ears, seemingly a cloven-footed mammal of some description (Figs. 114, 115).[538] These labels are very difficult to reconcile with the representations of animals that they accompany. The easiest solution is to assume that the labels were not, in fact, atypical at the time that the papyrus was produced, and that modern scholars only perceive them as such because of the limited scope of the evidence that happens to have survived from antiquity. This is plausible, especially when we consider the complex range of factors that underpinned the formulation of animal names in the ancient world.[539] Still, it is also possible that these problematic labels had, at some stage, been erroneously assigned to the creatures that they accompanied on the papyrus. Support for this interpretation is supplied by the painted frieze of the Tomb of Apollophanes at Marisa, where, as we saw in Chapter Two, a representation of a lion was erroneously accompanied by the label "ΠΑΝΘΗΡΟC", or "panther" (Fig. 15), and we might also mention the pair of cheetahs accompanied by the label "ΤΙΓΡΙC", or "tiger", in section 7 of the Nile Mosaic at Praeneste (Figs. 51, 52). It is impossible to ascertain the stage at which this mislabelling may have occurred, but this kind of confusion and conflation fits neatly with our picture of a cultural milieu in which exaggeration and distortion were constants in the description and depiction of different types of animal.

[537] Gallazzi, Kramer and Settis 2008, 341-343; Kinzelbach 2009, 25-26.
[538] Gallazzi, Kramer and Settis 2008, 403-405; Kinzelbach 2009, 74.
[539] Bodson 2005, 453-480; *Id.* 2014, 556-578.

There is still work to be done on precisely what the *verso* of P.Artemid. can tell us about natural science in the ancient world, but we have seen that the papyrus attests to the circulation of *topoi* concerning enmity between different types of animal, to a belief in birds and terrestrial animals having aquatic analogues living underwater, and to the happy co-existence of real and fantastical animals in contemporary consciousness. Given the complexity of this picture, it seems very unlikely that all of the designs of the vignettes were realised for the first time on the papyrus itself. This would have entailed an incredible amount of work on the part of the draughtsman, not to mention an intimate knowledge of all of these very diverse aspects of the contemporary interest in the natural world. Rather, it seems much more likely that at least some of the vignettes were modelled on pre-existing representations of animals, which, we assume, were formulated at an earlier stage in response to stories, reports and *topoi*, some of which have been preserved in our surviving literary sources. This model fits neatly with the chronology of P.Artemid., since the roll seems to have been designed long after the practice of depicting animals with identifying labels emerged during the third century B.C. It also raises the important question of why the draughtsman of P.Artemid. decided to compile this collection of sketchy animal drawings in the first place, and what kind of function they were intended to perform.

VII. A Scholarly Function

Ever since the discovery of P.Artemid., the idea that the collection of the drawings on the *verso* originally functioned as some kind of "pattern book" or *cahier d'artiste* has dominated scholarly assessments of the document, and this theory has taken a number of different forms. A minority view, originally proposed by Phillipe Bruneau, holds that the entirety of the *verso* was conceived as a *paradeigma* for a work art in a more grandiose artistic medium: that is,

as a preliminary scale model for a (more detailed) painting or mosaic resembling the upper register of the Nile Mosaic at Praeneste.[540] A more popular view, favoured by both the editors themselves and by several of their critics, holds that the *verso* was in fact a "pattern book" in a truer sense: a repertory of images that could be scaled as necessary and used in the design of *paradeigmata* for works of art in more grandiose media such as mosaics and wall paintings.[541]

As Salvadore Settis has demonstrated, the theory that the *verso* of the papyrus was itself a *paradeigma* for a mosaic or painting is beset with serious problems.[542] Most fundamentally, the individual vignettes are spatially and proportionally unrelated to each other, and it is therefore very difficult to envisage that they were originally conceived as (a model for) a unitary composition.

In purely formal terms, then, the more popular theory that the *verso* served as a "pattern book" makes considerably more sense, but it too has very serious difficulties. The first of these we have already touched on: namely, the mediocre artistic quality of the animal illustrations. It is true that the quality of the surviving vignettes is variable, and that the level of artistry is higher than that seen in many of our surviving papyrus illustrations, such as the illustrated Adventures of Herakles and illustrated Homeric Verses from the Oxyrhyncus collection.[543] But the fact remains that the illustrations of the *verso* appear sketchy and quickly executed, and that the clarity and sophistication of the majority of the drawings is nowhere near high enough to support the view that they could have served as models for the crisp, clean representations of animals in works of art such as the Nile Mosaic at Praeneste, let

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[540] Bruneau 2000, 191-197.
[541] Kramer 2001, 116; Donderer 2005, 62; *Id.* 2005/2006, 82-83; Trinquier 2007, 45; Gallazzi, Kramer and Settis 2008, 317-322; Elsner 2010; *Id.* 2012, 291-292.
[542] Settis 2008, 90-91; Gallazzi, Kramer and Settis 2008, 318.
[543] Available to view online: http://www.papyrology.ox.ac.uk/POxy/VExhibition/daily_life/heracles.html (Labours of Herakles); http://www.papyrology.ox.ac.uk/POxy/VExhibition/daily_life/homeric_verses.html (Homeric Verses); cf. Obbink 2009, 16-17.

alone more detailed representations of animals like those of the late republican fish mosaics of Praeneste and Pompeii.[544] Comparison with these Italian mosaics brings to light another serious flaw with the theory: namely that the illustrations of the *verso* are monochrome, and include no indication of the colours of the represented species. This is significant, since adherence to the "pattern book" theory requires a tacit acceptance that the artists who executed mosaics and wall paintings instinctively knew the colours of all of the species that they chose to represent, or that they were able to ascertain them from a completely independent visual source. To my mind, both of these contingencies seem unlikely.

A final objection to the "pattern book" theory is provided by the relationship of the drawings of the *verso* with the other contents of P.Artemid. As we have already seen, three of the four elements of the *recto* – namely the two passages of text and the mysterious map – were united by their common interest in geography, and there can be little doubt that the animal illustrations of the *verso* also conformed to this overarching theme, since descriptions of weird and wonderful fauna constituted an important part of geographical treatises and related texts (including the work of Agatharchides and Artemidoros) during the course of the Hellenistic period. Recognition of this convergence is important, since it opens the possibility that the illustrations of the *verso* were inspired by – or at least executed in relation to – the other elements of the document, and that they should not necessarily be attributed to a separate "life" of the artefact during antiquity. Indeed, it seems as though the individual(s) responsible for the papyrus aimed at collecting a miscellany or anthology of texts and images, all of which encompassed an overarching theme.[545] In this connection, it is interesting to note that the script of the identifying labels on the *verso* is similar to that of the two passages of text on the

[544] Mielsch 2008, 183: "Selbst ungewöhnlich qualitätvolle Küstlerstudien wie die des neuen Artemidorpapyrus in Privatbesitz waren zur Übermittlung von Gemälden nicht ausreichend."
[545] D'Alessio 2012, especially 303-309.

recto, and that one scholar has argued that they could be from the same hand.[546]

An inevitable question follows: what *kind* of document might contain such an assortment of thematically connected texts and images? Most scholars now agree that we should probably be looking outside of the high cultural plane of *de luxe* book production and/or artistic pattern books for an answer to this question.[547] Even so, the diverse contents of the papyrus mean that its original function is not immediately obvious.

One useful way of approaching the question is to compare the functions of other papyri of a similar date which likewise contain texts and images encompassing a single theme. Two examples are particularly useful in this respect. The first is P.Paris. 1, a roll of *c.* 160 – 150 B.C. from the archive of the Great Serapeion at Memphis and attributed to "recluses" Ptolemy son of Glaukias and his schoolboy brother Apollonios, which contained an astronomical text on the *recto* accompanied by colour diagrams (Fig. 116).[548] The astronomical theme was carried over onto the *verso*, thanks to an iambic acrostic poem referring to the *techne* (or "art") of Eudoxus of Knidos. Several correspondences with P.Artemid. are noteworthy. From a textual perspective, it is clear that the text of the *recto* is not the original Eudoxus, but a paraphrase or summary, which is, in fact, replete with spelling errors, not unlike columns I-III of the *recto* of P.Artemid. From an iconographic perspective, the *recto* contains illustrations which are thematically connected to – but not obviously relevant to – the accompanying text, recalling the loose connection between the text of P.Artemid. and the animal illustrations of the *verso*.[549] And from a compositional perspective, the thematic unity extends to both sides of the papyrus thanks to the acrostic poem on the *verso*. Clearly this papyrus was not intended

[546] The script of the labels on the *verso* is similar to that of the two passages of text on the *recto*: Strassi (2009, 25-27) argues that both could be from the same hand.
[547] Parsons 2009a, 27-33; *Id.* 2009b, 19-27; Obbink 2009, 11-17; Nisbet 2009, 19-22; Strassi 2009, 29-30; Rathbone 2012, 448.
[548] Parsons 2009a, 32-33; *Id.* 2009b, 22-25; cf. Blass 1997, 79-101.
[549] Jones 2009, 345.

for *de luxe* book production or for any other distinguished cultural purpose; rather, it was something resembling a commonplace notebook, composed by an academically interested but intellectually and artistically modest amateur for his own private use.[550] The comparatively "low level" of the document is confirmed by the later re-use of the blank spaces on either side of the acrostic for recording administrative circulars.

The second relevant example is provided by a papyrus from the Fayyum, dated by its contents and its palaeography to the late third-century B.C.[551] Broadly speaking, the papyrus can be divided into two parts. The first consists of a series of syllabic exercises and number sequences, which clearly had a didactic thrust, and which have led to the identification of the document as a schoolteacher's manual. These exercises were separated by drawn representations of architectural elements: light, slender columns with diverse combinations of black and white banding decorating their surfaces (Fig. 117). The second part of the papyrus contained copies of two Ptolemaic court epigrams, one originally displayed on an elaborate fountain monument dedicated to Arsinoë II or III, the other on a monument to Homer consecrated by Ptolemy IV Philopator (r. 221 – 204 B.C.). In this case the thematic connection between text and image is supplied an implicit relationship between the Ptolemaic epigrams and the columns that articulated the teaching exercises. On the one hand, the epigrams reveal that the individual responsible for the papyrus was interested in and/or conversant with the forms of royally sponsored monuments in contemporary Alexandria. On the other hand, the resemblance of the drawn columns to the royal style of architecture described by Kallixeinos of Rhodes in his accounts of the banqueting pavilion of Ptolemy II and the Nile yacht of Ptolemy IV indicate that the former were probably inspired by a contemporary canon of royal architecture, which may also have been articulated in the

[550] Jones 2009, 345: "As a whole the work does not seem to be an adequate index of what astronomers were doing in the early second century, but is probably a fair portrayal of what an educated laysperson knew about the subject."
[551] Smith 2010, 211-221.

monuments mentioned in the epigrams.[552] Once again, then, we are confronted with a thematically unified document that appears to have been comparatively modest in conception, this time with a didactic function.

Analogy with such papyri suggests that the collection of geographical texts and images on P.Artemid. might likewise have had a scholarly or didactic function,[553] but it is important to assess whether or not such an interpretation fits with the content of the papyrus and the cultural context in which it was originally conceived. In relation to the former, we have already seen that the prose of columns I-III of the *recto* is so enigmatic that it appears to have been composed by someone who was not in complete control of proper written Greek. Although it is difficult to assess the identity of this anonymous author on the basis of the text alone, it seems quite feasible that the passage was composed by a young student studying geography or an intellectually modest scholar with a special interest in the field, although we should not rule out the possibility of an individual whose first language was not Greek: an Egyptian priest intent on becoming familiar with literary and artistic ideas typically associated with the cosmopolitan culture of royal or imperial Alexandrian, for example. [554]

In any case, there can be little doubt that geography and paradoxography were important educational topics in Ptolemaic and Roman Egypt, thanks to the chance survival of a series of educational documents pertaining to these disciplines surviving from antiquity.[555] Among these, P.Berol 13044, dated to the second or first century B.C., is perhaps closest to P.Artemid. in date.[556] This papyrus contains the so-called *Laterculi Alexandrini*, a series of educational word-lists, some of which concerned famous men, including lawgivers, painters,

[552] Ath., *Deipnosoph.*, V 196-197; 203-206.
[553] As suggested by D'Alessio 2009, 41-42; *Id.* 2012, 303-309; Nisbet 2009, 21; Leyra 2012, 357; Elsner 2012-391-392; Rathbone 2012, 448.
[554] Rathbone 2012, 448.
[555] Presented by Legras 1994, 165-176.
[556] Diels 1904, 3-16; Legras 1994, 167-169, 172-174; D'Alessio 2012, 304-309; Pajón Leyra 2014, 85-88.

sculptors of gods and men, architects, and engineers, but others of which were geographical in scope, concerning the Seven Wonders of the World, "the largest islands", "the highest mountains", "the longest rivers", "the most beautiful springs", and "lakes".

In light of this contemporary didactic interest in the natural world on the one hand, and the precedents of the "Eudoxus" papyrus and the Fayyum schoolteacher's manual on the other, it seems quite possible that P.Artemid. originally had an educational or didactic purpose, which extended to both sides of the papyrus. The main stumbling block to this interpretation is posed by the images of faces, hands and feet on the *recto*, which do not seem to fit neatly into its overarching geographical-paradoxographical thematic framework. But this difficulty is not necessarily insurmountable. After all, the *Laterculi Alexandrini* combined lists of places and landmarks with lists of sculptors and artisans, demonstrating fields as diverse as geography and the visual arts could happily co-exist within a (didactic) roll of papyrus during the first century B.C.[557] Furthermore, the practice of juxtaposing ostensibly disparate elements in a single papyrus roll was not in itself uncommon: we need only cite the case of the "Eudoxus" papyrus, where administrative circulars were added in blank spaces either side of the acrostic poem on the *verso* at some stage of its existence. This example is particularly revealing, as one of the circulars was written in the same hand as the astronomical paraphrase of Eudoxus' *Techne* on the *recto*: in other words, it is not necessary to posit a separate "life" – in the sense of a different hand and/or context – in order to explain the miscellaneous content of the document. Rather, we have an example of the evolving use of a roll of papyrus within an unchanging cultural *milieu*, and it is not difficult to envisage a comparable process of composition in the case of the Artemidoros Papyrus. The anatomical drawings of the *recto* might simply represent a manifestation of a different interest of the individual(s) responsible for the document's geographical content, which were likewise considered beneficial or

[557] D'Alessio 2012, 309.

desirable in this personal scholarly or didactic context. This interpretation is strengthened by D'Alessio's re-organisation of the surviving sections of the document, according to which the anatomical drawings were a unified element in the sequential use of the roll, rather than an afterthought inserted into its leftover spaces.

VIII. Conclusion

There can be little doubt, I think, that for all of its extraordinary features, the Artemidoros Papyrus was not a high end cultural artefact re-used several times, but simply an assortment of thematically connected texts and images, conceived in the private sphere, possibly with a didactic or scholarly function. In reality the interpretation of the document favoured by the editors has precious little to recommend it, and the animal illustrations of the *verso* appear more like casual sketches than designs to be re-configured in more grandiose artistic media such as mosaics and wall paintings. Even so, the diversity of the surviving vignettes suggests that the individual responsible for their execution drew on pre-existing repositories of animal illustrations, which were presumably formulated in the context of the Alexandrian interest in zoology, paradoxography and the natural world during the course of the Hellenistic period.

From an art historical perspective, we are naturally disappointed that P.Artemid. is not, in fact, a much coveted "missing link", clarifying the ways in which artistic designs were transmitted during antiquity. But recognition of the document's comparatively modest origins is itself significant, as it provides some indication of the extent to which the scientific interest in the natural world permeated Graeco-Egyptian society during the Hellenistic period and beyond. After all, the Nile Mosaic at Praeneste strongly suggests that the trend of depicting exotic fauna with proto-taxonomic identifying labels arose in the uppermost echelons of Alexandrian society, and the painted frieze of the Tomb of Apollophanes of Marisa indicates

that this trend was adopted by influential aristocrats of provinces within the Ptolemaic kingdom. The *verso* of the Artemidoros Papyrus, in contrast, hints at the diffusion of this interest in taxonomy and the natural world down the social – or, at the very least, artistic – spectrum. By the first century B.C., it seems, such drawings of exotic animals were sufficiently accessible and comprehensible that they could be re-produced on papyri for private use, in conjunction with such undistinguished passages of text as the verbose encomium of geography as a science contained in columns I-III of the *recto*. The papyrus offers a unique glimpse of a more popular interest in geography and paradoxography, and a pertinent reminder that ancient visual culture was not confined to the dazzling mosaics and wall paintings that so often demand the attention of archaeologists and art historians.

A useful point of comparison, in this respect, is supplied by a series of Meroitic pots decorated with paintings of giraffes, elephants and other creatures that are known to have been imported into Alexandria during Ptolemaic times (Fig. 118). It is possible that the artists decorating these vessels relied on iconographic models that were imported from late Ptolemaic Egypt.[558] If so, the pots would likewise testify to the reception of the taste for depictions of exotic fauna in a context far removed from cultural and artistic centres of the Hellenistic world.[559]

The next section on this thesis returns to the world of dazzling mosaics and wall paintings, and concentrates on artistic representations of animals and plants that are so accurate in their details that they can only have resulted from exceptionally close observation of real life specimens, presumably kept in captivity. As we shall see, many such representations survive in works of art from Republican and Imperial Italy, but can be traced with some certainty

[558] Török 2011, 283-284; cf. O'Connor 1993, Pl. 21.
[559] Miller 2014, 196.

back to now lost Hellenistic originals. This chapter has shown that small-scale sketchy illustrations like those on the *verso* of P.Artemid. can hardly have played a part in the transmission of designs for use in these later Italian compositions: but this poses the question of precisely how such transmissions functioned in practice, an issue which will be central to much of the following discussion.

Chapter Five:

Fish Mosaics in Late Republican Italy:
Tracing the Artistic Legacy of Hellenistic Ichthyology

I. Prelude

We saw in Chapters Two and Four that the fish depicted in the painted frieze of the Tomb of Apollophanes at Marisa and on the *verso* of the Artemidoros Papyrus were unnaturalistic in appearance, and that it is very difficult to associate them with known ichthyological species. The same cannot be said of many of the fish represented in our surviving corpus of "fish mosaics", a decorative type that emerged in the Roman world from the late-second century B.C., and which remained popular all the way into the Christian era.[560] These fish mosaics were united by a shared desire to depict a variety of species of *living* fish and other marine fauna, usually in bodies of water or in coastal settings. They differed, in this respect, from the fish depicted in the still life scenes of Romano-Campanian wall paintings,[561] which were typically shown lifeless, lying or hanging alongside fruit, game birds or other foodstuffs.[562]

Among the surviving examples, four *opus vermiculatum* mosaics from Late Republican Italy stand out: a fragmentary mosaic that remains *in situ* on the floor of the so-called Antro delle Sorti of the Lower Complex of ancient Praeneste (Fig. 120); two well-preserved *emblemata* from Pompeii now on display in the Museo Archeologico Nazionale in Naples (Figs. 128, 132); and the surviving fragments of a mosaic excavated in 1888 in the garden of the church of San Lorenzo in Panisperna in Rome (Fig. 137). All are distinguished by their technical mastery, by the large quantities of sea creatures that they represent, and by the astonishing accuracy with which they depict individual ichthyological specimens.

[560] De Puma 1970, 191-192.
[561] Meyboom 1977, 49; Tammisto 1997, 38; Andreae 2003, 141.
[562] Ling 1991, 153-157. Living fish were, however, sometimes depicted in Pompeian wall paintings, with the best surviving examples provided by compositions from the House of the Vettii, the House of the Centenary and the Villa of Diomede: see Reese 2002a, 275.

The practice of representing fish already had a strong pedigree by the time that these pavements were laid in the late-second and early-first centuries B.C. Plutarch tells us that the fourth century painter Androkydes of Kyzikos completed a painting of Skylla that incorporated fish "swimming around her in a most enthusiastic and lifelike manner",[563] and we know that a pebble mosaic with fish in its border was laid in the Temple of Zeus at Olympia in the late-fourth or early-third century B.C.[564] Better known are the red-figured 'fish-plates' produced in Attica and South Italy during the fourth century B.C., whose floors were decorated with paintings of fish and other sea creatures (Fig. 119). The fish represented on *some* of these plates were rendered with sufficient accuracy to permit credible taxonomic identifications,[565] and we shall see in this chapter that the majority of specimens depicted in the mosaics of Praeneste, Pompeii and Panisperna can be associated with particular species in a comparable way. Noting this similarity, scholars have sometimes argued that these fish mosaics were the direct descendants of the fourth century fish-plates, and that their iconography can only have emerged in an Italian *milieu*.[566] But this notion of a direct connection is very difficult to substantiate, thanks to the wide chronological gap separating the mosaics from the plates, and the very pronounced differences in medium, size and artistic quality.

In the following chapter I re-visit the question of the origins of these Late Republican fish mosaics, arguing that their iconography should be connected to the world of Hellenistic zoology that has so far formed the subject of this thesis. This is not, in itself, a ground-breaking hypothesis, since the mosaics have sometimes been mentioned in the same breath as

563 Plut., *Mor.*, 665D, 668C; Ath., *Deipnosoph.*, VIII 341a.
564 Robertson 1965, 86; *Id.* 1975, 580.
565 Note, however, the cautious remarks of McPhee and Trendall (1987, 13): "[taxonomic identifications] should not be regarded as more than tentative, since, although a few painters draw their fish with sufficient accuracy to allow of an almost certain identification, many treat them with a substantial measure of artistic license… and, where professional ichthyologists often differ widely in their identifications, we have felt particularly vulnerable."
566 Leonhard 1914, 16-18; Pfuhl 1923, 861; Fuhrmann 1931, 17; Pernice 1938, 150.

Hellenistic natural science and/or zoological treatises.[567] But the nature of this relationship remains ill defined, and scholars have been reluctant to engage with the practical issues of how and why mosaics incorporating accurate representations of fish suddenly spread across Latium and Campania during this period. In the first part of this chapter, an analysis of the iconography of each mosaic will reveal that all four compositions incorporated representations of fish that were so accurate that they can only have been founded on the first hand observation of real life specimens. The typological and iconographical relationships *between* the mosaics will then be examined, facilitating the conclusion that the mosaicists responsible for all four compositions worked using pre-existing artistic prototypes, which, as we shall see, probably originated in Ptolemaic Alexandria. The chapter will conclude with some thoughts concerning the original significance of the iconography of these compositions, and will demonstrate that they seem to have incorporated scientific knowledge.

II. The Mosaics of Praeneste, Pompeii and Panisperna

It will be useful to begin by providing a brief description of each mosaic in its original setting. As well as supplying some important contextual information, these descriptions will demonstrate that all four compositions incorporated representations of animals that far exceeded those analysed in the preceding chapters of this thesis in terms of their level of detail and their fidelity to real life specimens.

Praeneste

[567] See, for example, Meyboom 1977, 71-72; La Rocca 1990, 446; Tammisto 1997, 38; Westgate 2000, 271; De Caro 2001, 19.

The fish mosaic at Praeneste was originally the largest of the compositions,[568] and its surviving fragments remain *in situ* (Fig. 120). It decorated the floor of a cave-like grotto commonly known as the Antro delle Sorti ("Cave of the Fates"), accessed through the back wall of a courtyard-like space at the western end of the Lower Complex of the ancient town.[569] We saw in Chapter Two that the Lower Complex was probably a public building of some description, and it follows that the "Cave of the Fates" designation is misleading, since it was originally founded on the erroneous identification of the complex as the sanctuary of Fortuna Primigenia. In any case, the space containing the mosaic consisted of a cave jutting into the limestone of the hillside, which was artificially extended through the construction of three small niches and an impressive vaulted roof made from regularly sized blocks of tufa.[570] It was designed in such a way that water seeped through its porous walls, covering the mosaic in a shallow layer of water. As well as enhancing the vivid polychromy of the mosaic and preventing it from being walked upon, this feature no doubt resonated with its aquatic iconography. The mosaic itself had the shape of an elongated semi-circle, with three rounded projections extending from its right, left and top sides into the additional floor space created by the three small niches in the walls of the grotto.[571] It survives today in a fragmentary state, having suffered considerable damage both before and after it was re-discovered by Pietro Cicerchia in 1869.[572] In broadest terms, the parts of the composition bordering the edges of the elongated semi-circle are the best preserved, together with those parts decorating its three rounded projections.

The portion of the mosaic bordering its bottom edge depicted a sandy coastline dotted with small rocks and weeds, viewed from an elevated perspective. This coastline curves upwards

568 Frustratingly, no modern account of the Praeneste fish mosaic includes its dimensions.
569 The most recent account of the so-called Antro delle Sorti is Gatti 2004, 53-66.
570 Fasolo and Gullini 1953, 25; Gatti 2004, 53.
571 For the best descriptions of the mosaic, see Gullini 1956, 20-32; Andreae 2002b, 33-48; *Id.* 2003, 130-139; Steinmeyer-Schareika 1978, 98-101; Meyboom 1977, 58-60, 63-66; *Id.* 1995, 173, 336 n. 6, 369-370 n. 12.
572 For the late-nineteenth and early-twentieth century damage, see Gullini 1956, 13; and Andreae 2003, 139

along the lower left and right hand sides of the composition, forming two promontories that project into the water as though framing a bay. The right hand promontory is home to a terrace of drafted isodomic masonry, which supports a small shrine consisting of a round altar and a Corinthian column set inside a low *exedra* wall (Fig. 121).[573] The left hand promontory, meanwhile, is home to an elegantly rendered sea turtle (Fig. 122). The rest of coastline is populated by a series of nude human figures, all of whom survive in a fragmentary state. The best preserved is the figure immediately to the left of the aforementioned shrine, who is shown looking backwards over his left shoulder and carrying a translucent white fabric resembling a fishing net over his right arm (Fig. 121). This individual has sometimes been identified as Odysseus[574] or as the survivor of a shipwreck,[575] but in the absence of a *pileus*, a flock of Sirens or a beached ship, it seems safest to interpret him as a fisherman. Good support for this reading is supplied by two of the other partially preserved human figures represented on the coastline, both of whom can also be interpreted as fishermen. The first, whose heel is preserved next to a large rock just above the shrine, is shown standing next to a *lagobolon*, an instrument commonly used in hunting and fishing in the ancient world (Fig. 121). The second, whose right arm and leg are partially preserved just to the right of the centre of the shore, is shown holding a fishing line in his right hand (Fig. 123).

As far as we can tell, the rest of the mosaic depicted an extraordinary selection of fish and other marine creatures swimming in an expansive body of water. The scale at which these creatures were represented is considerably larger than that of the human figures and architectural elements depicted on the shore, and there can be little doubt that they were conceived as the primary focus of the composition. It is important to note, however, that the scale of the individual ichthyological species is itself variable, with a discernable increase in

573 Marucchi's suggestion (1904, 271) that this column represents the famous Pharos lighthouse in Alexandria has found few supporters.
574 Ferrari 1999, 382; cf. Tammisto 2005, 5.
575 Steinmeyer-Schareika 1978, 98; Krumme 1990, 163-164.

size from the front to the back of the mosaic.[576] At its most extreme the difference is enormous: compare, for example, the four tiny creatures swimming in the lagoon enclosed by the headland supporting the column shrine (Fig. 121) with the comparatively huge moray eel (*Muraena helena*) and spiny lobster (*Palinurus vulgaris*) represented in the top right hand corner of the composition (Fig. 124). This increase in size is matched by a corresponding increase in spacing, resulting in a lower concentration of specimens towards the back of the mosaic.[577] The colour of the water, meanwhile, also changes, progressing from a deep turquoise-blue at the front of the composition to a dark bluish-black at its back.[578] Both adjustments should probably be attributed to the fact that the mosaic could only be viewed from the mouth of the cave-like grotto in which it was laid, resulting in a need to ensure that the fish represented at the back of the composition were visually comprehensible from a distance of several metres.[579]

Depictions of approximately thirty-five marine creatures are fully or partially preserved in the surviving portions of the mosaic, including the sea turtle shown ambling along the shore. The original total was doubtless much higher, when we consider that a significant proportion of the composition has been lost since antiquity. Estimating the original number of specimens is of course difficult, but it is not unreasonable to suggest that there were originally at least double the number of surviving representations – that is, at least sixty-five to seventy fish and marine creatures – depicted in the mosaic. More striking than their quantity, however, is the remarkable naturalism with which the majority of the specimens were depicted, which was facilitated above all by the mosaicists' masterful command of the *opus vermiculatum* technique. The accuracy of the representations is such that Bernard Andreae has been able to propose

[576] Meyboom 1977, 64; *Id.* 1995, 369-370 n. 12.
[577] Meyboom 1977, 64.
[578] Ibid, 60, 64.
[579] Meyboom 1977, 60, 64.

precise taxonomic identifications of the majority of the surviving specimens, which are listed here in Table One. [580]

A good example of this astonishing naturalism is supplied by the fragmentary scorpion fish (*Scorpaena scrofa*) depicted slightly to the left of the 'threshold' of its rightmost projection (Fig. 125). Here the mosaicist has succeeded in depicting the characteristic series of ridges and spikes that define the head of this species, and the set of spikes projecting through the rear dorsal fin. He has also captured something of its mottled colouration through the careful use of miniscule *tesserae* ranging from brick red to light pink. Slightly less technically accomplished, though no less identifiable, is the European sea sturgeon (*Acipenser sturio*) depicted immediately above (Fig. 126). As well as rendering the wedge-shaped head and all five fins of the species correctly, the mosaicist has taken great care to depict three of the longitudinal lines of osseous plates that define the contours of its body. One or two creatures seem rather less naturalistic in appearance, notably the caricatured pair of dolphins (*Delphinus delphis*) positioned at the 'thresholds' of the left and right rounded projections (Fig. 127). The essential point remains, however, that the overwhelming majority of specimens were depicted with sufficient morphological accuracy to permit credible taxonomic identifications. Seen in this light, it seems likely that many of them relied on the close observation of real life sea creatures, despite the fact that Praeneste was situated several dozen kilometres from the Tyrrhenian coast.

The dating of the mosaic has been approached from a number of difficult angles. Comparative and stylistic arguments have sometimes been used to support precise chronologies, [581] but such criteria are notoriously fragile – and difficult to verify – when

[580] Steinmeyer-Schareika 1978, 100; Andreae 2002b, 33-48 (see especially the captions accompanying the illustrations).
[581] Gullini 1956, 30-31.

applied to Hellenistic mosaics. In truth, the most that we can say is that the virtuoso *opus vermiculatum* technique is comparable to that of the best mosaics of the second and first centuries B.C. in both the Eastern and Western Mediterranean, and that the materials employed by the mosaicist were similar to those used in other Late Republican mosaics in Italy, including those in the House of the Faun in Pompeii.[582] We are on firmer ground when considering the date of construction of the so-called Lower Complex in Praeneste, with which, we assume, the laying of the fish mosaic was roughly coeval. As we saw in Chapter Two, recent consensus places the construction of the complex in the final quarter of the second century on architectural grounds, and in this light a late-second century B.C. date for the mosaic seems the most likely.

The House of the Faun in Pompeii

Several fish mosaics have been excavated in the houses of Pompeii. Perhaps the most technically accomplished is an *emblema* from the House of the Faun (Figs. 128, 129), which was laid in a *triclinium* with First Style wall paintings that opened onto the Tuscan atrium of the property.[583] Measuring *c.* 117.5 x 117.5 cm, this *emblema* consists of a central field surrounded by a series of concentric borders. The most impressive border, *c.* 11cm wide,[584] depicts a blossoming acanthus scroll set against a black background, and is inhabited by an array of small creatures.[585]

Some twenty-two different sea creatures are depicted in the central field of the mosaic, set against a background that has generated a considerable amount of scholarly debate. Broadly

[582] Ibid, 19. The *tesserae* from the House of the Faun came from the area surrounding Vesuvius: see Fuhrmann 1931, 110-114.
[583] For the wall paintings see Hoffmann 1994, 106.
[584] Capaldo and Moncharmont 1989, 53.
[585] Castriota 1995, 46; Tammisto 1997, 113.

speaking, this background consists of two sections.[586] The lower section, corresponding to the lowermost third of the field, consists predominantly of dark blue *tesserae*, but incorporates slightly lighter turquoise-blue strips of varying widths in its upper half. The upper section, corresponding to the uppermost two thirds of the central field, consists of alternating strips of sky blue and light grey in its lower half, while in its upper half the sky blue strips gradually become less frequent and give way to a solid block of light grey. At the point of transition between the two sections a rocky outcrop is positioned at the left hand side of the composition, on top of which perches a small fish-eating bird that is usually identified as a kingfisher[587] or a bee-eater.[588] Another rocky outcrop is depicted in the bottom right hand corner.

It has been suggested that the two sections of the background were conceived as a continuum, and were designed to represent a perspective view of the surface of the sea.[589] This interpretation has the advantage of positioning the fish and sea creatures in – or at least *on* – a solid body of water, and is consonant with the fact that all of the individual specimens are represented as though alive and swimming. In reality, however, the theory is undermined by the strikingly different colour schemes of the two sections, the abruptness of the transition between them, and the position of the left hand rocky outcrop. It seems much more likely that the background constitutes a view of the horizon, in which the dark blue of the lower section represents the ocean, the light blue and light grey of the upper section represent the sky and wispy ribbons of clouds, and the two rocky outcrops are cliffs framing a bay.[590] Support is offered by two thin bands of light blue *tesserae* at the top of the lower section, which follow the contours of the rocky outcrop in such a way that they surely represent

[586] For the best description in English, see Westgate 2000, 268-269.
[587] Meyboom 1977, 59.
[588] Capaldo and Moncharmont 1989, 64-65; de Vos 1994, 106-107; Tammisto 1997, 41-42; Andreae 2003, 148
[589] Meyboom 1977, 60-63.
[590] Pernice 1938, 150; Beyen 1960, 321-323; de Vos 1994, 106.

waves breaking on the rocks. If this reading can be substantiated, it follows that the fish and their background were neither spatially nor proportionally related. This may strike us as strange, but we need only recall the difference in scale between the fish and human figures depicted in the fish mosaic at Praeneste to realise that such inconsistencies were not necessarily uncommon.

The marine fauna depicted against this background are evenly distributed, clustering around a central group showing an octopus wrestling a lobster. To the naked eye, these creatures seem entirely in proportion with each other, but in reality they were not depicted on a like-for-like scale, presumably for reasons of space and composition.[591] Still, they were all represented with a very high level of accuracy, and this has permitted several scholars to propose credible taxonomic interpretations of the specimens concerned, which are listed here in Table One.[592] A representative example is supplied by the European sea bass (*Dicentrarchus labrax*) dominating the lower part of the composition (Fig. 130). Here the mosaicist has successfully captured not only the elongated body shape of the species, its silvery-grey colour and the arrangement and shape of its six visible fins, but also finer details such as its vomerine teeth and the longitudinal line running across the side of its body. We might also mention the striped mullet (*Mullus barbatus*) depicted immediately above (Figs. 131), which is similarly realistic thanks to the short and steep profile of its snout, the depiction of one stout barbel beneath its chin, and the delineation of the longitudinal line running across its body. This kind of accuracy recurs throughout the composition, suggesting that the individual representations of fish and other marine fauna depended on the close observation of real life specimens.

[591] Capaldo and Moncharmont 1989, 56; contra Meyboom 1977, 64.
[592] See Palombi 1950; Thompson 1977; Meyboom 1977; Capaldo and Moncharmont 1989.

Against this conclusion, it might be pointed out that scholars have occasionally proposed differing taxonomic interpretations of some of the specimens depicted in the House of the Faun mosaic and in the other mosaics discussed in this chapter.[593] But it is important to recognise that the majority of specimens that have been subjected to competing interpretations have simply been identified as different – but closely related – members *of a single ichthyological family*, meaning that the disagreements are confined to matters of very fine detail. For example, the fish in the House of the Faun mosaic identified as a golden grey mullet (*Liza aurata*) by some scholars has also been interpreted as a flathead grey mullet (*Mugil cephalus*) by others. Here the lack of consensus is less important than the conclusion that the specimen in the mosaic clearly represents a grey mullet belonging to the *Mullidae* family. The fundamental point remains that the mosaicist responsible for the *emblema* took sufficient care when rendering the morphology, colour and behaviour of each creature to permit a definitive taxonomic identification, whether at a family or at a species level. In some cases he was limited by his chosen artistic medium, since it is impossible to translate certain minute details – for instance, the size and shape of scales – using *tesserae*, and such details are often important when distinguishing between different ichthyological species.[594] In any case, a dependence on real life specimens remains probable.

House VIII 2, 16 in Pompeii

A second *emblema*, measuring *c.* 88 x 88 cm, was excavated in House VIII 2, 16 (Figs. 132, 133). Here it decorated the floor of a "triclinio invernale" with a fine view of the Bay of Naples,[595] where it was laid in a shallow tray in the centre of an earthenware floor.[596] The *emblema* contains representations of some twenty-three different sea creatures, set against a

[593] The differing identifications are collected in Reese 2002a, 274-291; *Id.* 2002b, 292-314.
[594] Capaldo and Moncharmont 1989, 53-54.
[595] Sampaolo 1998, 88-89.
[596] Ibid, 75, 88.

plain black background punctuated by a series of rocky outcrops around its edges. One of these outcrops is situated roughly half way up the left hand side of the field, and is again home to a small bird with a pointed beak, which is usually identified as a kingfisher.[597] Three more outcrops are positioned along the bottom of the composition, the largest of which is in the bottom right hand corner. Together these rocky elements form a frame that resembles a series of cliffs surrounding a bay, but the rest of the background is devoid of landscape elements.

The fish and the other marine fauna are evenly distributed throughout the mosaic, and again surround a central group showing an octopus wrestling a lobster. All of the creatures stand out from the plain black background, but here the use of colour seems duller and less varied than in the House of the Faun, with a limited palette consisting predominantly of reds, browns and greys.[598] Some of the specimens also seem comparatively caricatured and/or two-dimensional, although it usually possible to determine the species that the mosaicist intended to represent. A good example is provided by the moray eel (*Muraena helena*) shown swimming towards the central octopus-lobster group, whose body has been simplified into a series of rather flat-looking schematic curves. Still, as in the other fish mosaics, many of the represented specimens were depicted with remarkable fidelity to nature. In the case of the small spotted catfish (*Scyliorhinus canicula*), for example, the artist has successfully captured the correct position of its gill slits, the configuration of its seven visible fins, and the speckled appearance of the skin on its back (Fig. 134).

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[597] Capaldo and Moncharmont 1989, 62-63; Tammisto 1997, 41; Andreae 2003, 148.
[598] Hinted at by Andreae 2003, 15.

The dates of these Pompeian *emblemata* are very difficult to determine with any level of precision. Although the mosaic from the House of the Faun has sometimes been assigned to the decade 100 – 90 B.C. on stylistic grounds,[599] this is a product of intelligent guesswork rather than any empirical data. According to the most recent detailed study of the House of the Faun, all of the mosaics found in the property were laid during a major programme of renovation known as CdF 2 ("Casa del Fauno 2"), which also included the construction of the large northern peristyle, a switch from Doric to Ionic order in the portico of the smaller Southern peristyle, and the insertion of a second entrance into the tetrastyle atrium.[600] This building programme has been accurately dated to *c.* 110 – 75 B.C.,[601] providing some broad chronological parameters for the laying of the *emblema*, which was presumably pre-fabricated in a mosaicists' workshop.

The mosaic from House VIII 2, 16, meanwhile, is usually dated later than its counterpart from the House of the Faun on comparative grounds, thanks to the perception that it is a simplified and less technically accomplished version of the same iconographic scheme.[602] A later date is certainly possible, but it is important to realise that a variety of factors shaped artistic production in the ancient world, and that a linear chronological model based solely on comparative criteria may not take all of these factors into account. Besides chronology, factors including the resources of the patron, the technical ability of the mosaicist(s), the available materials, the size and function of the room in which the pavement was laid and the quality of the mosaicist's models all had significant impacts upon the form of the final composition.

[599] Blake 1930, 138; Pernice 1938, 151, 153; Beyen 1960, 321; Meyboom 1977, 55.
[600] Faber and Hoffmann 2009, 50-52.
[601] Ibid.
[602] Meyboom 1977, 52-56, 81 n. 73; *Id.* 1995, 173 n. 4.

Panisperna

Less well-documented but no less important is the fish mosaic excavated in 1888 in a garden next to the church of San Lorenzo in Panisperna in Rome.[603] This composition originally covered the entire floor of the room in which it was laid, differing from the Pompeian *emblemata* in this respect. The room, with a floor space of *c.* 14 m^2, was identified as "una piccola camera da bagno" at the time of its discovery,[604] seemingly because its walls were plastered with water-resistant "calcestruzzo".[605] If this was indeed the case, it follows that the mosaic was often covered with water during antiquity, much like its compatriot at Praeneste. In any case, only seven fragments survive, and these are now housed in the Centrale Montemartini of the Capitoline Museums in Rome. It is clear from the excavation reports that more of the composition was preserved at the time of its discovery.[606]

The fish mosaic proper was framed on all sides by a pair of beautifully executed borders, known now only from a single surviving fragment (Fig. 135).[607] The narrower interior border depicted a row of white *trompe l'oeil* dentils against a black background, while the wider exterior border showed a series of looping acanthus scrolls with blossoming leaves and flowers, set against a white background and inhabited by an array of birds.[608]

The surviving fragments of the mosaic contain traces of approximately twenty fully or partially preserved sea creatures. These are set against a variegated background of light grey and dark blue, which is characterised above all by the rather stark nature of the transitions

[603] The best descriptions of the surviving portions of this mosaic are provided by Matini Morricone 1963, 236-237; Meyboom 1995, 137, 137 n. 7; Andreae 2003, 142-148.
[604] Gatti 1888, 437; Visconti 1888, 263.
[605] Visconti 1888, 263; cf. Andreae 2003, 144.
[606] Gatti 1888, 437; Visconti 1888, 263.
[607] The best description is provided by Andreae 2003, 144-145.
[608] Gatti 1888, 437; Visconti 1888, 263-264.

between the irregular stretches of these two colours (Figs. 136, 137). It is possible that the scheme was intended to communicate the changing depth of a body of water or a perspective view of its surface,[609] but in truth the overall effect is abstract and confusing. The same conclusion cannot be applied to the representations of the fish themselves, which again exhibit a remarkable level of naturalism, and which can be identified with specific species, as in Table One. In some cases the *opus vermiculatum* technique was pushed to its absolute limits, resulting in a lively, realistic effect that surpassed that of the other mosaics already discussed.[610] A good example is provided by the European squid (*Loligo vulgaris*), which is fully preserved in the largest surviving fragment of the composition (Fig. 137). Here the mosaicist took great care to articulate the species' distinctive morphological features, including its delicate light pink colour, its long, slender mantle with rhomboid fins, its eight short arms, and its two long tentacles with large suckers. Once again, there seems no reason to doubt that the representations relied on the observation of real life specimens.

III. Typological Connections

Together, then, the fish mosaics of Praeneste, Pompeii and Panisperna testify to the emergence of a new decorative type in Late Republican Italy, which was considered appropriate for the adornment of public buildings, dining rooms and bathing installations alike. The unprecedented accuracy of the representations of fish and other marine creatures in these compositions suggests a dependence on the observation of real ichthyological specimens, but the nature of this dependence requires very careful consideration, especially when we consider that there are a series of exact iconographic correspondences *between* these compositions that cannot be dismissed as the products of mere chance. Indeed, several

[609] Andreae 2003, 62, seemingly re-iterating the theory of Meyboom 1977, 60-63.
[610] Meyboom 1977, 57; *Id.* 1995, 174 n. 7.

species are represented in a near identical manner in two or more of the mosaics, establishing a nexus of typological relationships that can only be explained if we assume that all four compositions shared some kind of common artistic heritage. These typological relationships are enumerated fully in Table One, but it will be useful to highlight some of them here, before turning to examine precisely how these compositions were designed during antiquity.

An obvious point of departure is supplied by the two Pompeian *emblemata*, which, as we have already seen, were both arranged around a central group showing an octopus wrestling a lobster, and both incorporated representations of small birds with long beaks perching on rocky outcrops. Nine species were represented more or less identically in both compositions, in terms of their morphology, colouration, pose and relative size: the octopus (*Octopus vulgaris*), the lobster (*Palinurus vulgaris*), the large spotted dogfish (*Scyliorhinus stellaris*), the golden grey mullet (*Liza aurata*), the gilt head bream (*Sparus aurata*), the sea bream in the bottom left hand corner of each composition (*Diplodus sp.*), the European sea bass (*Dicentrarchus labrax*), the small gurnard (*Trigla sp.*), and the purple dye murex (*Murex brandaris*). A further five species occur in both compositions, but in a non-identical manner: the oscillated electric ray (*Torpedo torpedo*), the moray eel (*Muraena helena*), the scorpion fish (*Scorpaena sp.*), the comber (*Serranus cabrilla*), and the prawn (*Leander sp./Penaeus kerathurus*).

These iconographic similarities are matched by a series of compositional ones, with respect to the relative and actual positioning of individual species of fish.[611] In both mosaics we observe a moray eel (*Muraena helena*) swimming towards the central octopus-lobster group; an oscillated electric ray (*Torpedo torpedo*) positioned above this octopus-lobster group, and on the same vertical axis; a scorpion fish (*Scorpaena sp.*) just above and to the right of the octopus-lobster group; a large spotted dogfish (*Scyliorhinus stellaris*) immediately to the right of the

[611] For these similarities see Capaldo and Moncharmont 1989, 53.

octopus-lobster group; a gilt head bream (*Sparus aurata*) in the top right hand corner of the composition; a sea bream (*Diplodus sp.*) in the extreme bottom left hand corner; a large sea bass (*Dicentrarchus labrax*) occupying a large proportion of the space between the octopus-lobster group and the rocky outcrop in the bottom right hand corner; a gurnard (*Trigla sp.*) darting through the water somewhere to the right of the central group; and a purple dye murex (*Murex brandaris*) in the space between the octopus-lobster group and the top right hand corner.

In light of these correspondences, it has sometimes been suggested that one of the Pompeian mosaics was directly informed by and/or modelled on the other. But this possibility is undermined by the observation that each composition included representations of up to ten species that were not re-produced in the other.[612] The most we can say is that the two *emblemata* shared some kind of common genealogy, and that this is unsurprising given their common Pompeian provenance.

It is more difficult to explain why the fish mosaic at Praeneste also exhibits close iconographic correspondences with this pair of Pompeian mosaics.[613] Indeed, several species in the mosaic were depicted in a near identical manner to the corresponding specimens in the House of the Faun and/or House VIII 2, 16, establishing a series of typological relationships that are symptomatic of a direct connection between all three. Perhaps the most striking example is supplied by the octopus (*Octopus vulgaris*), which at Praeneste was shown wrestling a moray eel rather than the usual lobster (Fig. 138). Here, as in the two *emblemata*, the creature has piercing eyes set at the base of its oval-shaped head, and a delicate pinkish colour. More telling, however, is the configuration of its surviving tentacles.[614] In all three compositions the octopus has three tentacles protruding from its head directly beneath the eyes, and in all cases

612 Meyboom 1977, 52-53.
613 Gullini 1956, 20-32; Meyboom 1977, 58-60; Tammisto 1997, 38-45.
614 Meyboom 1977, 58-59.

the central tentacle of the three loops beneath the leftmost one. In Praeneste and the House of the Faun, a fourth tentacle extends downwards beneath the central and rightmost tentacles, while in House VIII 2, 16 the same effect is achieved by the extension of the rightmost tentacle. In Praeneste, the rightmost tentacle projects in such a way as to form a semi-circular loop, while in House VIII 2, 16, the loop is formed by an additional tentacle, and in the House of the Faun it is missing completely. As well as exhibiting a morphological configuration found in both Pompeian *emblemata*, therefore, the Praeneste octopus includes morphological elements exclusive to each. Incidentally, the eel (*Muraena helena*) being wrestled by the octopus has a curved profile that is strikingly reminiscent of the specimen from House VIII 2, 16.

Although the fragmentary state of the mosaic makes assessing its iconography a delicate task, a further eighteen specimens seem to have close analogues at Pompeii: the squid (*Loligo vulgaris*), the two small prawns in the lagoon beneath the column shrine (*Leander sp.*), the spiny lobster (*Palinurus vulgaris*), the other moray eel (*Muraena helena*), the golden grey mullet (*Liza aurata*), the sea bass (*Dicentrarchus labrax*) (Fig. 139), the scorpion fish (*Scorpaena scrofa*) (Fig. 125), three combers (*Serannus cabrilla*), the painted comber (*Serranus scriba*), the annular bream (*Diplodus annularis*), the common pandora (*Pagellus erythrinus*), two gurnards (*Trigla sp.*), the lesser spotted dogfish (*Scyliorhinus canicula*) and the oscillated electric ray (*Torpedo torpedo*) (Fig. 140). From a compositional perspective, the rocky outcrops of the Pompeian *emblemata* seem to constitute abbreviated versions of the sandy, rocky coastline depicted at Praeneste.[615]

The fish mosaic from Panisperna, meanwhile, is usually said to be iconographically independent of the pavements from Praeneste and Pompeii,[616] predominantly because it

[615] Pernice 1938, 150; Gullini 1956, 22; Meyboom 1977, 59.
[616] Pernice 1938, 154; Matini Morricone 1963, 236-237; Meyboom 1977, 57; *Id.* 1995, 173 n. 7; Andreae 2003, 145-148.

exhibits a distinctive style, which is characterised above all by the use of minute *tesserae* and seemingly infinite gradations of colour – especially greys and silvers – to produce an iridescent, colouristic effect that one scholar has described as "impressionistic".[617] But style is not the only barometer of similarity, and it is interesting to note that several of the ichthyological species represented in the surviving fragments of the mosaic seem very close to the corresponding specimens at Praeneste and Pompeii. In the largest surviving fragment (Fig. 137), for example, we observe two projecting antennae of a lobster (*Palinurus vulgaris*), a European squid (*Loligo vulgaris*) similar to the specimens from Praeneste and House VIII 2, 16, a purple dye murex shell (*Murex brandaris*) close to the one from the House of the Faun, and a small crustacean that is similar to the prawns (*Palaemon* sp.) depicted in all three of these compositions. To these we should add the fragmentary portion of a scorpion fish (*Scorpaena sp.*) (Fig. 136), which is directly comparable to the specimens from Pompeii and Praeneste; the striped red mullet (*Mullus surmuletus*), which appears to be a more sophisticated version of the specimen in House VIII 2, 16 (Fig. 141); and the superb representation of a gilt-head bream (*Spaus aurata*), which is an astonishingly refined version of the specimen depicted in the two Pompeian *emblemata* (Fig. 142). It is likely that the mosaic also included a group showing an octopus fighting a lobster and a moray eel, judging by the mention of "un grande polipo che abbranca un'aragusta, la quale alla sua volta tiene afferrata una murena" in one of the excavation reports.[618]

In this light, the notion that the Panisperna mosaic was necessarily artistically independent of the compositions from Praeneste and Pompeii needs re-visiting. Although it was executed in a different style, had a different background, and decorated a different type of space, much of its content was, in fact, very similar, and it was surrounded by a vegetal border that had many

[617] Meyboom 1995, 173 n. 7.
[618] Gatti 1888, 437. Compare Visconti 1888, 263, who mentions "un mostruoso polipo, il quale nelle sue branche tiene intricate diversi altri marini animali: un delfino che addenta una seppia".

correspondences with the one enclosing the House of the Faun *emblema*. It is certainly possible, therefore, that the Panisperna mosaic was also connected in some way to the compositions from Praeneste and Pompeii.[619]

IV. Pre-existing Prototype(s)

We have seen that the Late Republican fish mosaics of Praeneste, Pompeii and Panisperna all contained astonishingly accurate representations of fish and other marine fauna that can only have been founded on interactions with real life specimens. We have also identified a series of exact iconographic correspondences *between* the mosaics that suggest that the compositions were genetically connected in some way. Both of these observations need to be taken into account as we turn to address exactly how these mosaics were designed during antiquity.

The simplest solution would be to assume that Hellenistic mosaicists were capable of producing taxonomically accurate representations of sea creatures from memory alone, and that they relied solely on their knowledge of different ichthyological species when designing and producing these compositions. This knowledge might be accrued through first hand exposure to the creatures in question, perhaps in a gastronomic setting, or else through non-material channels such as being taught how to represent a particular species as an apprentice in a workshop, or reading a detailed description in a zoological treatise.

The theory is neat, but the only way that it can account for the exact iconographic correspondences *between* the different mosaics is if we assume that a single workshop or group of mosaicists was responsible for designing all four of the compositions.[620] In this case, our

[619] Originally suggested by Blake 1930, 139.
[620] Meyboom 1977, 54-55, 72-74; contra Dunbabin 1999, 47.

mosaicists will have been equally adept at producing pre-fabricated *emblemata* and laying floor mosaics *in situ*, and will have accumulated a client base that was spread over an extraordinary geographical area, since Praeneste and Pompeii were situated some 112 miles apart. They will also have demonstrated a remarkable ability to modulate the artistic style of the pavements that they produced, given that the four compositions under discussion here exhibit such pronounced differences in this respect. The theory also requires us to accept that the mosaicists were capable of producing scientifically accurate depictions of huge numbers of ichthyological species from memory alone, since the Pompeian *emblemata* each contain representations of more than twenty different species, and the Praeneste mosaic may originally have contained as many as sixty or seventy. This would have necessitated an astonishing knowledge of the ichthyological kingdom, and a photographic recall of the morphological minutiae that differentiated individual species.

From this it should be clear that we are required to construct a very particular – even improbable – set of circumstances in order to justify the theory that our Late Republican fish mosaics were designed using memory alone. The only credible alternative is that the artists responsible for these compositions were able to use pre-existing prototypes of some description: that is, detailed images carried on transportable media that could be consulted or copied when designing and/or laying the mosaics. This theory is easier to reconcile with the discrepancies between the compositions in terms of format and style, since it does not rely on the assumption that the same group of mosaicists was responsible for producing all four of the mosaics. It also offers a clear and compelling answer to the question of how identical representations of particular fish might be produced in different compositions, in different locations, at different times.

It is important to consider what this would entail in practical terms. We saw in Chapter Four that illustrations like those on the *verso* of the Artemidoros Papyrus are unlikely to have served as artistic prototypes in contexts such as these, and this is all but confirmed by the iconography of the fish mosaics themselves, since their astonishingly detailed representations of individual ichthyological species can hardly have been achieved through the scaling up of small-scale sketches on parchment or papyrus. Rather, if these representations were indeed dependent on pre-existing prototypes, then these would have been exceptionally detailed, and executed on something like a 1:1 scale.

The notion of 1:1 scale models would be easier to substantiate if it could be shown that the actual sizes of particular species remained broadly consistent across the different mosaics. In the case of the Pompeian *emblemata*, it is possible to test this using computer software.[621] Indeed, by mapping the known dimensions of an *emblema* onto a photograph depicting it, it becomes possible to establish a scale that can then be used to measure the actual length of a straight line positioned between any two fixed points on the composition. In the case of the fish mosaics, the most useful fixed points are provided by anatomical points of reference: a specific part of a particular fin, a projecting upper lip, the point of a snout, the edge of a body, and so on. The results in Table Two were obtained by measuring the distances between fixed points of this kind on nine species in the House of the Faun and House VIII 2, 16.

Even if we allow some margin for error, it is striking that in the majority of cases these measurements fall within a range of approximately 0 to 3 centimetres. The example of the sea bass, the largest ichthyological specimen depicted in the *emblemata*, is particularly remarkable. Despite its comparatively large size, the length of this fish is virtually identical in the two

[621] The software is called ImageJ.

mosaics, *c.* 48.94 cm in the House of the Faun and *c.* 49.25 cm in House VIII 2, 16, suggesting that the artists responsible for both compositions relied on prototypes in which this creature was depicted on precisely this kind of scale. The same conclusion should probably be applied to the large spotted dogfish, the golden grey mullet and the scorpion fish, and presumably, therefore, to many of the other creatures depicted in these pavements.[622]

If this interpretation is correct, then we are faced two theoretical possibilities. Either there was a single, all-encompassing prototype, large in size and expansive in scope, or rather there were multiple prototypes, which each transmitted smaller portions of the iconography. The Pompeian *emblemata* seem to speak in favour of the second possibility, when we consider that these compositions incorporated different combinations and of marine fauna, arranged in different configurations. If their designs were based on a single, all-encompassing prototype, we would need to explain why they each selected such different components from it, and why they re-interpreted this prototype in such different ways. Rather, the differences between the compositions are much more comprehensible if we assume that they were, in fact, compilations of sorts, which were designed using numerous prototypes that each transmitted particular elements of the iconography: individual ichthyological specimens, for argument's sake. In this case, the mosaicists will have used these prototypes to draw up the designs for their pavements on a 1:1 scale before executing them in virtuoso *opus vermiculatum*. This intermediate stage is suggested above all by the observation that some of the individual specimens in both mosaics are separated from each other by only a single row of *tesserae*, testifying to a process of remarkably detailed planning.

[622] The only other explanation is that a single artist or workshop scaled up smaller models to near identical sizes when designing two independent compositions, and this seems much less likely.

We can only speculate what form these prototypes might have taken. Certainly, media such as papyrus and parchment would have been ill-suited to transmitting such large scale images, and it is important to note that the artistry of even the finest papyrus illustrations surviving from antiquity falls well short of that exhibited in the fish mosaics. One possibility is that the images were carried on whitened wooden boards known as *pinakes*, *leukomata* or *sanides*, identical to those on which city documents were initially published, which are known to have carried painted pictures during antiquity (Fig. 143).[623]

We are on firmer ground when considering the nature of the iconography transmitted by the prototypes. It is clear that they carried taxonomically accurate representations of a very large number of ichthyological species and other marine fauna: perhaps as many as sixty or seventy, judging by the composition at Praeneste. It is also clear that the prototypes transmitted the design of an accompanying landscape, which was re-produced as a sandy, rocky coastline at Praeneste, and as a series of rocky outcrops in the two Pompeian mosaics.[624] As far as we can tell, this landscape incorporated a series of naked fishermen, as well as an ornamental column-shrine set on a terrace of drafted isodomic masonry. It may also have included representations of a sea turtle and a water bird.

V. The Origins of the Prototype(s)

According to this reconstruction, many elements of the iconography of the Late Republican fish mosaics of Praeneste, Pompeii and Panisperna were not formulated at the time that the

[623] For the use of *leukomata* and *sanides* as artistic models see, e.g. Smith 2013, 138, who refers to "Delian inventories listing 'wooden *leukomata* with *graphai* (pictures)' as opposed to others with *anagraphai* ('texts'): *IDélos* 1403, 1412, 1442." Another important inscription is IG II^2 1672, which refers to a painted wooden board whose price suggests that it was decorated with a picture of some significance. Fischer (2003, 237-250), meanwhile, notes that two references in Kallimachos and Menander suggest the use of *sanides* for paintings of gods.

[624] A similar conclusion was reached by Antero Tammisto (1997, 161), who argued that "the models in pattern books" included both "looser… sketches of certain subjects", here the accompanying landscape, as well as "series of their individual elements", here the individual ichthyological representations.

compositions were designed, and should instead be associated with one or more pre-existing prototypes. It remains to ask where and when the iconography carried by these prototypes was conceived.

An obvious starting point when addressing this question is to search for precursors surviving from the Hellenistic world. In terms of both subject and medium, the closest forerunner is a fragmentary mosaic excavated in Room A of Palace IV in Pergamon, which depicts a solitary fish that has been tentatively identified as a sea bass (Fig. 144).[625] The importance of this fragment lies in its context, since Palace IV was a building situated in the royal precinct on top of the acropolis of the Attalid royal capital. It therefore demonstrates that the Hellenistic interest in depicting fish and other marine creatures in high quality works of art could be manifested in buildings used by the most eminent members of contemporary society, including the kings themselves. Still, it does not necessarily follow that the iconography of our Late Republican fish mosaics originated in Attalid Pergamon, for two principal reasons. From an iconographic perspective, the 'sea bass' depicted in the Pergamene fragment does not closely resemble any of the ichthyological specimens represented in the mosaics from Praeneste, Pompeii and Panisperna. And from a technical point of view, the Pergamene fragment seems considerably less refined than our Italian compositions.

Another approach is to consider whether the decorative programmes of the buildings that the mosaics adorned might shed some light on the origins of their iconography. After all, the fish mosaic in the Lower Complex at Praeneste was the sister piece of the better-known Nile Mosaic, and we saw in Chapter Three that the latter was surely a version of a large scale work of art from Ptolemaic Alexandria, which should probably be dated to the third century B.C. Analogy with the Nile Mosaic would suggest that the prototypes behind the fish mosaic were

[625] Salzmann 1995, 101-102; Grüßinger *et al.* 2011, 518 Cat. 5.41.

likewise modelled on an Alexandrian work of art, and this theory is supported by a number of thematic and iconographic correspondences between the compositions.[626] Most notably, the two mosaics were united by their shared interest in animals, which was manifested in the Nile Mosaic through the depiction of exotic creatures with taxonomic identifying labels, and in the fish mosaic by the stunningly realistic representation of a large variety of fish and other marine fauna. Both compositions also incorporated innovative representations of landscape settings, depicted as though being viewed from elevated perspectives.

In the House of the Faun, meanwhile, the iconography of several mosaics laid at approximately the same time as the fish *emblema* can likewise be connected with Egypt and/or Alexandria. The most obvious example is supplied by tri-partite mosaic decorating the threshold of the *exedra* containing the Alexander Mosaic, which depicted a selection of typically Egyptian fauna and flora inhabiting a swampy landscape that surely represents the river Nile (Fig. 103). We might also mention the Symplegma mosaic showing an erotic encounter between a satyr and a nymph (Fig. 145), since an *emblema* with exceptionally similar iconography was excavated at Thmuis in the Nile delta, just outside of Alexandria (Fig. 146).[627] It is unlikely that the House of the Faun mosaic was directly modelled on its compatriot from Thmuis: rather, *both* compositions probably depended on intermediary prototypes similar to those that we have re-constructed in this chapter, which would have permitted the same iconography to be re-produced in different contexts and locations. A third example is supplied the superb representation of a cat attacking a bird in an *emblema* that decorated one wing of the Tuscan atrium. Other versions of this subject are known in mosaic from Rome and elsewhere,[628] but a fragmentary marble group depicting the same theme also

[626] Meyboom 1977, 70-71.
[627] Parlasca 1975, 364-365; Daszewski 1985, 21-22.
[628] Andreae 2003, 201-214.

survives from Damanhur in the Western Nile Delta, which has been dated to Ptolemaic times.[629]

These contextual considerations suggest that the iconography of the fish mosaics may have originated in Hellenistic Alexandria, but it is important to ask how far the iconography of the compositions themselves supports this kind of reading. The individual ichthyological specimens depicted in the mosaics are of little help here, since the majority of them are found across the Mediterranean basin and so defy specific geographical contextualisation.[630] More useful, in this respect, are the landscape elements depicted in the Praeneste mosaic, particularly the shrine depicted on a terrace of isodomic masonry, which, as we have noted, consists of a round altar and a Corinthian column set inside a low *exedra* (Fig. 121). The profile of the column shaft is unusual, since it is formed of a series of un-fluted – or perhaps lightly faceted – drums with drafted margins, which lend it an appearance of incompleteness. On the one hand, this deliberately unfinished column finds close parallels in real architecture of the late-second and early-first centuries B.C., as in well as in Second Style wall paintings (Fig. 147), and it is on this basis that Hans Lauter has argued that "künstliche Unfertigkeit" of this kind became popular in the Hellenistic world from the late-second century B.C.[631] On the other hand, similar columns are known on the Greek mainland from as early as the late-fourth century B.C., in the Temple of Zeus at Stratos, for instance,[632] and this has permitted Thanassis Kalpaxis and Rolf Tybout to conclude that deliberately unfinished architectural elements came into vogue at an earlier juncture.[633]

[629] Parlasca 1975, 365; de Vos 1994, 85.
[630] Meyboom 1977, 68-69.
[631] Lauter 1983, 291-297.
[632] For this temple see now Pakkanen 2013, 75-93.
[633] Kalpaxis 1986, 156-166; Tybout 1989, 334-335.

The Corinthian capital at the top of the column, meanwhile, is squarish in shape, and has a single row of acanthus leaves with volutes springing directly from their collars, a central fleuron in place of the usual helices, and a concave-sided abacus. In his initial publication of the mosaic, Giorgio Gullini identified this capital as Alexandrian,[634] but in truth it has precious little in common with the four classes of Alexandrian Corinthian capital that had previously been identified by Konstantin Ronczewski.[635] For Paul Meyboom, the closest parallels are supplied by Italo-Corinthian capitals from Reggio di Calabria and Palermo, but he himself argues that it does not necessarily follow that the iconography of the column-shrine should be associated with Southern Italy.[636] Perhaps the most we can say is that the squat proportions of the capital and the single row of acanthus leaves would be more consistent with a date earlier in the Hellenistic period rather than later.[637]

The column itself is therefore very difficult to contextualise, but additional clues are supplied by the spolia decorating it, including the rudder and trident projecting upwards from its base. These clearly resonated with the aquatic iconography of the rest of the composition, and probably alluded to the perennial desire for "glückliche Schiffahrt und reichen Fischfang" in the ancient world.[638] Some scholars have also interpreted the trident as a sign that the terrace shrine was dedicated to Poseidon,[639] but others have preferred to associate it with Isis Pelagia[640] or Isis Tyche,[641] or else to interpret it as the grave installation of a particularly celebrated trierarch or admiral.[642] In any case, the shaft is also decorated with a pair of long oval shields that are suspended from its centre with a red sash. The emblem decorating the

634 Gullini 1956, 32.
635 Ronczewski 1927, 3-36; cf. McKenzie 2007, 83-91.
636 Meyboom 1995, 377-378 n. 36.
637 Riemann 1986, 396; cf. Steinmeyer-Schareika 1978, 98-99.
638 Andreae 2003, 137.
639 Delbrück 1907, 59; Vaglieri 1909, 235; Steinmeyer-Schareika 1978, 98; Riemann 1986, 396-397; Wattel-de-Croizant 1986, 554; Tammisto 1997, 246 n. 303; Ferrari 1999, 381.
640 Schefold 1962, 197; Coarelli 1987, 81; Lavagne 1988, 245.
641 A possibility suggested by Meyboom 1995, 336-337 n. 6.
642 Lauter 1983, 290.

shield facing out of the mosaic is unusual, consisting of four S-shapes emanating from a transverse bar that is bisected at right angles by a thin vertical line. The closest parallel is found in section 13 of the Nile Mosaic of Praeneste, where another long oval shield carries an emblem consisting of four S-shapes arranged symmetrically around a central transverse line (Fig. 148).[643] It is tempting to interpret this correspondence as evidence that the column shrine should likewise be associated with Ptolemaic Egypt, especially when we consider that long oval shields became an important element of royally sponsored imagery during the reign of Ptolemy II Philadelphos. Indeed, a shield of this kind was added to the field of Ptolemaic coins during the reign of this king (Fig. 149),[644] possibly to celebrate the suppression of a revolt of a band of recalcitrant Galatian mercenaries,[645] and we know from Kallixeinos of Rhodes' description that Philadelphos' grand festival pavilion was decorated with "Oblong shields that alternated between silver and gold [θυρεοὶ... ἐναλλὰξ ἀργυροῖ τε καὶ χρυσοῖ]".[646]

It may also be significant that the plinth on top of the column and the cylindrical shaft of the altar standing in front of it were depicted in dark red tesserae, since these were surely intended to represent a real material of the same colour that might be used in architectural and decorative construction. The most obvious candidate is red porphyry, which began to be exploited in Egypt during Ptolemaic times, presumably after Ptolemy II Philadelphos constructed a road from Koptos to the Red Sea port of Myos Hormos that passed close to Mons Porphyrites.[647] Crucially, the use of this stone appears to have been restricted to Egypt during the Hellenistic period, judging by a series of isolated archaeological finds and several incidental literary references,[648] notably in Lucan's description of the banqueting hall of Kleopatra VII, where we are told that "The walls shone with marble; nor were they merely

643 Meyboom 1995, 36, 270-271 n. 163.
644 Mørkholm 1991, 101.
645 Voegtli 1973, 86-89; Ritter 1975, 2-3; Wolf and Lorber 2011, 22-23; contra Salzmann 1980, 33-39.
646 Ath., *Deipnosoph.*, V 196b; cf. Fraser 1972b, 284 n. 275.
647 Strab., XVIII 1, 45.
648 Lucci 1964, 238-239; Malgouyres 2003, 26-27; Del Bufalo 2012, 13-19.

overlaid with a thin surface of it; and agate stood there on its own account, no useless ornament, and porphyry [Purpureusque lapis]".[649] It follows that if the dark red colour of the plinth and the altar were intended to replicate the effect of red porphyry, then it is likely that the iconography of this part of the composition should be associated with Ptolemaic Egypt.[650]

Further evidence in this direction is supplied by the similarities between the Praeneste column-shrine and the rustic shrines frequently depicted in genre landscape scenes in Romano-Campanian wall paintings.[651] Indeed, while the geographical associations of these genre scenes remain controversial, it is striking that the wall paintings that most closely resemble the column-shrine of the Praeneste mosaic originally decorated the right and left *alae* of the northern wall of the Ekklesiasterion of the Temple of Isis – that most Egyptian of goddesses – in Pompeii.[652] The painting from the right *ala* shows a distyle shrine preceded by two freestanding columns with adjoining entablature, while the painting from the left *ala* (Fig. 150) shows a similar pair of freestanding columns surrounded by a low *exedra* carrying gold or bronze vessels at either end. As in Praeneste, these architectural elements are depicted in a rocky landscape surrounded by water, and the freestanding columns are decorated with military spolia, and have capitals surmounted by red (porphyry?) bases and large precious metal vessels. The painting from the left *ala* also contains a depiction of an ibis, a quintessentially Egyptian bird, while the painting from the right *ala* contains a depiction of a small kingfisher perching on a rocky outcrop, strikingly reminiscent of the birds from the fish *emblemata* in Pompeii. Clearly, then, the context and iconography of these paintings furnished them with an Egyptian frame of reference, and in view of its iconographic similarities it seems possible that the column-shrine of the Praeneste mosaic originally had a similar geographical signification.

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649 Luc., *Phars.*, X ll. 111-135.
650 Gullini 1956, 31-32; Wattel-de-Croizant 1986, 554; Lavagne 1988, 245; Meyboom 1995, 377-378 n. 36
651 Mentioned by Meyboom 1977, 69-70.
652 For these paintings see Sampaolo 1992, 55, 58-59.

In short, a series of contextual and the iconographic considerations suggest that the iconography of our Late Republican fish mosaics should be connected with Ptolemaic Alexandria. The date of the iconography is much more difficult to pin down. On the one hand, the scientifically accurate nature of the representations suggests that the iconography was conceived during the golden age of Alexandrian scholarship, and so before the mid-second century decline precipitated by Ptolemy VIII Euergetes II's expulsion of prominent intellectuals in *c.* 145 B.C.[653] On the other hand, analogy with the Nile Mosaic at Praeneste would suggest that it was formulated sometime during the third century B.C., perhaps during the reign of Ptolemy II Philadelphos.[654]

VI. The Significance of the Iconography

If the iconography of the fish mosaics of Praeneste, Pompeii and Panisperna originated outside of Italy, it follows that the question of the significance of this iconography has two distinct aspects. On the one hand, we need to consider the resonance of the mosaics in their archaeologically attested contexts in Campania and Latium. On the other, we need to make sense of the representations of fish in their earlier Hellenistic context, which, we have seen, should probably be associated with Ptolemaic Alexandria.

The surviving fish mosaics themselves are usually interpreted in gastronomic terms, since many of the depicted species are edible,[655] and since both Pompeian *emblemata* were laid in *triclinia,* rooms used for dining and drinking. This gastronomic interpretation fits well with contemporary and near contemporary Latin literature, in which fish are consistently

653 Ath., *Deipnosoph.*, IV 184b-c.
654 Meyboom 1977, 71-72; *Id.* 1995, 377-378 n. 36; cf. Steinmeyer-Schareika 1978, 99; Tammisto 1997, 38
655 Pollitt 1986, 225-226; De Vos 1994, 106; Andreae 2003, 128-130; contra Meyboom 1995, 369 n. 12.

characterised as expensive delicacies, and discussed in the context of the moralising discourse about the corrupting impact of *otium* on privileged members of society.[656] Juvenal, for instance, describes the red mullet – a creature depicted in the mosaic from House VIII 2, 16 – as a symbol of decadence and extravagance, and tells us that it lay well beyond the financial means of most married men.[657] The literary sources also attest to the popularity of raising fish, crustaceans and molluscs in domestic fishponds.[658] Indeed, L. Licinius Lucullus is said to have been so fond of the moray eels that he raised in his own pond that he earned the nickname "Muraena",[659] and such anecdotes find their archaeological counterparts in the fishponds that have been excavated in Pompeii and elsewhere.[660] In this light, it is not difficult to believe that the fish mosaics in the House of the Faun and House VIII 2, 16 were appreciated for their gastronomic resonance. As Jerome Pollitt wrote, "One can imagine learned diners discussing recondite points of ichthyology and pointing to the mosaics as they consumed their fish dinners."[661]

It is possible that the representations of fish also carried gastronomic associations in their original Hellenistic context, since the consumption of seafood was an important aspect of upper class living in the Hellenistic world. At the wedding feast of the Macedonian nobleman Karanos in the early third century B.C., for example, guests were served "oysters and scallops [ὄστρεα καὶ κτένες]" as part of an extravagant banquet that incorporated all manner of different edible delicacies.[662] We might also mention Books 3 and 7 of Athenaios' *Deipnosophistai*, which are replete with extracts from culinary texts concerning fish, many of which can be traced back to Hellenistic writers. Particularly notable, in this respect, was the

656 Reese 2002a, 274-291; Andreae 2003, 128-130; Wallace-Hadrill 2008, 338-345.
657 Juv., XI 37; VI 40.
658 The evidence is collected by Reese 2002a, 274-291.
659 Plin., *HN*., IX 171; Varro, *Rust.*, III 3, 10; Columella, *Rust.*, VIII 16, 10.
660 See now the detailed study of Higginbotham 1997.
661 Pollitt 1986, 225-256.
662 Ath., *Deipnosoph.*, IV 129c.

Hedypatheia written by the mid-fourth century B.C. poet Archestratos of Gela, which was concerned especially with fish, and which remained so well known that the Latin poet Ennius chose to model his own *Hedyphagetica* on it during the late-third or early-second century B.C.[663]

Be this as it may, the fish mosaics at Praeneste and Panisperna certainly did not decorate *triclinia*, and in these cases a gastronomic interpretation seems much less applicable, opening the possibility that the iconography may originally have carried associations of a different kind. As we have seen, the individual representations of fish and other marine fauna were characterised by their astonishing naturalism, suggesting that they relied on the first hand observation of real life specimens. Such a high level of precision is difficult to explain in purely decorative or gastronomic terms, and suggests that the iconography may originally have had a zoological or scientific thrust of some description. Strong evidence for this theory is supplied by the depiction of an octopus wrestling a lobster and/or a moray eel in all four mosaics, since these groups can all be directly associated with a passage of Aristotle's *History of Animals,* in which the author discusses the relative strengths of these three creatures:

> "The octopus is stronger than the spiny lobster, so that if the spiny lobster even sense an octopus in the same net, it dies of fear; but the spiny lobster defeats the moray eel, which cannot slip away from it because of its rough surface; and the moray eel eats the octopus, because the octopus cannot deal with it on account of its smoothness."[664]

The correspondences between this passage and the mosaics are very clear,[665] suggesting that some of the representations of fish in the mosaics were originally conceived within some kind

[663] De Caro 2001, 19; Wallace-Hadrill 2008, 340-341.
[664] Arist., *Hist. an.*, VIII 590b; cf. Plin., *HN.*, IX 88, 185; Plut., *Mor.* 978f-979; *De soll. an.*, 27; Oppian, *Hal.*, II 253, 257, 389; III 189; Ael., *NA.*, I 32; IX 25.
[665] De Puma 1970, 191-192; Meyboom 1977, 68; Mielsch 2005, 125-128.

of scientific framework, perhaps in tandem with or in response to zoological treatises in the Aristotelian tradition. This reading is perfectly consonant the astonishing accuracy of the individual representations of fish, and fits very neatly with the Alexandrian provenance of the iconography. After all, we have seen that cataloguing and classification constituted important elements of Alexandrian scholarship during the third and second centuries B.C., and it is likely that the iconography would have resembled a visual catalogue of species in its original Hellenistic context, as it did in the later Italian mosaics.

According to this interpretation, then, the Late Republican fish mosaics of Praeneste, Pompeii and Panisperna preserve the remnants of a sophisticated tradition of ichthyology and natural science centred in Hellenistic Alexandria. The outlines of this tradition are difficult to trace, and the earliest ichthyological treatise whose contents are known in any detail is Dorion's *On Fishes*, which wasn't composed until the first century B.C.[666] Still, a useful clue is supplied by the Souda entry on Kallimachos of Kyrene, which tells us that the great polymath wrote a text *On Changes in the Names of Fish* [Περὶ μετονομασίας ἰχθύων] at some stage during his career.[667] The exact nature of this treatise remains unknown, but its very existence suggests that ichthyology was an active academic field in Alexandria during the mid-third century B.C. More than this, it was clearly a field that engaged the interest of one of the pre-eminent intellectuals of the Ptolemaic royal capital, whose close connections with the royal family were outlined in Chapter One of this thesis.

In short, therefore, the original significance of the iconography probably lay in its unique mixture of artistic, scientific, and gastronomic qualities and associations. Perhaps the realistic representations of fish inspired zoological discussions amongst erudite individuals with a keen

[666] Corcoran 1964, 271-274; Kádár 1978, 63; Zucker 2008, 275-276.
[667] Souda *s.v.* Kallimachos.

interest in the natural world, or culinary debates among privileged men with a taste for expensive seafood, or some combination of the two. Alternatively, the decision to depict large numbers of sea creatures in a body of water might have all sorts of geo-political and ideological associations, which are unfortunately very difficult for us to re-construct. It is possible, for instance, that the choice of theme was intended to evoke ideas such as naval power and thalassocratic aspiration. The spolia attached to the Corinthian column of the column-shrine in the Praeneste mosaic support these kinds of readings, but in the current state of our evidence they remain entirely hypothetical.

VII. Conclusion

We have seen in this chapter that that the fish mosaics of Praeneste, Pompeii and Panisperna constitute fascinating works of art in their Late Republican contexts, but that it is only by tracing their Hellenistic heritage that we can truly appreciate the full significance of their iconography. These compositions testify to a marked interest in the observation and accurate representation of fish and other marine creatures, which should probably be connected to a broader interest in zoology and the natural world in Ptolemaic Alexandria. We have also seen how the mosaics provide precious information concerning the mechanics of the transmission of images during antiquity, suggesting that mosaicists sometimes had access to detailed designs on a 1:1 scale, carried on transportable models. This contradicts the usual view that the artists responsible for the fish mosaics worked from small-scale models such as pattern books.

There is no way of knowing the kind of space that the representations of fish decorated in their original Alexandrian context, but three considerations suggest that they *may* have adorned a space frequented by the uppermost echelons of Alexandrian society, possibly even

the kings themselves. Firstly, the Praeneste fish mosaic was the sister-piece to the Nile Mosaic, and we saw in Chapter Three that the latter composition depicted the Ptolemaic royal couple, and that it extolled the benefits of their campaigns in the lands lying to the south of Egypt. Secondly, an *opus vermiculatum* mosaic containing an astonishingly accurate representation of a dog has been excavated in the palatial district of Alexandria (Fig. 191), indicating that high quality representations of specific animals were displayed in royal settings in the Ptolemaic royal capital. Thirdly, we have seen that a fish mosaic decorated Room A of Palace IV in Pergamon, demonstrating that representations of fish were considered to be suitable and desirable in royal contexts during the Hellenistic period. The next chapter of this thesis turns to Pergamon itself, and to a series of mosaics that have been excavated in – or can be associated with – the Attalid royal capital. As we shall see, the phenomenon of producing accurate representations of animals also spread to Asia Minor during the second century B.C., and these representations seem to have been particularly popular in royal contexts.

Chapter Six:

The Mosaics of Attalid Pergamon:
Tryphē and Taxonomy in a Hellenistic Royal Capital

I. Prelude

Although the preceding chapters of this thesis have focused on particular works of art, we have repeatedly observed how our surviving ancient literature helps to illuminate the scholarly interest in zoology, taxonomy and paradoxography that emerged in Ptolemaic Alexandria during the Hellenistic period. By contrast, our texts provide relatively little evidence to suggest that this interest extended beyond the confines of the Ptolemaic kingdom. We know from two comic fragments attributed to the Attic playwrights Philemon and Alexis that Seleukos I Nikator (*r.* 306 – 281 B.C.) sent a tiger to the Athenians as a gift, probably during the late fourth century B.C.,[668] but there is no reason to believe that this should be related to a more wide-reaching programme of animal collection on the part of this king.[669] In Attalid Asia Minor, meanwhile, our most important testimony is supplied by Athenaios of Naukratis, who tells us that:

> "Ptolemy the king of Egypt says in Book IX of his *Commentaries*: When I visited Assos, the local people presented me with a pig [χοῖρον] that was four feet tall, proportionately wide across, and the colour of snow. They claimed that King Eumenes had been eager to purchase animals like this from them and had paid 4,000 drachmas apiece."[670]

The Ptolemy to whom Athenaios refers is undoubtedly Ptolemy VIII Euergetes II (*r.* 170 – 116 B.C.), and it follows that the Eumenes mentioned in the text was Eumenes II, king of Pergamon between 197 and 158 B.C. It is tempting to conclude that Eumenes collected remarkable animals in the manner pioneered by Ptolemy II Philadelphos, but two considerations urge caution in this respect. Firstly, the literary context in which Athenaios

668 Ath., *Deipnosoph.*, XIII 590a = Philemon fr. 49; Athen., *Deipnosoph.*, XIII 590b = Alexis fr. 207.
669 Contra Jennison 1937, 28.
670 Ath., *Deipnosoph.*, IX 375d = *FGrH* 234 F 10.

presents the passage is a gastronomic one, suggesting that the Attalid king may have been more interested in the taste of these enormous white pigs than in their extraordinary physical properties. Secondly, it is entirely possible that the Assians invented parts – or indeed all – of the tale in an attempt to convince Ptolemy VIII to pay an exorbitant sum of money for one of these creatures.[671] Perhaps the passage is best interpreted as another manifestation of the keen sense of competition that defined the relationship between Ptolemaic Egypt and Attalid Pergamon during the first half of the second century B.C.

Even if so, there is good evidence to suggest that animals were a subject of considerable interest in Hellenistic Pergamon. Indeed, a series of *opus vermiculatum* mosaics excavated in – or associated with – the Attalid royal capital contain astonishingly naturalistic representations of individual animals, particularly birds, which can only have stemmed from the observation of real life specimens. It is these mosaics that form the subject of the following chapter.

Our discussion begins with an analysis of a mosaic floor excavated in Pergamon itself, namely the pavement decorating the *Altargemach*, or "Altar Chamber", of Palace V. After evaluating the remarkable naturalism of the four representations of birds surviving in this composition, attention will shift to a series of late-second and early-first century B.C. mosaics from Italy containing small scale depictions of birds, which, it is argued, may testify to the existence of a more extensive repertoire of bird representations in the Attalid royal capital. The second part of the chapter, meanwhile, focuses on two mosaics attributed to the mosaicist Sosos of Pergamon by Pliny the Elder, one showing doves perching on the rim of a drinking bowl filled with water, the other depicting the leftovers of a meal as though lying on an "un-swept floor".[672] After re-constructing the iconography of these compositions, a range of evidence

[671] Suggested by Olson (2008, 236 n.56) in a footnote of his translation of the text.
[672] Plin., *HN*., XXXVI 184.

will be used to demonstrate that they were thematically and spatially unified, decorating a luxurious space used for dining and drinking somewhere in Pergamon. This will facilitate some conclusions concerning the kind of social and cultural *milieu* in which naturalistic representations of animals were employed in the Attalid royal capital, as well as in the Hellenistic world more broadly.

II. The Bird Mosaics of Palace V in Pergamon

Palace V in Pergamon formed part of the royal district of buildings on top of the acropolis of the ancient city (Fig. 2).[673] It was an asymmetrical, centripetal structure organised around a grand Doric peristyle, with rooms on its north, east and south sides, probably on two storeys (Figs. 151, 152).[674] The building has been dated to the reign of Eumenes II (197 – 158 B.C.) on several grounds, not least because its substructure incorporated discarded architectural members from the famous Great Altar, which is usually attributed to this king.[675] The mosaics decorating the palace were excavated 1886. From a stylistic and technical perspective, there is nothing to contradict the view that they were laid during the construction of Palace V, and that they should therefore be dated the first half of the second century B.C.[676] This chronology is supported by soundings taken underneath the mosaics, which yielded no material later than the mid-second century.[677]

The Altar Chamber of Palace V, also known as Room H, was the northernmost room in the eastern wing of the building, measuring 312 x 313 cm.[678] Almost the entire width of the room opened onto the peristyle, and a series of holes in the threshold indicate that it was closed by

673 For recent accounts of this palace district, see Zimmer 2011, 144-147; *Id.* 2014, 276-285.
674 Hoepfner 1996, 24-25.
675 Zimmer 2014, 281-282.
676 A useful summary of the evidence for the dating of the mosaics is provided by Tammisto 1997, 396.
677 Salzmann 1995, 109-110.
678 Ibid, 108.

a metal grille, meaning that the interior of the room would have remained visible to those moving around the building.[679] This feature was surely conditioned, to some extent, by the lavish decoration of the Altar Chamber, which consisted of pseudo-architectural "first style" wall paintings[680] and a spectacular mosaic floor. The latter was interrupted by a rectangular marble base set against the centre of the eastern (rear) wall of the chamber, on which stood an altar or a statue,[681] accounting for the modern nomenclature of the room (Fig. 153).

The mosaic floor contained an exceptional number of figural elements, all of which were oriented towards the entrance of the room. An initial re-construction of the floor was published in 1930,[682] but this has recently been revised thanks to the re-discovery of previously un-published sketches and photographs from the 1886 excavations (Fig. 154).[683] At the eastern end of the room, the marble base was flanked on either side by an *emblema* set in a field of white *tesserae*. The *emblema* to the left of the base was well preserved at the time of its discovery, and depicted a tragic mask, while the *emblema* to the right of the base was mostly destroyed, but preserved traces of a mouth with a beard, suggesting that it depicted a comic mask. Beneath these *emblemata*, the rectangular area occupying the rest of the floor was bordered by a series of friezes, the two most impressive of which were a broad band of coloured diamonds with rosettes in the corners, and a narrower bead-and-reel design set against a black background. This bead-and-reel was particularly opulent, judging by the excavators' report that the central parts of the beads had been deliberately broken away, presumably because they were fashioned from semi-precious stones or some other expensive material.[684]

679 Kawerau and Wiegand 1930, 31; Salzmann 1995, 108; *Id.* 2011, 104.
680 Nielsen 1999, 106.
681 Salzmann 1995, 108; Radt 1999, 69.
682 Kawerau and Wiegand 1930, 32 Abb. 39.
683 Salzmann 1991, 436-437; *Id.* 1995, 108-109; *Id.* 2011, 103-104.
684 Kawerau-Wiegand 1930, 63.

Inside these borders was a large rectangular area, which was divided into three long horizontal zones. The upper and lower zones were both *c.* 46 cm high, and each depicted a garland tied into three looping swags by *taeniae* knotted into bows, set against a light background. Only two thirds of the lower zone are preserved, but the surviving fragments indicate that its garland was distinguished by its extraordinary botanical variety, containing ivy leaves, linum flowers, bunches of grain, acanthus scrolls, carnation leaves, apples, oleanders, and flowers of different colours (Fig. 155).[685] Three small birds were shown perching on or near the surviving portions of the garland, and we shall return to these at a later juncture. The central horizontal zone, meanwhile, was *c.* 84.5 cm high, and was divided into three subsections by strips of lead. The two outer subsections were decorated with *emblemata*, only one of which was preserved at the time of discovery. This was the *emblema* of the left subsection, depicting a green bird that was quickly identified as a parrot (Figs. 156, 157).[686] The central subsection did not contain an *emblema*, but depicted a motif with "rundlichen Konturs" against a light background,[687] optimistically identified by one scholar as another bird of some description.[688]

It is thanks to this iconographic ensemble that the Altar Chamber of Palace V is usually interpreted as a shrine of Dionysos Kathegemon,[689] the tutelary deity of the Attalid dynasty whose public sanctuary was located on the lower theatre terrace of the city.[690] According to this reading, the *emblemata* depicting dramatic masks alluded to this god's role as the patron deity of theatre, and the mass of ivy in the lower garland was included as an explicitly Dionysian motif. The parrot *emblema* may also have had a Dionysian dimension, since virtually every ancient description of the this bird draws attention to the fact that it originated in

685 Tammisto 1997, 407, citing the botanical authority of Giulia Caneva.
686 Bohn 1886, 59.
687 Salzmann 1995, 109.
688 Tammisto 1997, 396.
689 Salzmann 1995, 108; Radt 1999, 69.
690 For this sanctuary, see Maischberger 2011, 242-247.

India,[691] the very land that Dionysos was believed to have conquered in Greek literature and thought.

Whatever its Dionysian resonance, the parrot *emblema* was a masterpiece of ancient art. Executed in stunning *opus vermiculatum*, it depicted a parrot in profile, perching on a small rectangular pedestal. The pedestal itself stood on a light brown surface, with a plain black background represented immediately above. Today the *emblema* survives in a "miserable condition" (Fig. 158),[692] but it is clear from the excavation photographs (Figs. 153, 156) that more was preserved at the time of its discovery. According to the 1930 publication of the mosaic, the damage was originally restricted to the beak, crown and lower feet of the bird, as well as small parts of its throat, belly and tail, and large portions of the pedestal and the background to its right.[693] The original and restored portions are clearly distinguished in a watercolour reconstruction of the composition produced for its initial publication (Fig. 157).[694]

Perhaps the most striking feature of the *emblema* is its stunning pictorial character, achieved by a combination of compositional and technical means. From a compositional perspective, the mosaicist took great care to render the perspective of the scene correctly, and this feature is demonstrated most clearly by the recession of the rectangular pedestal into space. He also introduced a definite light source, emanating from in front of the parrot and to its left, which caused the pedestal to cast a shadow on the light grey ground. From a technical perspective, meanwhile, the *tesserae* used to depict the bird were as small as half a millimetre and encompassed an astonishing range of colours and shades, permitting the mosaicist to render

691 Arist., *HA* VIII 577b; Paus., II 28, 1; Plin., *HN*., X 117; Apul., *Flor.*, XII; Solin., LII 43-45; Ov., *Am.* II 6, 1; Stat., *Silv.*, II 4, 25; Claud., *Eutr.*, II, 331.
692 Dunbabin 1999, 28.
693 Kawerau and Wiegand 1930, 63.
694 Grüßinger *et al.* 2011, 521-522 Cat. 5.47.

the bird in breath-taking detail. Its plumage incorporated innumerable different shades of green, as well as a selection of violets, greys, pinks, oranges, yellows, browns and blues that helped to enliven and distinguish the different elements of its morphology, including the individual feathers.[695] This was "ein wahres Steingemälde",[696] and there can be little doubt that the overall effect of the composition was comparable to that of the finest still life scenes of contemporary wall painting.

From a diagnostic perspective, the level of detail is such that there can be little doubt that the mosaicist aimed at depicting a specific ornithological species. Indeed, the morphology of the bird, its bright green plumage, the red collar on its neck, and the red-violet patch at the top of its wing coverts all indicate that it represented the Alexandrine parakeet (*Psittacula eupatria*), a species of parrot indigenous to India.[697] One scholar has claimed that the bird's feet – with two toes facing forwards, and two toes facing backwards – were also configured naturalistically,[698] but this view confuses the original and restored portions of the mosaic, since there is precious little to suggest that the lower parts of the feet were preserved at the time of its excavation. In any case, the bird was depicted with sufficient accuracy to permit an assured taxonomic identification, suggesting that the representation was based on the observation of a real life specimen, in the manner of the late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna.

The notion of first hand observation of an Alexandrine parakeet fits neatly with our surviving historical evidence. It is commonly held that the first parrots were brought to the Greek world by Nearchos in the wake of Alexander the Great's Indian campaign,[699] and the modern

695 Tammisto 1997, 397.
696 Kawerau and Wiegand 1930, 61.
697 Tammisto 1997, 82, 95, 396-397.
698 Ibid, 82.
699 Nearchos, FGrH 133 F 9; cf. Rice 1983, 94.

nomenclature of the species reflects its enduring association with the Macedonian conqueror. While there is nothing in the *emblema* to suggest that it was intended to evoke Alexander and/or his conquests in the East, it is possible that the species itself carried associations of this kind, in a manner comparable to its Dionysian frame of reference that led to its incorporation into the overarching decorative programme of the room.[700] Whatever its historical and mythological significance, the decision to represent an Alexandrine parakeet also had geo-political dimension, since the process of acquiring this quintessentially Indian creature and then keeping it in captivity and depicting it with such great accuracy would have provided a tangible manifestation of the extraordinary scope of Attalid contacts and control during the first half of the second century B.C. In addition to its faraway geographical origins, the arresting appearance of the bird and its remarkable ability to imitate human speech would have ensured that the parrot *emblema* and/or any specimens kept in captivity would have satisfied any taste on the part of the kings for *paradoxa* stemming from the outermost fringes of the known *oikoumene*. An analogy with the caged parrots [ἐν ἀγγείοις ψιττακοὶ] paraded through the streets of Alexandria during the Grand Procession of Ptolemy II Philadelphos is as obvious as it is compelling.[701]

Still, it is important to recall that the Alexandrine parakeet was not the only bird depicted in the mosaic floor of the Altar Chamber of Palace V. As we have already mentioned, representations of three birds have been preserved in the surviving fragments of the lower garland. These constitute only a portion of what there once was, and one scholar has proposed that the upper and lower garlands may originally have each been home to up to six birds, making a total of up to twelve overall.[702] On the one hand, the artistry of the garlands was technically inferior to that of parrot *emblema*, predominantly because the *tesserae* used were

[700] A possibility raised by Tammisto 1997, 84, 95.
[701] Ath., *Deipnosoph.*, V 201b.
[702] Tammisto 1997, 105.

considerably larger, each measuring *c.* 0.2 cm.[703] On the other hand, the three surviving birds were depicted with a very high level of naturalism, and have been convincingly identified with specific ornithological species that were indigenous to Asia Minor.[704] The two specimens shown perching on twigs springing from the garland are particularly remarkable in this respect. To the left, the small songbird with brown upper parts, white lower parts, and a reddish brown tail is clearly a common nightingale (*Luscinia megarhynchos*) (Fig. 159). To the right, the passerine with a black face, throat and wings and a white crown, back and belly is undoubtedly a wheatear, either a Finsch's wheatear (*Oenanthe finschii*) or an example of the eastern subspecies of the black-eared wheatear (*Oenanthe melanoleuca*) (Fig. 160). The accuracy of these representations is confirmed by a comparison with the passerines depicted in mosaics and wall paintings surviving from late Hellenistic and early Imperial Italy, which are usually identifiable only by family or by order.[705] In any case, a third bird depicted beneath the garland is less accurate in some of its details, but can still be identified as a green woodpecker (*Picus viridis*) on the basis of its "habitus and colours" (Fig. 159).[706]

Viewed in tandem, therefore, the parrot *emblema* and garland mosaic of the Altar Chamber of Palace V testify to an interest in producing naturalistic representations of different ornithological species in Attalid Pergamon. They also demonstrate that compositions incorporating such representations were deemed apposite for the decoration of buildings frequented by the uppermost echelons of Pergamene society. And while only four examples are preserved in the mosaics of the Altar Chamber, there are very good reasons to believe that the Pergamene repertoire of bird illustrations may originally have encompassed a broader selection of ornithological species.

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[703] Ibid, 395.
[704] Kawerau and Wiegand 1930, 62; Tammisto 1997, 107-109.
[705] Tammisto 1997, 143-148.
[706] Ibid, 108.

III. Pergamene Birds in Italian Mosaics?

The Alexandrine parakeet in the *emblema* from Palace V is the oldest surviving representation of this bird surviving from the Greek-speaking world, but it was not long before the species was depicted once again in Italian mosaics of the late-second and first centuries B.C.[707] Indeed, two parrots were represented in the fish *emblema* from the House of the Faun in Pompeii discussed in Chapter Five (Fig. 128), not in the central seascape itself, but perching on precious metal vessels that served as focal points in the surrounding decorative border (Figs. 161, 162).[708] This border depicted a colourful acanthus scroll against a black background, arranged around a precious metal vessel in the centre of each side, and inhabited by an array of small creatures including six winged Erotes, a grasshopper, a butterfly, a snail, a dog, a rabbit, a mouse, and six birds. Whilst the two parrots recall the *emblema* from Palace V, several other features of the border indicate that it may have owed a debt to the art of Hellenistic Pergamon.[709] Most notably, the border exhibits close correspondences with another mosaic excavated in Palace V, namely the acanthus scroll frieze framing the central field of the so-called Hephaistion mosaic in Room K (Figs. 163, 164).[710] This, too, depicted a lively scroll set against a black background, inhabited by Erotes, grasshoppers and butterflies, and a specific point of contact between the friezes is supplied by the presence in both of an Eros grabbing the wings of a butterfly.[711] Two other birds depicted in the Pompeian border also support the notion of Pergamene artistic influence. The specimen perching on a vase in the centre of the upper side has been identified as a green woodpecker on the basis of its

[707] For a full list of examples, see Tammisto 1997, 82.
[708] For a full account of this border, see Tammisto 1997, 117-120.
[709] Toynbee and Ward-Perkins 1950, 10; Pappalardo 1982, 275-280; Castriota 1995, 46-47; Tammisto 1997, 119-120
[710] For the Hephaistion mosaic, see Salzmann 1995, 103-107; *Id.* 2001, 293; Kriseleit 2000, 17-23.
[711] Castriota 1995, 46.

"strong beak and colours",[712] recalling the specimen in the Altar Chamber garland, while the owl perching on a vessel on the right hand side (Fig. 165) is reminiscent of the owls depicted in the relief decoration of the propylon of the temple of Athena Nikephoros in the Attalid royal capital (Fig. 166).[713]

Pergamene influence has also been suggested in the case of the acanthus scroll border surrounding the fish mosaic from San Lorenzo in Panisperna, a composition that was also discussed in the previous chapter.[714] Here the design consisted of an acanthus scroll with looping volutes and blossoming leaves and flowers, set against a white background (Fig. 135). The surviving potion of the scroll is inhabited by a snake, a grasshopper, a butterfly, and six different birds, but what survives is only a portion of what there once was, and it is possible that the border originally contained "at least a dozen, probably some 25-35 or more" birds.[715] In any case, one of the surviving specimens is clearly an Alexandrine parakeet, resembling the example from the Altar Chamber *emblema* in respect of its pose and colouration (Fig. 167). Of the five remaining birds, two are identifiable by species, namely the drake mallard (*Anas platyrhynchos*) and the roller (*Coraciidae* family), while another may represent a dove looking backwards over its shoulder (Fig. 168), recalling a series of similar doves that were depicted in later versions of a composition attributed to Sosos of Pergamon that will be discussed in the next part of this chapter.

The geographical origins of the birds represented in both mosaics are consistent with the view that they derived from a Pergamene ornithological repertoire,[716] but in the absence of additional evidence this theory needs to be treated with considerable care. From a

712 Tammisto 1997, 119.
713 Rumscheid 1994, 278.
714 For accounts of this border, see Tammisto 1997, 120-122; Andreae 2003, 144-145.
715 Tammisto 1997, 121.
716 Ibid, 189.

methodological point of view, it is perfectly conceivable that these bird representations originated outside of Attalid Pergamon, despite the fact there is good evidence to suggest the mosaicists responsible for both compositions utilised artistic models that can be connected with the great centres of the Hellenistic world.[717] We should also recognise that even if a particular bird representation can be associated with a particular artistic centre, it does not necessarily follow that the other bird representations belonging to the same composition originated in the same centre. From a compositional perspective, meanwhile, the notion that the acanthus scroll border of the fish *emblema* from the House of the Faun should be associated with Attalid Pergamon stands at odds with our earlier conclusion that the iconography of the seascape itself can be connected to a composition from Ptolemaic Alexandria. In other words, we are required to believe that Alexandrian and Pergamene iconography was combined within a single *emblema*, in the manner of several other works of art surviving from the Bay of Naples.[718]

At the very least, however, these Italian friezes provide some indication of the kind of ornithological variety that seems to have constituted something of a hallmark of Pergamene art during the second century B.C. After all, we have already seen that the two garlands that decorated the floor of the Altar Chamber of Palace V incorporated representations of up to six birds apiece, and it would be unsurprising if the composition that formed the pendant to the parrot *emblema* in the central horizontal zone likewise contained a still life representation of a single ornithological specimen. We can only speculate whether birds such as the owl, the drake mallard and the roller were depicted in compositions such as these in the Attalid royal

[717] As we saw in Chapter Five.
[718] Notably the variant of Sosos' drinking doves mosaic from Capua, in which the dove and two parrots perching on rim of a bowl clearly derive from Pergamene models, while the cat standing on the ground beneath them is clearly a variant of the specimen depicted in the cat and bird *emblema* from the House of the Faun, whose Alexandrian origins were discussed in Chapter Five.

capital: if so, it is very possible that the representations of these species in later Italian mosaics descended from Pergamene models.

IV. Sosos' Doves

We know of one further mosaic in Pergamon that incorporated representations of birds thanks to the testimony of Pliny the Elder, writing in the second half of the first century A.D. In Book 36 of the *Natural History*, we are told that:

> "Paved floors [Pavimenta] originated among the Greeks and were skilfully embellished with a kind of paintwork until this this was superseded by mosaics [lithostrata]. In this latter field the most famous exponent was Sosos, who at Pergamon laid the floor of what is known in Greek as 'the Upswept Room' [asaroton oecon] because, by means of small cubes tinted in various shades, he represented on the floor refuse from the dinner table and other sweepings, making them appear as if they had been left there. A remarkable feature in the picture is a dove, which is drinking and casts the shadow of its head on the water, while others are sunning and preening themselves on the brim of a large drinking vessel [mirabilis ibi columba bibens et aquam umbra capitis infuscans; apricantur aliae scabentes sese in canthari labro]."[719]

It is likely that Sosos laid the mosaics described by Pliny during the period of Attalid control in Pergamon: that is, prior to 133 B.C. The motif of doves perching on the rim of a drinking vessel was nothing new at this time, judging by its depiction on several funerary reliefs of the fourth century B.C.[720] Still, Pliny's decision to draw attention to Sosos' version of the subject suggests that it may have been exceptional in some sense,[721] and this seems all the more likely

[719] Plin., *HN*., XXXVI, 184.
[720] Parlasca 1963, 283-285; Werner 1994, 103.
[721] For an introduction to Pliny's criteria of selection, see now Murphy 2004, 1-25.

when we consider that Pliny's discussion of Sosos is, in fact, the only surviving reference to a specific mosaicist in our ancient literature.[722]

No mosaics depicting doves on drinking bowls have yet been excavated in Pergamon itself, although the subject does appear in a later wall painting from Room 36 of the House of the Consul Attalos (Fig. 169).[723] Several versions do survive in mosaics from Italy and elsewhere, but these compositions exhibit pronounced differences in style and iconography, making it very difficult to re-construct Sosos' mosaic with any degree of certainty. Even if so, it is striking that two of these mosaics incorporate representations of other birds that are likewise known to have been depicted in Attalid Pergamon. A version from Capua shows two parrots perching on a drinking vessel together with a dove (Fig. 170),[724] while a version from Ostia shows a parrot and a black-eared wheatear standing in the area beneath the dove motif, together with a third bird that has been identified as either a wryneck or a chukar-type partridge (Fig. 171).[725] The parrots in both compositions recall the *emblema* from the Altar Chamber of Palace V, while the black-eared wheatear in the Ostian variant calls to mind the specimen perching on the Altar Chamber garland, and these correspondences support the notion that the dove motif had a peculiarly Pergamene frame of reference.

In any case, the most technically accomplished version of the subject is the *emblema* excavated in the Academy of the Villa of Hadrian at Tivoli in 1737, which is today displayed in the Palazzo Nuovo of the Capitoline Museums (Fig. 172).[726] This *emblema* is *c.* 98 cm wide and *c.* 86 cm tall, and consists of a series of monochrome borders – some of which are restored – and a sophisticated bead-and-reel surrounding a central pictorial field. The central field is *c.* 65

[722] The general anonymity of ancient mosaicists is discussed by Dunbabin 1999, 269-273.
[723] Jashemski 1993, 390-391; Radt 1999, 97; Grüßinger *et al.* 2011, 486 Cat. 3.147.
[724] Tammisto 1997, 75, 80-81, 380-381.
[725] Ibid, 76-78, 382-384.
[726] For the discovery of the mosaic, see De Franchesini 1991, 337; Werner 1994, 102-103.

cm wide and *c.* 54 cm tall, and is executed in stunning *opus vermiculatum*, with some *tesserae* as small as 0.1 cm. It depicts four doves perching on the rim of an elaborate bronze bowl set against a plain black background, which itself stands on a rectangular board resting on a flat brown surface. Three doves preen themselves while the dove second from the right drinks from the bowl, causing a series of concentric ripples to form on the surface of the water. This is a work of "astonishing painterly character",[727] which ranks among the finest mosaics surviving from antiquity.

It was partially on this basis that Michael Donderer boldly resurrected the theory that the Capitoline mosaic is, in fact, Sosos' original, lifted from its original Pergamene context and re-laid in the Villa of Hadian at Tivoli.[728] Donderer deployed a variety of arguments to support his theory, but lying at its heart was the technical observation that the mosaic is an *emblema,* a self contained panel that was pre-fabricated before being laid, which was, by its very nature, removable and transportable. The theory has met with scepticism, but it does succeed in highlighting two separate issues that require consideration when evaluating the Capitoline mosaic: the date of the composition on the one hand, and the date at which its iconography was formulated on the other. With respect to the former, the *emblema* format makes it very difficult to date the composition with any degree of certainty, especially when we consider that the sophisticated *opus vermiculatum* finds parallels all the way from Hellenistic to Hadrianic times. One recent study has drawn attention to the fact that the bead-and-reel border contains *tesserae* manufactured from "sealing wax red glass", and has tentatively suggested that the composition should be dated to late Hellenistic times on the basis of occurrences of this material elsewhere.[729]

[727] Dunbabin 1999, 27.
[728] Donderer 1991, 189-197; *Id.* 1999, 91-92.
[729] Boschetti, Boccaccini, Corradi, Kamseu and Leonelli 2008, 503-511, especially 509-510.

We are on firmer ground when assessing the date of the iconography of the composition, as there are good reasons to believe that it was conceived during the Hellenistic period. The argument hinges on the precious metal vessel depicted in the mosaic, which stands on three feet resembling spools of thread. A superb egg-and-dart pattern decorates its rim, and to the viewer's left there is a movable handle in the form of a ring, presumably with a counterpart on the opposite side. Immediately beneath the handle there is a female figure in relief, cast into the metalwork or added as an applique. Her right arm is raised above her head, and her wings and tail feathers identify her as a Siren.[730] In an important article, Sven Kielau has shown that two close parallels for this vessel survive in the archaeological record: a silver basin from Tchertomlyk and a bronze basin from Kurdzhips-Kurgan (Fig. 173), both of which have been dated to between *c.* 350 and *c.* 250 B.C.[731] To these we should add the stunning bronze *lebes* from the collection of Barbara and Lawrence Fleischman, now in the Getty Museum, which likewise has feet resembling spools of thread, and is usually attributed to a Greek workshop of the first century B.C. (Fig. 174).[732] Together these vessels suggest that the vessel depicted in the Capitoline mosaic can be attributed to a late Classical or Hellenistic milieu, providing strong support for the notion that the iconography of the composition dates back to Hellenistic times. We might also mention the leftmost dove shown perching on the vessel, since it is exceptionally similar to the leftmost dove in a mosaic from Delos depicting precisely the same subject, which, thanks to the history of the island, can be dated with some confidence to between *c.* 130 and 90 B.C. (Fig. 175).[733]

Of course, recognition that elements of the mosaic can be contextualised in the Hellenistic period opens up the very real possibility that its iconography re-produced aspects of Sosos'

730 Kielau 2004, 492-494.
731 Ibid, 496-498; cf. Meyer 1977, 109, who writes that "Die Form der Schüssel, die Verziegung des Randes und die garnrollenartigen Füße sind gängig hellenistisch".
732 Getty 2010, 50-51; Mattusch 2014, 52-53; Picón and Hemingway 2016, 311 no. 261.
733 Bruneau 1972, 95-100.

famous mosaic in Pergamon, and fits neatly with the usual orthodoxy that the Capitoline *emblema* is closest to Sosos' original among our surviving versions of the subject.[734] Strong evidence for a Pergamene connection is supplied by a series of compositional correspondences between this mosaic and the parrot *emblema* from Palace V discussed earlier in this chapter.[735] In both instances, ornithological subjects are depicted against a plain black background, with light emanating from a single source outside of the scene, in front of and slightly to the left – the viewer's right – of the represented bird(s). The board supporting the drinking vessel in the Capitoline mosaic also seems to correspond to the parrot's pedestal in the Pergamene *emblema*, not only in respect of its function, but also because its rear edge terminates at the junction between the flat ground on which it stands and the plain black background behind it in precisely the same manner.

These similarities are clear, but the notion of a direct connection between the Capitoline mosaic and Sosos' version of the same subject is complicated by the discrepancies between the iconography of the former and the description of the latter supplied by Pliny the Elder. Indeed, Pliny tells us that Sosos' doves were perched on a *kantharos*, which the basin depicted in the Capitoline mosaic most certainly is not, and he also mentions a shadow cast on the water by the dove drinking from the vessel, whereas the only traces of a shadow in the mosaic are cast by the rightmost dove preening itself on the rim of the vessel. It is also worth noting that the mosaicist responsible for the Capitoline mosaic did not succeed in rendering the recession of the board into space correctly, making it appear slightly trapezoid in shape rather than rectangular.[736] One wonders whether a Hellenistic master of Sosos' calibre would have made this kind of mistake.

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[734] Notable exceptions are supplied by Pernice 1938, 164 and Andreae 2003, 164, both of whom interpret the version from the House of the Doves at Pompeii as being closest to Sosos' original.
[735] Kielau 2004, 501-502.
[736] Pointed out by my supervisor Prof. R.R.R. Smith during a Master's tutorial in May 2012.

Clearly, then, it is very difficult to assess just how far the dove mosaic from the Villa of Hadrian at Tivoli re-produces the iconography of Sosos' famous version of the same subject. The most we can say is that the iconography of the composition seems to be Hellenistic in conception, although it is unclear whether the *emblema* itself is a Hellenistic original or a Hadrianic version of an earlier work of art. Despite these uncertainties, it is clear that Sosos' mosaic was a piece of outstanding quality, and that it incorporated representations of several birds that were immediately recognisable as doves or pigeons (*Columbidae* family). Whether these birds were speckled in the manner of three of the doves in the Capitoline mosaic or white like the six specimens in the version from the House of the Doves in Pompeii we cannot say.[737] But all of our available evidence indicates that they were depicted with a high level of naturalism, suggesting that Sosos may have relied on the observation of real life specimens when designing his composition.

V. Between Art and Ornithology

Viewed in tandem, therefore, the mosaics of Palace V, the friezes of two mosaics from Italy, and the evidence for Sosos' doves all suggest that accurate representations of different ornithological species were a hallmark of the art of Hellenistic Pergamon. An Alexandrine parakeet, a common nightingale, a black-eared wheatear or Finsch's wheatear, a green woodpecker and a series of doves and/or pigeons were all certainly represented in mosaics laid in the Attalid royal capital, and it is clear that several more birds were originally represented in the floor of the Altar Chamber of Palace V. Some indication of the missing birds *may* be provided by the acanthus scroll borders framing the fish mosaics from the House of the Faun and San Lorenzo in Panisperna, as well as the dove mosaic from Ostia, in

[737] Tammisto (1997, 75) identifies the pigeons depicted in this Pompeian *emblema* and the aforementioned mosaic in Delos as the most taxonomically accurate of all of the representations of this species in our surviving pigeon mosaics.

which case an owl, a drake mallard, a roller, several more passerines and a wryneck and/or chukar-type partridge might also have numbered among the represented species.

A salient characteristic of the birds represented in the Altar Chamber mosaics is their remarkable naturalism, which suggests that their designs relied on the observation of real life specimens. In practical terms, this would have entailed keeping birds in captivity, and it is therefore unsurprising that scholars have sometimes speculated about the existence of an *ornithotropheion* in the Attalid royal capital.[738] Direct evidence for such a facility is lacking, but it is worth noting that birds were certainly kept in captivity in Ptolemaic Alexandria during the third and second centuries B.C., judging not only by the specimens paraded in the Grand Procession of Ptolemy II Philadelphos, but also by the fragment from the *Hypomnemata* of Ptolemy VIII Euergetes II quoted in Chapter One, which records that Ptolemy VI Philometor (*r.* 180-145 B.C.) kept "the variety of pheasants known as *tetaroi*" and "*nomades* birds" in the royal palace.[739]

The crucial question, of course, is whether this process of keeping birds in captivity and representing them naturalistically was accompanied by tangible advances in scientific knowledge. None of our surviving evidence indicates that ornithological treatises were composed in Pergamon during the Attalid period, but it is clear that birds were a subject of interest in Hellenistic scholarship, judging by the Souda's testimony that Kallimachos of Kyrene composed a treatise *On Birds* [Περὶ ὀρνέων] during the third century B.C.[740] It may also be significant that the *Ornithiaca*, an ornithological treatise written in first century B.C. by one Dionysios, is thought to have been based on an earlier treatise *On Animals* written by

[738] Stresemann 1960, 43-44; Kádár 1978, 87; Tammisto 1997, 107.
[739] Athen., *Deipnosoph.*, XIV 654c.
[740] Souda *s.v.* Kallimachos.

Alexander of Myndos, whose hometown was situated firmly within reach of the old Attalid royal capital.[741]

In the current state of our evidence, the most that we can say is that a repertoire of bird representations was formulated in Attalid Pergamon during the Hellenistic period, and that these representations incorporated scientific knowledge by virtue of their remarkable realism. There are obvious parallels with the accurate representations of fish discussed in Chapter Five, which, as we saw, should probably be traced back to the art of Ptolemaic Alexandria. Like these ichthyological representations, the Pergamene birds translated nature into art with unprecedented accuracy, and relied on the first hand observation of real life specimens. From a practical perspective, it seems unlikely that Sosos and his compatriots observed real birds while laying the mosaics themselves, since this was such a painstaking and time-consuming process. Rather, it is more likely that they utilised detailed designs carried on pre-existing prototypes, which had already been formulated with reference to the species concerned.

VI. Sosos' Un-swept Floor

The notion that Pergamene mosaicists used detailed prototypes is supported by the evidence for the second mosaic attributed to Sosos of Pergamon by Pliny the Elder, namely his *asàrotos òikos* or "un-swept floor". According to the passage from the *Natural History* quoted above, this composition depicted "refuse from the dinner table and other sweepings, making them appear as if they had been left there".[742] Like Sosos' dove mosaic, a series of later versions of the un-swept floor survive, ranging in date from the first century B.C. to the sixth century

[741] Wellmann 1891, 506-539; Kádár 1978, 78, 88 n. 4; Tammisto 1997, 189-190.
[742] Plin., *HN*., XXXVI 184.

A.D.[743] These later versions exhibit considerable diversity, making it very difficult to re-construct Sosos' original with any degree of certainty.

Our finest surviving version of the subject was found in 1833 on the Aventine in Rome, just outside the "Bastione dei Sangallo" constructed on the site of the Porta Ardeatina of the ancient Aurelian Wall.[744] Here the un-swept floor mosaic formed an elaborate border framing a lost central field, while a second border immediately inside depicted a Nilotic scene featuring Egyptian fauna and flora set against a black background (Fig. 176). These borders were laid in the centre of a large room whose walls were adorned with niches framed by half-columns, and were themselves surrounded by an elegant floor of *opus sectile* (Fig. 177).

Executed in stunning *opus vermiculatum*, the mosaic was *c.* 4.05 m long on each side and *c.* 0.75 m wide, depicting the leftovers of a lavish banquet as though scattered over the floor of a dining hall.[745] Among the debris are fish bones, chicken feet, a chicken head, small animal bones, sea urchins, artichokes, lettuce leaves, cherries, grape stalks, figs, chestnuts, walnuts, and the remains of molluscs and crustaceans (Fig. 178). These remains were interrupted on the western side by a separate field showing six dramatic masks and a selection of ritual and theatrical objects, beneath which a horizontal white band enclosed the signature of the mosaicist, "ΗΡΑΚΛΙΤΟC ΗΡΓΑCΑΤΟ" ("Herakleitos executed [me]"). The viewing axis established by the signature suggests that the entrance to the room was positioned on this same western side, and support for this notion is supplied by the drop-shadows cast by the un-swept leftovers on the white floor, which were originally oriented as though illuminated by

[743] The best surveys of the surviving versions are provided by Moormann 2000, 80-87 and Perpignani and Fiori 2012, 11-15, 39-58.
[744] For the find spot of the mosaic, see Werner 1994, 120; *Id.* 1998, 260-265.
[745] For descriptions of the pavement, see Werner 1994, 120-127; *Id.* 1998, 265-268; Liverani and Spinola 2003, 104-106.

a single light source shining from this direction.[746] The composition is today displayed in the Museo Gregoriano Profano of the Vatican Museums, and is usually dated to the Hadrianic period thanks to the coffer and waveband motifs enclosing the un-swept floor frieze, both of which lack parallels prior to the second century A.D.[747] The dramatic masks above Herakleitos' signature likewise find their closest counterparts in the art of Hadrianic times.[748]

Assessing the original iconography of the Vatican un-swept floor is a delicate task, since the composition has been subjected to a series of restorations and consolidations since its piecemeal removal from the Aventine during the nineteenth century (Fig. 179).[749] Still, the pavement seen today is broadly in keeping with the original, judging by a silk tapestry depicting the mosaic that was modelled on a drawing of the composition made by Gaetano Ruspi at the time of its discovery (Fig. 180). It is much more difficult to assess the relationship between the Vatican composition and the mosaic laid by Sosos in Pergamon some three centuries earlier. It has long been recognised that the Vatican mosaic stands out from the other surviving versions of the same subject by virtue of its technical virtuosity and stunning illusionism, but this in itself does not constitute evidence that it was modelled on Sosos' original. Stronger support for this view is supplied by two compositional observations that indicate that the iconography of the mosaic was originally conceived as a single entity, rather than being a compendium of separate motifs. Firstly, we have seen that the drop-shadows cast on the white ground by the un-swept leftovers are all aligned as though illuminated by a single source of light. Secondly, the relative scale of these leftovers is both realistic and unerringly consistent.

[746] Werner 1998, 264-265; Liverani and Spinola 2003, 104; Perpignani and Fiori 2012, 47.
[747] Werner 1994, 124; *Id.* 1998, 267-268.
[748] Werner 1994, 124.
[749] For the modern history of the mosaic, see Werner 1998, 260-264.

The question remains open, but there is every reason to believe that the Vatican un-swept floor preserved the spirit of Sosos' original, and it will be useful here to consider it in these terms. From an iconographic perspective, the most striking feature of the composition is that it simultaneously pretended to be and was a floor, achieving a *trompe l'oeil* effect that embraced the full potential of the medium of mosaic. Sosos' un-swept floor was surely similar in this respect, especially when we consider that illusionism of this kind can be paralleled in the surviving art of Attalid Pergamon. Indeed, the aforementioned Hephaistion mosaic in Room K of Palace V preserved a small section of *opus vermiculatum* showing the mosaicist's signature – "ΗΦΑΙΣΤΙΩΝ ΕΠΟΙΕΙ" ("Hephaistion made [it]") – written on a small piece of parchment held down at its corners by sealing wax (Fig. 181). Here the *trompe l'oeil* effect was underscored by the bottom right hand corner of the parchment, which has come away from the ground and curls upwards towards its centre, casting a shadow immediately underneath. The representation of parchment was particularly apposite in this context: Pliny the Elder reports that when Ptolemy V Epiphanes (*r.* 204 – 180 B.C.) banned the export of papyrus from Egypt due to his concern at the rapid growth of the Pergamene royal library, the Attalids responded by inventing parchment as an alternative writing material.[750]

In the case of the Vatican mosaic, the *trompe l'oeil* effect was accentuated by the astonishing realism of the individual leftovers, all of which remain readily identifiable to the modern viewer. As early as 1933, Alessandro Della Seta recognised that some of the carnivorous remains exhibit a level of accuracy that is comparable to representations of *living* animals depicted in other *opus vermiculatum* mosaics,[751] but it is striking that no specific parallels have been adduced in the years since. A stimulating point of comparison is, in fact, supplied by the Late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna analysed in Chapter Five,

[750] Plin., *HN*., XXX 70.
[751] Della Seta 1933, 150: "doveva essere stata messa nella rappresentazione di questi avanzi del pasto la stessa accurate osservazione della natura che… nei mosaici con animali."

since much of the seafood depicted in the Vatican mosaic seems reminiscent the individual species represented in these compositions.

An instructive example is provided by one of the two fish bones represented in the Vatican un-swept floor, which belongs to one of the small sections of the composition that has escaped partial or wholesale restoration in the years since its removal from the Aventine (Fig. 182). Much of the dead fish's body is missing, having been eaten by an imaginary banqueter, but the head and caudal fin at either end of the vertebral column are rendered in sufficient detail to justify the conclusion that it represented a particular ichthyological species. Two details of the head are particularly telling in this respect. Firstly, and most importantly, the fish has two pairs of barbels, one immediately below the mouth and another at the posterior end of the two gills. Secondly, the gills themselves are rendered in some detail, and are distinguished from the fish's grey and silver scales by their deep red colour. In both its morphology and colouration, this fish closely resembles the striped red mullet (*Mullus barbatus*) depicted in the fish *emblema* from the House of the Faun in Pompeii, suggesting that it, too, represents a mullet of some description. Strong support for this conclusion is supplied by the repeated emphasis placed on the gastronomic qualities of *Muglidae* family in the ancient literature.

A second example is supplied by the five purple dye murex (*Murex brandaris*) shells dispersed among the débris of the Vatican floor (Fig. 183). In each case, the morphology of the shell has been rendered in astonishing detail, seen particularly in the careful representation of the rows of spikes on the body whorl that indicate the end of each growth stage, and in the slight curvature of the siphonal canal. Murices were also depicted in the *emblemata* from the House of the Faun and House VIII 2, 16 in Pompeii, but in these cases the morphology of the species was simplified and schematised, resulting in representations that were less naturalistic

than the examples in the Vatican mosaic. Only the murex depicted in the largest surviving fragment of the fish mosaic from San Lorenzo in Panisperna exhibits a comparable level of accuracy.

A final parallel is supplied by the large quantity of 'crustacean parts' scattered among the remains of the Vatican un-swept floor. These encompassed a number of different types of leftover, including long tapering parts with sharp spines at the broad end, no doubt the biramous antennae of spiny lobsters (*Palinurus vulgaris*) (Fig. 184); and thinner parts divided into distinct horizontal sections, probably the walking legs of the same species (Fig. 185). Like the fish bone that we have already discussed, these crustacean parts were, in effect, isolated portions of a complete zoological species, but this did not prevent them from being represented with a very high level of accuracy. A comparison with the spiny lobsters represented in the fish mosaics of Praeneste and Pompeii is instructive in this respect, since the leftovers of the Vatican floor seem more naturalistic than the corresponding parts of the complete specimens depicted in these compositions. Most notably, the biramous antennae dispersed on the un-swept floor are modelled with remarkable sensitivity, seen particularly in the subtle use of many different shades of red and brown to re-produce the sharp spines characteristic of real life specimens. The antennae of the lobster depicted in the *emblema* from House VIII 2, 16 (Fig. 132), on the other hand, have been dramatically simplified, with the sharp spines rendered as a series of exaggerated triangular spikes.

Clearly, then, the seafood depicted in the Vatican un-swept floor exhibited a level of naturalism that matched – or, in some cases even *exceeded* – that of the individual sea creatures depicted in the Late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna. This is truly remarkable, and suggests that the representations of individual fish bones, murex shells and crustacean parts were founded on the observation of real leftovers, in much the same

way that the accurate representations of birds discussed in this chapter depended on the observation of real life specimens. This theory is supported by the other food remains depicted in the composition, all of which were represented with a comparable level of accuracy, and so probably also depended on the observation of real leftovers.[752] If we suppose that Sosos' original un-swept floor in Pergamon represented a similarly diverse selection of débris, and that his composition likewise depended on the observation of real leftovers, then there are important implications for our appreciation of his methods. From a logistical point of view, it seems very unlikely that Sosos would have consulted real leftovers while laying the mosaic itself: this would have involved acquiring a steady supply of remains from expensive foodstuffs over an extended period of time, and depicting each remain before it began to rot or go bad. Rather, it seems much more likely that he utilised artistic intermediaries carrying detailed designs of the individual leftovers, executed on at least a 1:1 scale, and designed at an earlier juncture. We can only speculate about the form that these intermediaries might have taken, but one possibility is that the designs were carried on the whitened wooden boards known as *pinakes, leukomata* or *sanides* that were mentioned in the previous chapter. In any case, an indication of the large quantity of designs carried by the intermediaries is supplied by the Vatican mosaic, since even the individual types of leftover depicted in this composition exhibit astonishing variety.

In short, therefore, Sosos' famous un-swept floor mosaic constituted an unusual and playful manifestation of the Hellenistic trend of depicting animals naturalistically in art. While there is nothing to suggest that the composition was scientific in respect of its purpose and function, it is clear that its illusionistic impact of was enhanced by depicting the individual leftovers with a scientific level of accuracy.

[752] I am grateful to the zooarchaeologist Priscilla Lange for pointing out that many of the bones represented in the mosaic can be identified with specific bones belonging to particular mammals. These await a full taxonomic study.

VII. Animals and Tryphē in Attalid Pergamon

To finish, it will be useful to examine the relationship between the two mosaics of Sosos already discussed in this chapter, and to speculate about the kind of space(s) that they originally decorated and the significance of their iconography. A consideration of these issues will reveal something about the social and cultural context of naturalistic representations of animals in Hellenistic times.

As we have already seen, Pliny the Elder mentions Sosos' doves and un-swept floor in a single passage of his *Natural History*, but there is little consensus among scholars concerning exactly what this passage implies about the relationship between the two compositions. According to one school of thought, the mosaics were originally independent compositions, decorating separate rooms of a single complex in Attalid Pergamon.[753] According to another view, however, the compositions were more closely connected, and formed two parts of the decoration of a single floor.[754] The argument hinges on the Latin term "ibi" ("there" or "in that place")[755] used by Pliny when introducing Sosos' doves. For some, this simply refers back to the author's previous reference to the city of Pergamon itself, while for others it alludes to his preceding description of the un-swept floor, suggesting that the doves were laid in the same spatial context as this composition.

With the philological debate lacking a clear solution, our only other evidence is supplied by the later versions of both of these compositions surviving from antiquity. On the one hand, there is nothing to suggest that the two subjects were combined in a single floor in later times,

[753] Herter 1976, 123-142; Meyer 1977, 105-106; Moormann 2000, 85-86.
[754] Parlasca 1963, 276-282; Donderer 1987, 368-370; Dunbabin 1999. 26-27 n. 29.
[755] Lewis and Short 1955, *s.v.* "ibi".

although it is interesting to note that the first century A.D. Roman poet Statius mentions an un-swept floor among the works of art decorating the villa of Manilius Vopiscus in Tivoli,[756] the very town where the Capitoline doves would be laid in the Villa of Hadrian less than a century later. On the other hand, the surviving versions of both compositions suggest that they originally adopted different formats that would have been well suited to combination within a single floor. Indeed, the surviving dove mosaics from Tivoli, Delos, Pompeii, Capua and Ostia are all *emblemata*, while another version from Malta is a "pseudo-emblema" positioned in the centre of a decorative floor.[757] The surviving versions of the un-swept floor exhibit greater variety, but our evidence is sufficient to justify the conclusion that Sosos' original composition was a frieze surrounding a central field. As we have seen, the version from the Aventine in the Vatican was a frieze bordering a square-shaped central field, and the same is true of the first century B.C. version from Aquileia in Northern Italy, where the un-swept floor surrounded a central *emblema* depicting a cat attacking a bird in the manner of the composition from the House of the Faun in Pompeii (Fig. 186).[758] A similar scheme was adopted in a version excavated in the property known as either the House of Bacchus or as the House of the Months at El Djem in Tunisia, ancient Thysdrus, which can be dated to the third century A.D (Fig. 187).[759] Here the floor consisted of a plain U-shaped area where the *triclinium* couches were originally positioned, and a decorated T-shaped area whose central branch was lodged between the two branches of the 'U'. Within this ensemble, the un-swept floor formed a border surrounding the three exposed branches of the 'T'.

Viewed in tandem, therefore, the surviving versions of both subjects are entirely consistent with the theory that Sosos' doves and un-swept floor were originally combined within a single

[756] Statius, *Silvae* I 3, 47-57.
[757] Tammisto 1997, 382.
[758] The best accounts are Brusin 1955, 93-107, and Perpignani and Fiori 2012, 11-38.
[759] The best account remains Foucher 1961, 292, 294-295. See also Dunbabin 1978, 260; Ben Osman 1990, 74-75.

floor, and suggest that this composition had a concentric arrangement, with the un-swept floor serving as an exceptional frieze surrounding the doves in its centre (Fig. 188). This interpretation accords well with many of the mosaics that have been excavated in Attalid Pergamon, which likewise featured a series of concentric borders surrounding a decorative central field. The most famous of these we have already mentioned, namely the Hephaistion mosaic from Room K of Palace V, which consisted of 21 differed coloured bands and ornamental friezes bordering an approximately square central field incorporating the mosaicist's *trompe l'oeil* signature (Fig. 163). But we might also mention the composition from Room A of Palace IV, which included the representation of a sea bass in its central field,[760] as well as the mosaics from Rooms 37 and 38 of the House of the Consul Attalos,[761] Room 9 of Peristyle House II,[762] and the *cella* of the Temple of Hera (Fig. 189),[763] all of which seem to have adopted similar concentric arrangements.

Several considerations suggest that Sosos' own concentric floor may originally have decorated a room that was used for dining and drinking in the Attalid royal capital. For one thing, five of the six surviving versions of the un-swept floor were excavated in rooms that have since been identified by scholars as *triclinia*, including the example from the Aventine that was discussed in some detail in the previous section of this chapter.[764] For another, the provision of spaces dedicated to dining and drinking was a salient characteristic of the palaces and houses built for the uppermost echelons of Hellenistic society, and it is clear Attalid Pergamon was no exception in this respect. In the case of Palace V, Wolfram Hoepfner has interpreted the entire building as the "royal *andron*" of the Attalid kings, identifying the majority of the surviving rooms as *andrones*, and calculating that they originally accommodated

760 Salzmann 1995, 101-103.
761 Salzmann 1991, 440-444.
762 Pinkwart 1984, 98-99, 102.
763 Salzmann 2011, 105; Grüßinger *et al.* 2011, 430 Cats. 1.19 and 1.20.
764 Moormann 2000, 89; Pappalardo and Ciardiello 2012, 54-55.

a total of one hundred dining couches (*klinai*), emulating the famous banqueting pavilion of Alexander the Great (Fig. 151).[765] Although specific aspects of his re-construction have been questioned,[766] there is no reason to doubt Hoepfner's general premise that a large portion of the palace was dedicated to the entertainment of guests. Indeed, the outermost border of the Hephaistion mosaic in Room K consisted of a band of plain white *tesserae* that can only have been designed to accommodate *klinai*,[767] while the large, rectangular room situated immediately next door had a door that was set off-centre by *c.* 1.0 m, suggesting that it, too, functioned as an *andron*.[768] In the eastern wing of the building, meanwhile, there was a "Flügeldeiraumgruppe" or "winged three room group" consisting of two large lateral *androns* flanking a central anteroom (Fig. 152).[769] Our literary sources have preserved disappointingly little information concerning the gatherings hosted in spaces such as these in the Attalid royal capital, but it is worth noting that Eumenes I, the ruler of the city between 263 and 241 B.C., was said by Ktesikles to have died from "excessive drinking".[770]

Still, the most compelling evidence to suggest that Sosos' mosaics originally decorated the floor of an *andron* is provided by what we know about the iconography of these compositions. As we have seen, the un-swept floor depicted the leftovers of a banquet as though discarded on the floor of a dining room, and this subject would have been perfectly suited to an *andron* setting. Prior to the food being served, the composition could be taken as a promise of the delicious meal that would follow, while during the feast its *trompe l'oeil* effect would have been underscored – and undermined – by the addition of actual leftovers discarded by real life banqueters.[771] Sosos' doves would also have been apposite in such a context, since the

765 Hoepfner 1996, 24-26; *Id.* 1997, 35-40.
766 Radt 1998, 8-9; Wulf 1999, 174 ns. 833, 837, 839.
767 Hoepfner 1996, 24.
768 Ibid.
769 Wulf 1999, 174 Abb. 74, 8.
770 Ath., *Deipnosoph.*, X 445d-e = *FGrH* 245 F 2.
771 Dunbabin 2003, 64.

precious metal basin depicted in the composition was precisely the sort of vessel used at upper class *symposia* in the Hellenistic world, while the motif of a dove drinking from this vessel embodied an overarching theme of consumption made more explicit by the iconography of the un-swept floor. Seen in this light, it seems likely that Sosos' mosaics were both spatially and thematically unified, and that together they constituted a self-referential allusion to the activities that took place in the room that they decorated. In this respect they can be compared to the statuary groups representing symposia attended by figures from the Greek literary-mythological repertoire that were displayed in the banqueting pavilion of Ptolemy II Philadelphos described by Kallixeinos of Rhodes.[772]

More than this, however, the iconography of the compositions also implied something about the kind of cultural *milieu* in which they were conceived. While the practice of dropping leftover food on the floor seems to have been commonplace during antiquity,[773] there are very good reasons to believe that the leftovers depicted in Sosos' un-swept floor were not the remains of an ordinary, functional meal, but rather the vestiges of a luxurious banquet whose patron seems to have spared very little in the way of expense. Indeed, if the Vatican un-swept floor can be taken as a reliable index, Sosos' version of the same subject incorporated a very large quantity of leftovers incorporating an extraordinary range of different types of food, many of which were incredibly expensive in the Hellenistic world as they are today. Compositional and aesthetic factors certainly played a part here, since a pavement that depicted fewer leftovers would have been considerably less interesting to look at for the ancient spectator. But the depiction of such an astonishing selection of gastronomic luxuries will have characterised the patron of the mosaic as a man of elevated socio-political status who possessed exceptional economic resources and enjoyed a quintessentially aristocratic

[772] Ath., *Deipnosoph.*, V 196f-197a.
[773] Dunbabin 2003, 64.

lifestyle: and this characterisation was, of course, tacitly confirmed by his ability to commission a work of art of such outstanding quality. Similar considerations apply to the precious metal vessel depicted in the dove mosaic, which likewise provided a tacit indication of the tremendous wealth of the patron of the composition.

The depiction of such large quantities of leftovers in the un-swept floor also suggested that the dinner party enjoyed by the imaginary banqueters was at an advanced stage. In the Vatican pavement, the banquet is so advanced that a small mouse is shown nibbling on an empty walnut shell, providing a solitary vignette of animation in this otherwise motionless scene (Fig. 190).[774] Its presence suggests that the banqueters responsible for dropping the leftovers have finished their feast, permitting the rodent to emerge from the woodwork and gnaw on the waste that they have already discarded. This interpretation fits neatly with what we know about dinner parties in the ancient world, since such occasions were usually divided into two parts separated by a sequence of elaborate formal rituals: the *deipnon*, during which the evening meal was eaten; and the *symposion*, the after-dinner drinking party.[775] Perhaps, then, the mouse was included as a chronological marker of sorts, alluding to the interval between the *deipnon* and *symposion*, and so to the stage of ancient Greek dinner parties at which communal drinking was traditionally instigated.[776] There is no way of knowing, of course, whether a mouse was also included in Sosos' own un-swept floor, but it is worth noting that comparable chronological markers were included in other mosaics that can be dated with confidence to the Hellenistic period. In the Dog Mosaic excavated in the area of the Bibliotheca Alexandrina in Alexandria, for example, the upturned golden *askos* suggests that

[774] Andrew Stewart (2014, 34 Fig. 16) claims that the mouse is a modern addition, but provides no evidence to support this assertion.
[775] Smith 2003, 27-31; Wilkins and Hill 2006, 77-78; König 2012, 6; Wecowski 2014, 35-38; Schmitt Pantel 2015, 226
[776] Moormann 2000, 94.

the iconography refers to a point in time when all of the wine contained in this vessel has been consumed, and so probably to the aftermath of a luxurious *symposion* (Fig. 191).[777]

Whether or not Sosos' un-swept floor alluded to the traditional interval between the *deipnon* and *symposion*, it is possible to interpret his dove mosaic in comparable terms. Indeed, while the juxtaposition of an expensive manmade basin with a series of wild, undomesticated birds will have conjured up a whole nexus of reflections and associations for ancient viewers, it is significant that at least one of these birds was shown drinking from the vessel, suggesting that the iconography may well have alluded to the instigation of the *symposion* itself, especially if the composition was originally laid in an *andron*. On this reading, the birds themselves assume the role of symposiasts, drinking from a sumptuous vessel that would have been well suited to even the most lavish of dinner parties. They congregate on the rim of this vessel like banqueters in an *andron*, drinking water in the same manner that real symposiasts enjoyed large quantities of wine.

Two conclusions follow. Firstly, there is no need to explain the significance of the iconography of Sosos' mosaics in eschatological terms, as scholars have consistently attempted to do since the middle of the twentieth century.[778] Secondly, and more importantly, the iconography of both mosaics was exquisitely suited to upper class tastes, and it is clear that these compositions were originally commissioned by a privileged individual in Pergamene society, perhaps even a member of the Attalid royal family itself. From a contextual point of view, therefore, Sosos' mosaics deserve to be viewed alongside the mosaics from the Altar Chamber of Palace V, as it is very likely that they adorned an *andron* in a similarly distinguished setting. This contextual analogy is matched by a thematic one, since all of the

[777] For this mosaic, see Guimier-Sorbets 1998, 265-272.
[778] See, for example, Renard 1956, 311-314; Deonna and Renard 1961, 109-137; Foucher 1961, 294-296; Parlasca 1963, 282-290.

mosaics discussed in this chapter indicate that naturalistic representations of animals – and edible parts of animals – were considered appropriate subjects for the decoration of royal buildings and spaces in Attalid Pergamon. These representations were clearly of some interest to the individuals who frequented these buildings during the second century B.C., and had entered the discourse of *tryphē* so commonly associated with the courts of Hellenistic kings.

VIII. Conclusion

In light of these royal connections, the accurate representations of animals analysed in this chapter deserve to be viewed alongside the representations of animals accompanied by identifying labels in the upper register of the Nile Mosaic of Praeneste. After all, we saw in Chapter Three that the iconography of the Nile Mosaic had a pronounced royal dimension, since the ruling couple were themselves depicted in section 14 of the composition, while the lower register celebrated the prosperity that Ptolemaic rule had brought to Egypt itself, and the upper register extolled the successes of royally sponsored expeditions to Nubia and Aethiopia. In both Alexandria and Pergamon, therefore, innovative representations of animals were depicted in quintessentially royal contexts, suggesting that the natural world became an important element of royal thought, ideology and visual culture during the Hellenistic period. It would be interesting to know whether there was an element of competition between the different kingdoms in this respect, especially when we consider that they clashed over the acquisition of books and the patronage of prominent intellectuals, as we saw in Chapter One.

In any case, artistic interest in the natural world did not end with the demise of the great Hellenistic kingdoms and with Rome's eastward advance during the second and first centuries B.C. Quite the opposite, in fact, since so many of the compositions discussed in this thesis

constitute later versions of Hellenistic works of art found in Italian contexts. In the next chapter, attention will be shifted to an art form that is usually categorised as 'Roman', namely the garden paintings that decorated houses in Rome and the Bay of Naples during the first centuries B.C. and A.D. Like the mosaics of the Altar Chamber of Palace V, many of these paintings incorporated accurate representations of birds that can be identified with specific ornithological species, and this correspondence raises the question of the how far the iconography of these compositions was influenced by the pre-existing art of the Hellenistic world.

Chapter Seven:

Garden Paintings in Rome and the Bay of Naples:
The Artistic Afterlife of Hellenistic Natural Science

I. Prelude

The modern term "garden painting" is used to denote a category of ancient wall paintings in which depictions of trees, plants, birds and garden ornament formed the principal subject. The majority of our surviving garden paintings have been excavated in the towns destroyed by Mount Vesuvius in A.D. 79, but it is likely that the fashion for such paintings originated in Rome itself, since several early examples from the capital can be dated with confidence to the second half of the first century B.C.[779] Of these early Roman examples, the best known is the garden painting that adorned the subterranean "garden room" of the Villa of Livia *ad gallinas albas* at Prima Porta, dated to *c.* 40 – 20 B.C.,[780] which is today beautifully installed in the Palazzo Massimo alle Terme of the National Roman Museum (Fig. 192). Conceived in an imperial context, this painting has sometimes been heralded as "una fresca invenzione" that stood at the head of the series of Italian examples of the genre.[781]

Whether or not the composition from the Villa of Livia was indeed the head of the series in this manner, it remains difficult to trace the development of garden paintings through time, partially because they do not fit neatly into the traditional typology of wall painting styles, and partially because our surviving examples exhibit such tremendous diversity.[782] Indeed, no two paintings have exactly the same iconography, and their varying artistic quality can be gauged by comparing the identifiability of the individual ornithological and botanical specimens depicted in each. Even within our corpus of high quality paintings there are considerable differences in terms of style, and we might reasonably contrast the impressionistic birds of

[779] As well as the garden painting of the Villa of Livia at Prima Porta, we might mention the examples from the Villa Farnesina and the Auditorium of Maecenas. Our earliest example of the genre from Campania is provided by the painting that decorated *exedra* 25 of the House of Menander at Pompeii, which has been dated to *c.* 40-25 B.C.
[780] Settis 2002, 9.
[781] Ibid, 17.
[782] For the difficulties involved in dating the garden painting from Room 32 in the House of the Golden Bracelet in Pompeii, see Stefani and Borgongino 2006, 82-83.

the Villa of Livia painting with the more crisply delineated specimens in some later Pompeian compositions. The paintings also decorated a variety of spaces: some adorned walls surrounding (real) peristyle gardens (Fig. 193); some adorned the walls of small courtyards and light wells (Fig. 194); and some were painted inside closed rooms.[783] The function of each painting presumably varied according to its context.

The following chapter will focus on the finest surviving examples of the genre, namely the aforementioned painting from the Villa of Livia at Prima Porta, the paintings from Rooms 31 and 32 of the House of the Golden Bracelet at Pompeii, and the painting from Room 5 of the House of the Fruit Orchard at Pompeii. These compositions were all were cineramic in design, stretching around three or four walls of a room to create an un-broken vista of a blossoming garden for those who stepped inside. They were distinguished, above all, by their astonishing artistic quality, and by the fact that they contained highly naturalistic representations of plants and birds that can be readily identified with particular botanical and ornithological species. In this respect, they are directly comparable to the late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna analysed in Chapter Five, and the series of mosaics from Attalid Pergamon containing naturalistic representations of birds discussed in Chapter Six.

Scholarly treatments of these compositions tend to concentrate on their overarching historical significance, in terms of what they reveal about the arrangement of real gardens in contemporary Roman houses,[784] and how they illuminate the social, cultural, ethical and symbolic value of gardens in late Republican and Imperial Italy.[785] These issues are clearly important, but the following chapter will focus on an aspect of garden paintings that has

[783] Jashemski 1979, 55-87; Donati 2002, 55-57.
[784] For a good example of this approach, see Jashemski, Meyer and Ricciardi 2002, 80-180.
[785] For a good example of this approach see Ciarallo 2012, 21-51.

received less attention in recent times: the question of their artistic origins. This is significant in the context of this thesis, not only because the paintings exhibit a level of naturalism that recalls the works of art analysed in the previous two chapters, but also because they are sometimes said to have evolved from the art of the Hellenistic world, particularly that of Ptolemaic Alexandria.

Accordingly, the following chapter is divided into two parts. In the first, an analysis of the garden paintings from the Villa of Livia at Prima Porta and Room 32 of the House of the Golden Bracelet at Pompeii will demonstrate that the finest surviving garden paintings contained representations of birds and plants that can only have depended on the first hand observation of real life specimens, and that the artists responsible for the paintings used pre-existing prototypes when formulating their designs. In the second part, the question of the artistic origins of the garden paintings will be re-visited. A series of specific correspondences between individual elements of the paintings and earlier Hellenistic works of art will suggest the possibility that *some* of the ornithological and botanical specimens depicted in the paintings depended on artistic prototypes that originated in the Hellenistic world.

II. Realistic Plants and Birds

The garden painting from the Villa of Livia at Prima Porta originally decorated all four walls of a subterranean chamber measuring *c.* 11.70 x 5.90 m (Fig. 195). It was interrupted only by the door in the centre of the long eastern wall, and was probably illuminated by a skylight in the barrel vault of the ceiling.[786] The original function of the chamber is uncertain, but it may have served as a cool space for use in the warm summer months.[787]

[786] Settis 2002, 9.
[787] Gabriel 1955, 2.

The garden painting extended uninterrupted from the base of the wall to the height of the barrel vault, some 3.0 m above the ground (Fig. 196). The upper edges of the walls were originally painted in various shades of brown at the point where they met the barrel vault, creating the impression for those who entered the room that they were standing inside a cave or grotto.[788] Unusually, no pilasters or columns were depicted in the painting itself, and so this grotto was completely devoid of architectural support.[789] Still, an obviously man-made element is supplied by the *ambulatio* depicted in the foreground of the composition, bordered by a trellis fence on the side nearest the viewer and by a low marble balustrade with an elaborate lattice design on the opposite side. A series of shrubs sprout up against the balustrade, which is punctuated by six rectangular recesses interspersed at regular intervals, one on each short side and two on each long side of the room. A tree stands in each recess: a pine to the north, an oak to the south, and four spruces in the east and west. Beyond the balustrade is a garden filled with an astonishing selection of flowers and trees, set beneath a clear blue sky. The specimens depicted in the foreground are rendered in great detail, whilst those further back seem hazy and indistinct, creating an impression of spatial depth.[790] Sixty-nine birds are juxtaposed with these plants, perching on fences and branches or flying through the sky.[791]

Writing in 1955, prior to the discovery of the garden paintings from the House of the Golden Bracelet and the House of the Fruit Orchard in Pompeii, Mabel Gabriel could comment that "A feature in which these pictures differ from other preserved garden scenes is their complete realism."[792] This observation certainly holds true for the plants depicted in the composition,

[788] Pappalardo 2004, 190.
[789] Gabriel 1955, 7; Settis 2002, 10.
[790] Settis 2002, 10-11.
[791] Gabriel 1955, 43; Originally there were more, but some have barely been preserved.
[792] Ibid, 8.

the overwhelming majority of which are depicted with sufficient accuracy to permit convincing botanical identifications. Looking at the well-preserved painting of the short southern wall (Fig. 197), for example,[793] we observe an elegant oak tree standing in the central recess, and a sequence of beautifully depicted flowers immediately behind the balustrade, including camomiles, chrysanthemums, myrtle branches, periwinkle blossoms, lavender poppies, and rose bushes. In the centre of the space between the central oak and the left hand edge of the wall is a superbly rendered pomegranate tree, and a quince tree occupies the corresponding position at the centre of the right hand side. A series of readily identifiable trees and shrubs fill the remaining space behind the balustrade, including laurels, oleanders, a pine, cypresses and an oak. The naturalism of these representations is truly striking, and there can be little doubt that they relied on the first hand observation of real life specimens. Still, the composition was not without artifice, since many of the plants represented in the painting bloom in different seasons, and would never have been seen together at a single time of year.[794] It may also be significant that the laurel occurs most frequently of all of the represented plants,[795] since Pliny, Suetonius and Cassius Dio all report that the Villa of Livia was itself home a grove of laurels, which was planted to celebrate the portentous moment when an eagle dropped a white hen carrying a laurel branch into the lap of Livia Drusilla, the future wife of the emperor Augustus.[796]

The extent to which Gabriel's assessment of "complete realism" holds for the birds depicted in the composition is much more questionable. Gabriel's own study of the birds remains the most comprehensive, but she herself noted the difficulties of attaching precise ornithological labels to the represented specimens, conceding that it was "impossible to be entirely

[793] My description of the painting of the southern wall is founded on Gabriel 1955, 33-36.
[794] Gabriel 1955, 11; Kellum 1994, 221; Settis 2002, 16.
[795] Settis 2002, 16.
[796] Plin., *HN*., XV 40, 136-137; Suet., *Galb.*, 1; Dio Cass., 47, 52 and 63, 29.

accurate",[797] particularly in the case of the many small birds with light coloured breasts and brown wings and tails,[798] and the dozen or so birds with bright yellow breasts.[799] An analysis of the well-preserved painting of the southern wall is again instructive in this respect. To be sure, several of the birds represented here can be identified with particular species with confidence: the black bird shown alighting on the central oak tree is clearly a common blackbird (*Turdus merula*) (Fig. 198); the white bird perching beneath the pomegranate tree is surely a dove of some description (family: *Columbidae*) (Fig. 199); and the fattish bird with yellow and brown feathers standing on the balustrade behind the oak tree resembles the common quail (*Coturnix coturnix*). But the identifications that have been proposed for some of the other birds depicted on the wall seem far less compelling. For example, the identification of the bird shown alighting above the quince tree as a song thrush (*Turdus philomenus*) is difficult to substantiate for several reasons, most notably because it preserves no trace of the spotted underparts characteristic of this species (Fig. 200).[800] The identification of the bird with a yellow breast perching just to the right of the oak tree in middle ground as an Eurasian golden oriole (*Oriolus oriolus*) is also problematic, since the chestnut colour of its neck and back and the buff colour of the top of its head and its underbelly are not found in real life specimens (Fig. 201).[801] Finally, the identification of the small bird with a creamy white chest and a dark back perching on top of the oak tree as a rustic bunting (*Emberiza rustica*) or an ortolan bunting (*Emberiza hortulana*) is flawed,[802] since it seems much closer to the Italian sparrow (*Passer italiae*) in its morphology and colouration (Fig. 202).

An up-to-date study of the ornithological specimens depicted in the Villa of Livia painting would undoubtedly contribute new insights and identifications: but the point remains that

[797] Gabriel 1955, 43.
[798] Ibid, 48: "The identification of these birds is very difficult".
[799] Ibid, 44: "These are very difficult to classify as there are many divergencies".
[800] For the identification see Gabriel 1955, 44.
[801] For the identification see Ibid, 45.
[802] For the identification see Ibid, 46-47.

some of the birds cannot be identified with particular species with a high level of confidence. A number of factors may have contributed to the un-identifiability of these specimens,[803] but in the majority of cases it seems as though the artists produced generic-looking representations of birds by combining colours and morphological elements that had firm roots in reality, but which were not combined in the same way in any single ornithological species. In these instances, there is very little to suggest that the representations relied on the detailed observation of real life specimens, and we should probably envisage a more improvisatory mode of composition whereby the painters responsible for depicting these birds were afforded a degree of artistic license. Even if so, it is important to recognise that many of the birds included in the composition *can* be identified with particular species. In addition to the specimens on the south wall mentioned above, we might also point to the purple swamphen (*genus*: *Porphyrio*) balancing on the trellis fence on the eastern wall (Fig. 203),[804] the Eurasian magpie (*Pica pica*) on the western wall (Fig. 204),[805] and the partridge (Sub-family: *Perdicinae*) standing on the marble balustrade on the short north wall (Fig. 205).[806] In such cases, a dependence on the observation of real life specimens seems much more probable.

In short, the garden painting that decorated the subterranean chamber of the Villa of Livia at Prima Porta announced a trend whereby highly naturalistic representation of birds and plants could be incorporated within compositions of this kind. This trend reaches its peak with the garden paintings that decorated Rooms 31 and 32 of the House of the Golden Bracelet at Pompeii and Room 5 of the House of the Fruit Orchard at Pompeii, where the overwhelming majority of ornithological and botanical specimens were depicted with sufficient accuracy to permit credible taxonomic identifications. Perhaps the best known of these is the painting that decorated Room 32 of the House of the Golden Bracelet, which was painstakingly re-

[803] Enumerated by Tammisto 1997, 137-148.
[804] For the identification see Tammisto 1997, 207 n. 60.
[805] For the identification see Gabriel 1955.
[806] For the identification see Gabriel 1955.

constructed following its excavation in the late-1970s and early-1980s. Room 32 had a barrel-vaulted ceiling (Fig. 206), and was situated on the lowest level of this large three storey house, where it opened onto a small garden terrace containing pools and fountains.[807] The function of the room is not entirely certain, but it may have served as a personal study for the owner of the house, "a hideaway for relaxation and contemplation."[808]

The garden painting extended around the north, south and eastern walls of Room 32, while the western side opened onto the real garden terrace for most of its height.[809] The painted walls were each sub-divided into three horizontal sections, with the comparatively narrow upper and lower sections bordering the garden painting proper in the large central zone. The lower section depicts black garden wall with plants sprouting up against it beneath a decorative trellis fence, while the upper section depicts architectural details, garlands, *oscillae* and *pinakes* set against a plain black background. In the central zone, meanwhile, we see a blossoming garden filled with an astonishing range of plants and birds, arranged around a selection of man-made garden ornament: fountains and herms carrying *pinakes* in the foreground, and masks and *oscillae* hanging in the sky above. The distribution of the vegetation follows the same general scheme as the Villa of Livia painting, with flowers and small plants occupying the foreground – here set against a dark green background to create the impression that a dense thicket of vegetation lay behind – and taller shrubs and trees depicted in the space above (Fig. 207). Birds are shown flying through the light blue sky above the trees, and perching on branches and the garden ornament.

The naturalism of the birds and plants depicted in the composition can be gauged by analysing its best-preserved section, the painting on the long northern wall (Fig. 208). Here

[807] Mastroroberto 2003, 398-399; Rocco 2003, 153.
[808] Roberts 2013, 171-172; cf. De Carolis 2007, 147-148.
[809] My description of the decoration is based on the accounts of Ciarallo 1991, 25-31; Conticello 1991a, 19-24; Ciarallo and Capaldo 1992, 227-239; Jashemski 1993, 348-356; Ciardello 2006, 187-188; Roberts 2013, 171-173.

the garden was arranged around an elegant shell-shaped fountain depicted in the centre of the foreground, which was flanked by a herm carrying a *pinax* to either side, one with a youthful female (?) head to the left and one with a bearded male head with satyr-like features to the right. Two dramatic masks were shown hanging in the sky above, in positions corresponding to the spaces between the fountain and the herms. The remaining space was filled with representations of plants and animals executed in a crisp, linear style. In the foreground, the lowest level of vegetation consists of two low date palms, two rose bushes, a low oleander with pink blossoms, a clump of ivy, chrysanthemums, camomiles, two low strawberry trees, opium poppies, and an unidentifiable plant with four-petaled yellow and lavender coloured flowers. Immediately above, the second level of vegetation includes a plane tree depicted behind the central fountain, three viburnums with clusters of white flowers, and several laurels.

Ten representations of birds have been preserved against this backdrop, all of which can be identified with particular ornithological species with a high degree of confidence.[810] Two of them are shown flying through the light blue sky: an Italian sparrow (*Passer italiae*) towards the centre of the composition, and a common blackbird (*Turdus merula*) nose-diving further to the right. Four more specimens are shown perching on the uppermost branches of the trees: an elegant barn swallow (*Hirundo rustica*) on the laurel tree that emerges from behind the left herm; a white dove (*Columba domestica* or *Streptopelia risoria*) alighting on a viburnum just to the right (Fig. 209); and a Eurasian magpie (*Pica pica*) and a second Italian sparrow at the top of the plane tree positioned behind the central fountain. This plane tree is home to two more birds further down: a second white dove to the left and a common wood pigeon (*Columba palumbus*) just above the fountain to the right. (Fig. 210) A second pigeon is shown standing just above the right hand *pinax*, its head turned backwards to face its tail. Just to the left of

[810] The following identifications are suggested by Capaldo 1991, 27-29.

this *pinax*, a male golden oriole (*Oriolus oriolus*) peeks its head out from a viburnum tree, displaying the golden plumage and black eye stripe typical of real life specimens (Fig. 211). There can be little doubt that all of these representations depended on the close observation of real life specimens, and the same can be said of the birds depicted on the eastern and southern walls of the room, and indeed those depicted in the paintings that decorated Room 31 of the same house and Room 5 of the House of the Fruit Orchard, which were likewise depicted with a astonishing level of naturalism.

III. Artistic Models

The crucial question, of course, is how the artists responsible for these paintings were able to produce such highly naturalistic representations of large numbers of ornithological species. The same question was posed in Chapter Five in relation to the accurate representations of ichthyological specimens in the late Hellenistic fish mosaics of Praeneste, Pompeii and Panisperna. There, a series specific typological connections between the different mosaics were identified, which were used to suggest that the artists responsible for designing these compositions utilised detailed artistic prototypes, rather than conjuring scientifically accurate representations of large numbers of distinctive ichthyological species from memory alone.

Typological connections can also be traced in our finest surviving garden paintings, since identical representations of particular ornithological species were included in different compositions. This phenomenon can sometimes be traced in two paintings decorating a single property: hence the white pigeon with a black head shown flying towards the viewer on the eastern wall of Room 32 of the House of Golden Bracelet is indistinguishable from

another specimen depicted on the southern wall of Room 31 in the same house (Fig. 212).[811] But comparable connections can also be observed in paintings that originally decorated rooms belonging to separate houses. A good example is supplied by the Eurasian magpie and Italian sparrow shown perching on the transverse wooden lintel on the eastern wall of the garden painting of Room 5 of the House of the Fruit Orchard in Pompeii, which are nearly identical to the specimens of the same species standing on the upper branches of the plane tree on the northern wall of Room 32 of the House of the Golden Bracelet, in terms of their morphology, colouration and orientation (Fig. 213). Other examples abound: the two white doves shown alighting on the northern and eastern walls of Room 32 of the House of the Golden Bracelet are virtually identical to two specimens shown flying through the sky on the north and west walls of Room 5 of the House of the Fruit Orchard; the white dove with an inverted head on the southern wall of Room 31 of the House of the Golden Bracelet seems very close to a – badly damaged – specimen on the south wall of Room 5 of the House of the Fruit Orchard (Fig. 214); the swallow shown perching on a laurel on the northern wall of Room 32 of the House of the Golden Bracelet is more or less identical to a specimen perching on a branch on the southern wall of Room 5 of the House of the Fruit Orchard and another specimen shown standing on a *pinax* on the northern wall of the same room (Fig. 215); and the white dove perching in the plane tree of the northern wall of Room 32 of the House of the Golden Bracelet is very close to two specimens from Room 5 of the House of the Fruit Orchard, one perching on the wooden lintel on the north wall, and one just above the window on the south wall (Fig. 216).

In light of these correspondences, it is likely that the garden paintings of the House of the Fruit Orchard and the House of the Golden Bracelet were executed by a single workshop, but the question remains of how these compositions were designed in the first place. One

[811] De Carolis 2007, 150-151.

possibility is that the painters of this workshop were experts in producing accurate representations of particular birds and plants from memory alone.[812] A degree of support for this theory is supplied by a passage from Horace's *Ars Poetica*, which suggests that certain artists may have become specialists at representing particular trees during the first century B.C.: "Perhaps, too, you can draw a cypress [*cupressum*]. But what of that if you are paid to paint a sailor swimming from his wrecked vessel in despair?"[813] But to draw a cypress tree was one thing: to depict a large number of distinctive ornithological specimens with a taxonomic level of accuracy from memory alone was another entirely, and seems *a priori* much less likely. The only credible alternative is that the artists of this workshop drew upon a repertoire of pre-existing prototypes that permitted them to depict particular ornithological species in an identical manner in different compositions.[814] This theory fits very neatly with the typological connections that can be traced between the paintings, and with other examples of the genetic re-production of images in Pompeian wall paintings, which have led one scholar to conclude that the evidence for the use of artistic models is "almost overwhelming".[815]

We can only speculate about the nature of these prototypes, but the fact that the garden paintings incorporating identical representations of particular birds exhibit such pronounced compositional differences suggests that they were compilations of sorts, designed using numerous prototypes that each transmitted particular elements of the iconography: individual ornithological specimens, perhaps. The astonishing naturalism of the birds depicted in the paintings suggests that the prototypes used by the artists could transmit detailed designs executed on a 1:1 scale, circumstances that best suit whitened wooden boards known as *pinakes*, *leukomata* and *sanides*, as we have already seen.

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[812] Jashemski, Meyer and Ricciardi 2002, 82: "Although pattern books were available, we had the feeling that the artist was painting flowers and fruit that were familiar to him."
[813] Hor., *Ars P.*, 19-21; cf. Settis 2002, 24-25.
[814] A variant of this theory is presented by Ernesto De Carolis (2007, 149-151), who argues for the use of "una serie di sagome" in the design of these garden paintings.
[815] Ling 1991, 217-218.

The remainder of this chapter will be devoted to assessing the cultural and geographic origins of these prototypes. This is an issue of considerable importance, but one that scholars have so far failed to engage with in a sufficient level of detail. It has sometimes been pointed out that the flora and fauna depicted in our surviving garden paintings were indigenous to the countryside of Hellenistic and Imperial Italy,[816] and it is tempting to conclude on this basis that the artistic prototypes utilised by the artists responsible for these compositions were essentially local in origin. But many of the birds and plants depicted in the paintings were also found in other parts of the Mediterranean basin, leaving open the possibility that some of the prototypes originated elsewhere.

IV. Anfushi and Egyptian Iconography

It is in the context of this possibility that we should scrutinise the theory that our garden paintings can be traced back to the art of Hellenistic Alexandria,[817] and that they were, in a sense, the artistic counterparts of the parks and groves that were located in the grounds of the royal palace of that city.[818] The theory is necessarily hypothetical, since nothing directly comparable to our corpus of garden paintings from Rome and the Bay of Naples has survived from the Ptolemaic royal capital, or indeed from anywhere else in the Hellenistic world. Still, a range of factors have been adduced in support of this argument,[819] two of which require particular consideration here.

[816] Jashemski 1979, 87; McKenzie 2007, 112.
[817] De Vos 1980, 88-89; *Id.* 1983; De Caro 1991, 262-265; De Carolis 1992, 29-37; *Id.* 1999, 55; *Id.* 2001, 24; *Id.* 2007, 152 n. 2; Mastroroberto 1997, 61-62; Di Pasquale 2007, 62.
[818] The presence of botanical gardens in the palatial district of Alexandria is indicated by a number of ancient sources, notably Ath., *Deipnosoph.*, V 196; XIV 654b-d; Strab., XVII 1, 8-10; Ael., *NA.*, XVII 3. For a modern account of these palatial gardens see Trinquier 2009, 347-350.
[819] Summarised by De Vos 1980, 88-89.

Firstly, scholars have interpreted two paintings excavated in Tomb V in the Alexandrian necropolis of Anfushi as evidence that "die Provenienz der Idee" of the garden painting originated in the Ptolemaic royal capital.[820] One of these paintings decorated the walls of room 2 of the tomb, and depicted a series of date palms and deciduous trees against a white background, alternating with painted piers (Fig. 217). The other painting decorated the interior of a loculus in Room 5, and also showed date palms and deciduous trees against a white background, here alongside other shrubs and aquatic plants, and without painted piers set in between (Fig. 218).[821] While there are clear correspondences between these paintings and our surviving corpus of garden paintings from Rome and the Bay of Naples, the notion that the former constituted early examples of the genre cannot be substantiated on either chronological or iconographic grounds. From a chronological perspective, Tomb V at Anfushi has been dated to the second half of the first century B.C.,[822] and so its painted decoration cannot be significantly – if at all – older than our earliest surviving garden paintings from Italy, such as the famous example from the Villa of Livia at Prima Porta. From an iconographic standpoint, meanwhile, there are a number of important differences separating the Anfushi paintings from our surviving garden paintings from Rome and the Bay of Naples. Most obviously, the trees of the Anfushi paintings are executed in a "cursory and decorative manner",[823] bearing precious little resemblance to the astonishingly naturalistic trees depicted in, say, the garden painting from the Villa of Livia. The abstract qualities of these trees are further enhanced by the monotonous, paratactic manner in which they are arranged, and by the plain white backgrounds against which they are set. At the very most, then, these Alexandrian tomb paintings should be viewed as very distant relatives of our Italian garden paintings rather than their direct precursors, and the notion that there was a genetic connection between the two is very difficult to substantiate. Certainly the tomb

820 Michel 1980, 378.
821 For full descriptions of these paintings, see Venit 2002, 86-87, 89-90.
822 Settis 2002, 27; cf. Venit 2002, 199.
823 Venit 2002, 86.

paintings should not be used to support the theory that the significance of the genre lay in the eschatological sphere, as Salvadore Settis has recently shown.[824]

A second factor that has been used to support the theory of Alexandrian origins is the observation that a number of garden paintings surviving from the Bay of Naples incorporated quintessentially Egyptian iconography.[825] A good example is provided by the painting that decorated Room 5 of the House of the Fruit Orchard in Pompeii, where the garden ornament included a selection of pharaonic statues (Fig. 219), as well as a series of *pinakes* carrying Egyptian motifs: two representing the Apis bull on the north and south walls, and two showing scenes of worship featuring dark skinned figures in a rigid Egyptianising style on the east wall.[826] We might also mention the garden painting from Room 31 of the House of the Golden Bracelet, where the ornament likewise incorporated a series of pharaonic statues, including a pair of sphinxes standing to either side of a *pinax* depicting the Apis bull (Fig. 220).[827] The crucial question here, of course, is whether the inclusion of Egyptian ornament in such compositions is enough to justify the conclusion that every element of garden paintings should be traced back to the art of Hellenistic Alexandria. This does not need to have been the case, since the popularity of Egyptian motifs is well attested in Roman Italy,[828] and their inclusion in garden paintings might simply be explained as one manifestation of a broader predilection for such material – and the accompanying nexus of social, cultural and religious associations – on the part of Italian patrons.[829]

In sum, neither the paintings from Tomb V at Anfushi nor the Egyptian motifs included in our surviving garden paintings are, in themselves, sufficient to demonstrate that the garden

[824] Settis 2002, 25-31.
[825] De Vos 1980, 89.
[826] Ibid, 15-17; Jashemski 1993, 317-320; Pappalardo 2004, 300.
[827] Jashemski 1993, 356-358; Ciardello 2006, 162-163.
[828] See the collection of essays in Versluys, Bricault and Meyboom 2007.
[829] Jashemski 1979, 74.

painting genre should be traced back to the art of Hellenistic Alexandria. A much stronger case for Hellenistic origins can be made on the basis of a series of specific iconographic correspondences between individual ornithological specimens depicted in the garden paintings on the one hand, and in pre-existing works of art surviving from the Hellenistic world on the other.

V. Hellenistic Origins?

We saw in Chapter Six that accurate representations of different ornithological species seem to have been a hallmark of the art of Hellenistic Pergamon, and it is significant that a series of specific correspondences can be traced between birds represented in our finest surviving garden paintings and in the pre-existing art of the Attalid royal capital. A good example is provided by the common nightingale (*Luscinia megarhynchos*) shown perching on a thin wooden stake supporting a red rose on the southern wall of Room 32 of the House of the Golden Bracelet in Pompeii. In terms of its morphology, pose and colouration, this bird is very close to a specimen of the same species shown perching on a twig in the superb garland mosaic from the Altar Chamber of Palace V analysed in the previous chapter (Fig. 221). Both birds were depicted in profile, perching on the top of narrow vertical supports, and both have the plain brown upper parts and the creamy buff underparts characteristic of this species. There are, of course, some slight differences, notably the darker beak of the nightingale represented in the mosaic, and the fact that this specimen faces towards the viewer's right, while the specimen from the Pompeian painting faces towards the viewer's left. Still, the similarities between the representations are undeniable, and it is clear that both depended on the observation of real life specimens.

There are also close correspondences between the doves and pigeons represented in our finest surviving garden paintings and those depicted in our corpus of mosaics showing doves drinking from precious metal basins. We saw in Chapter Six that the iconography of our finest surviving mosaic of this kind, from the Villa of Hadrian at Tivoli (Fig. 172), was Hellenistic in conception, and that it may have been modelled on a famous version of the subject laid by Sosos of Pergamon during the second century B.C. We also noted that the leftmost dove in this mosaic is very similar to a specimen depicted in a mosaic from Delos that can be dated with confidence to the late-second or early-first century B.C. (Fig. 175). Both birds are shown in profile, facing the viewer's right, with their heads turned backwards to face their tails, and with their raised right wings interrupting the natural contours of their backs and tails. The only substantive difference is provided by their colouration, since the speckled plumage of the Tivoli specimen contrasts with the white and grey feathers of the Delian example. A series of strikingly similar doves and pigeons were incorporated in our finest surviving garden paintings: a wood pigeon with a brown breast and grey wing and tail feathers perching just above the right hand *pinax* on the northern wall of Room 32 of the House of the Golden Bracelet (Fig. 222); a white dove perching on top of a trellis archway on the southern wall of Room 31 of the same property (Fig. 223); and a series of damaged examples on the south wall of Room 5 of the House of the Fruit Orchard and on the eastern and southern walls of the garden room of the Villa of Livia at Prima Porta (Fig. 224). In the case of the House of the Golden Bracelet, it is clear that the artists responsible for the decoration were familiar with the drinking doves motif, since the lunette of the east wall of Room 32 was decorated with a version of this subject (Fig. 225).

Further connections between the dove mosaics and garden paintings can be identified. The dove shown drinking water from the basin in the mosaic from the Villa of Hadrian is paralleled by a specimen shown perching on a branch on the south wall of Room 31 of the

House of the Golden Bracelet (Fig. 226), and by an impressionistic looking specimen standing on the trellis fence on the eastern wall of the garden room of the Villa of Livia. It is also very similar to two doves depicted in a late Hellenistic mosaic of the same subject from the House of the Doves in Pompeii (Fig. 227), a composition that is of further interest here because two more of its birds resemble specimens represented in the garden paintings.[830] Indeed, the rightmost dove on the rim of the vessel in this mosaic is very similar to the dove depicted in profile on the northern wall of Room 32 of the House of the Golden Bracelet and two specimens from Room 5 of the House of the Fruit Orchard (Fig. 228); and the dove shown alighting onto the vessel is close the birds shown alighting on the northern and eastern walls of Room 32 of the House of the Golden Bracelet and two specimens shown flying through the sky on the north and west walls of Room 5 of the House of the Fruit Orchard (Fig. 229).

A final point of contact with the pre-existing art of the Hellenistic world is supplied by the purple swamphens (*genus*: *Porphyrio*) shown balancing on the trellis fence on the eastern wall of the garden room of the Villa of Livia at Prima Porta and stalking through the undergrowth on the eastern wall of Room 32 of the House of the Golden Bracelet at Pompeii (Fig. 230). The former, in particular, resembles a sketchily rendered specimen of the same species depicted in the foreground of a wall painting that decorated the so-called Sāqiya Tomb from El Wardian in Alexandria (Fig. 231),[831] which is now dated to the second half of the second century B.C.[832] In both cases, the species is shown in profile facing the viewer's left, with its long spindly legs extended to their full extent in such a way as to suggest that the creature is walking from right to left. It is interesting that the same tomb painting also incorporates a

[830] For this mosaic, see Tammisto 1997, 379; Kielau 2004, 499-501.
[831] Described by Venit 1988, 73-80; *Id.* 2002, 101-118; *Id.* 2016, 60-63.
[832] Venit 1988, 80-89; *Id.* 2002, 108-116.

representation of a herm with a Pan-like head standing inside a gated grove (Fig. 232),[833] which seems to anticipate the herms of the garden painting from Room 32 of the House of the Golden Bracelet.

These correspondences are clear, and are sufficient to justify the speculation that *some* of the artistic prototypes utilised by the individuals responsible for designing and executing our finest surviving garden paintings may have originated in the Hellenistic world. As we have already seen, these prototypes probably transmitted isolated elements of the iconography of the compositions, such as detailed representations of individual ornithological specimens. It is possible that they also carried depictions of individual botanical specimens, since increasingly naturalistic representations of different plants had been incorporated in a variety of artistic media since at least the fourth century B.C. We might usefully compare, for instance, the naturalistic pomegranates depicted in an exquisite mid- to late-second B.C. *opus vermiculatum* mosaic from Tel Dor – ancient Dora – in Israel (Fig. 233) with the similarly superb pomegranate tree represented on the southern wall of the garden room of the Villa of Livia at Prima Porta (Fig. 197).[834] This is not to suggest that *all* of the birds and plants depicted in the garden paintings relied on artistic prototypes imported from the Hellenistic world, since a number of them were indigenous to Roman Italy. Rather, we should probably envisage a bi-partite process of composition, according to which some prototypes arrived from overseas, which then encouraged artists in Italy to compose similarly accurate representations of the birds and plants that inhabited the countryside of Latium and Campania. Presumably this second stage also involved the creation of detailed prototypes that were again based on the observation of real life specimens. All of the prototypes could then be used and re-used by the artists commissioned to execute garden paintings for wealthy Italian patrons.

[833] Venit 2002, 105-105.
[834] For this mosaic, see Stewart and Martin 2003, 132-143; Wootton 2008, 259-268; *Id.* 2012, 209-234.

It would, of course, be interesting to know whether the practice of integrating large numbers of birds and plants in a single composition had any real precedent in the Hellenistic world. Certainly there is good evidence to suggest that the Hellenistic period witnessed a new interest in the representation of landscapes inhabited by animals, when we consider that the Nile Mosaic at Praeneste, the fish mosaic at Praeneste, and the Nilotic mosaic of the House of the Faun at Pompeii are usually traced back to the art of Ptolemaic Alexandria. It has also been well documented that Hellenistic wall painting witnessed the birth of a nascent illusionism that reached its full potential with the garden paintings in Rome and the Bay of Naples (Fig. 234).[835] A tantalising example is provided by Hypogeion A in the Alexandrian necropolis of Shatby, where, according to very early reports, the interstices between the engaged Doric half-columns of the central court were decorated with a painting showing birds fluttering around a series of garlands set against a sky blue background.[836] Unfortunately, no photographs of this painting were ever published, and it is therefore impossible to discern how far the composition pre-figured the Italian garden paintings analysed in this chapter.

VI. Conclusion

In conclusion, there is a strong possibility that some of the individual ornithological and botanical species represented in our finest surviving garden paintings relied on detailed prototypes that originated in the artistic centres of the Hellenistic world. Given that accurate representations of individual ornithological specimens seem to have been particularly popular in the art of Attalid Pergamon, and that a series of specific typological relationships can be

[835] Venit 2002, 34-36; McKenzie 2007, 108-112.
[836] Pagenstecher 1919, 109; cf. Adriani 1963, 125; Venit 2002, 29, 34; *Id.* 2016, 52.

traced between Pergamene mosaics and Italian garden paintings, it would be unsurprising if the Attalid royal capital was a particularly fruitful source of prototypes of this kind.

According to this theory, our finest surviving garden paintings re-contextualised Hellenistic iconography in a manner comparable to the late Republican fish mosaics of Praeneste, Pompeii and Panisperna. We saw in Chapter Five that the significance of the iconography of the fish mosaics shifted according to context, and the same is presumably true of the accurate representations of ornithological and botanical specimens included in our garden paintings. When these birds and plants were depicted in the garden paintings themselves, they were united – even subsumed – by their placement in a communal setting, and their significance probably lay in their contribution to the overall iconography of each composition. But any representations that were derived from the pre-existing art of Hellenistic world may have had very different meanings in their original Hellenistic contexts. These original meanings are, of course, very difficult for us to re-construct: but given that the depictions seem to have been based on the close observation of real life specimens, it is at least possible that they had a scientific dimension.

Chapter Eight:

Conclusions

The animal kingdom played an important role in defining power and privilege in the Hellenistic world. Kings ruling in Ptolemaic Alexandria and Attalid Pergamon recognised that animals might serve as vehicles for advertising their territorial aspirations and the geographical extent of their power, and so sponsored ambitious programmes geared towards collecting, classifying, describing, and depicting creatures from across the known world. Ptolemy II Philadelphos was particularly attuned to the ideological potential of the animal kingdom, and his decision to parade enormous numbers of species through the streets of Alexandria during the 270s B.C. remains a stand out example of royally sponsored interest in animals during the Hellenistic age.

In the preceding chapters, we have seen that the visual material surviving from antiquity permits us to re-construct several different aspects of this royal interest in the animal kingdom. Most revealing of all is the Nile Mosaic of Praeneste, which indicates that the Ptolemaic agents who travelled to the lands south of Egypt in search of war elephants and other commodities during the third century B.C. composed descriptions and depictions of the animals that they encountered, without necessarily being able to study the species concerned at very close quarters. The fantastical creatures interspersed with real animals in this composition suggest that these Ptolemaic royal agents sometimes blurred the lines between fact and fiction, an observation that is hardly surprising when we consider the taste for *paradoxa* within elite circles during Hellenistic times.

Other works of art indicate that animals were also kept in captivity and studied in close detail in the royal centres of the Hellenistic world. In Alexandria, large quantities of fish and other marine creatures were catalogued and depicted with extraordinary accuracy, and it would be unsurprising if other animals transported to the Ptolemaic capital during the third century B.C. were treated in a comparable manner. In second century B.C. Pergamon, meanwhile,

birds were a subject of particular interest, and were deemed to be sufficiently important that detailed representations of individual species were used to decorate the royal *Basileia* atop the city's acropolis. We can only speculate about the existence of a Ptolemaic royal aquarium or an Attalid royal aviary, but the visual evidence indicates that the absence of direct literary testimony concerning such institutions does not necessarily constitute evidence of absence. It is even possible that naturalistic representations of animals in three-dimensional artistic media, such as the Jennings Dog in the British Museum (Fig. 235) and the Uffizi Boar (Fig. 236),[837] originated in comparable contexts.

The zoological programme in Alexandria fits neatly with what we know of the intellectual achievement of that city during the third century B.C. The accumulation of animals in the capital matches the accumulation of books and distinguished intellectuals; the impulse to catalogue and classify different species resonates with the accomplishments of scholars like Kallimachos of Kyrene; and the emphasis placed on the exotic origins of many of the animals recalls the emphasis on the royal domination of foreign territories in contemporary court poetry. In short, the programme constituted a novel instantiation of a broader cultural and intellectual agenda that was designed to paint the Ptolemaic kings as the rightful heirs to Alexander's empire and the legitimate rulers of the entire *oikoumene*. Given how far the Attalid kings went to replicate certain aspects of this agenda, it would be unsurprising if the Pergamene zoological programme was consciously modelled on its Alexandrian counterpart. Quite possibly, the acquisition of exotic animals acquired a competitive edge, and provided one way in which kings might advertise their superiority in a world where the acquisition of knowledge was synonymous with power.

[837] Harden 2014, 55: "In the surviving media, truly naturalistic animals are generally Hellenistic".

But the impact of the Alexandrian zoological programme was not confined to the royal *metropoleis* of the Hellenistic world. Local élites living in provincial centres also engaged with this new mode of expressing status and privilege, notably in third century B.C. Palestine, where a powerful Sidonian named Apollophanes utilised the animal kingdom to express his own elevated position in his adoptive hometown of Marisa. Over time, the Hellenistic interest in animals seems to have continued to filter down the social spectrum, judging by the eccentric sketches on the *verso* of the so-called Artemidoros papyrus, which were probably drawn by a modest student in an environment where the cultural currents of the Ptolemaic capital circulated freely: somewhere in the Fayyum, for argument's sake.

In light of all of these developments, it is possible that eminent scholars working in the cultural capitals of the Hellenistic world composed zoological treatises that have not been preserved to the present day, in the vein of Kallimachos' works *On Birds* and *On Changes in the Names of Fish*. The character of these treatises remains entirely hypothetical, but an emphasis on description and classification would correspond tidily with the surviving artistic evidence.

It is, of course, difficult to estimate when the Alexandrian and Pergamene intellectual programmes may have come to halt. In Pergamon, a logical *terminus ante quem* is supplied by the death of Attalos III in 133 B.C., when the Attalid kingdom was absorbed into the ever-expanding Roman empire. Still, the royal taste for depicting animals clearly struck a chord with the Roman conquerors, and it was not long before works of art modelled on earlier compositions featuring animals began to be produced in in flourishing Italian settlements such as Praeneste and Pompeii. Although these representations of animals probably acquired fresh meanings in their new Italian contexts, their very existence provides yet another compelling example of the reception and re-production of Hellenistic visual culture in the Roman West. A useful point of comparison is provided by the vegetal frieze that decorated

the Ara Pacis, an altar commissioned by the Roman senate to celebrate Augustus' safe return from Spain and Gaul in 13 B.C,[838] which constitutes a lavish incarnation of a scheme of botanical representation that had become well established in the Hellenistic world, particularly in the art of Attalid Pergamon.[839]

The re-production of Hellenistic iconography in Italian contexts poses very pertinent questions concerning the ways in which images were transmitted over long distances during antiquity. The extraordinary naturalism of the individual ichthyological specimens depicted in the fish mosaics from Praeneste, Pompeii and Panisperna – as well as the birds and leftovers depicted in later versions of the mosaics attributed to Sosos of Pergamon by Pliny the Elder – suggest that the artists responsible for these compositions relied on detailed prototypes executed on a 1:1 scale, rather than on small scale pattern books carried in parchment or papyrus, for which concrete evidence remains conspicuously absent.

The circulation of these prototypes allowed detailed representations of animals to be configured in new ways, with a good example provided by our surviving corpus of garden paintings from Latium and Campania, which may have incorporated accurate representations of birds and plants that originated in centres such as Alexandria and Pergamon. But these paintings were by no means the stopping point for the Hellenistic canon of naturalistic representation of living things. In fact, a series of specific correspondences can be drawn between the individual botanical specimens depicted in our finest surviving garden paintings and the illustrations of plants that were included in the earliest illustrated codex of Dioskourides of Anazarbos' first century A.D. treatise *De Materia Medica*, the so-called Juliana Anicia Codex, which is dated to A.D. 512-513. These correspondences, which will be

[838] For a synoptic account of the altar, see Claridge 1998, 184-189. For a detailed study of the frieze and its "distinct, recognisable botanical species", see Caneva 2010.
[839] Castriota 1995, 13-57.

elucidated in greater detail in a future study, suggest that the artistic legacy of taxonomically accurate Hellenistic depictions of plants and animals may have persisted all the way into Late Antiquity.

The value of this thesis, I hope, lies in its demonstration that material and visual culture can be just as instructive as texts when attempting to re-construct Hellenistic culture and society. Whilst our literary sources provide some indication of the importance of the animal kingdom during the Hellenistic period and beyond, it is only with reference to the surviving artistic material that we can sketch the true outlines of this remarkable historical and cultural phenomenon.

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