IDENTITY AND PLURALITY:
MEDICINE IN PTOLEMAIC EGYPT

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DECLARATION

This thesis is the result of my own work and includes nothing that is the outcome of any work done in collaboration. This thesis does not exceed the word limit for the Degree Committee of the Faculty of Classics as stated in the Memorandum to Graduate Students.

Signed Philippa Lang
SUMMARY

My thesis, \textit{Identity and Plurality: Medicine in Ptolemaic Egypt}, examines the various ways in which medicine was practised in Egypt between 332 and 30 BCE, the period when Egypt was ruled by the Greek family of the Ptolemies and there was a large Greek emigration into Egypt.

The first chapter summarises the characteristics of Greek and Egyptian medicine before the Ptolemaic period. I show how the ideas and practices of both societies are affected by their cultural context. I then analyse the position of the Greek medical practitioner in Ptolemaic Egypt, and argue that institution of the medical tax assumed that Greek medicine was a distinctive part of Greek culture. I examine the numbers of practitioners in the countryside and towns, and their relationships with the governing administration. Finally I consider the role of folk medicine in Greco-Egyptian societies and possible interactions between Greek and Egyptian practitioners.

The second chapter explores temple medicine. I investigate the practice of incubation in Egyptian temples, and show that while Greek and Egyptian preconceptions in this area were generally compatible there were also subtle differences in their expectations. The Greek perceptions of Egyptian cults and gods, in particular the Greco-Egyptian god Sarapis are investigated, and I analyse the numbers and social status of pilgrims. Finally I show that there may have been limited interest in Greek medicine on the part of the Egyptian temples, but that overall Greeks reacted and adapted to Egyptian institutions and practices.

The third chapter analyses the Alexandrian anatomists Herophilos and Erasistratos and the Empiricist, Herophilean and Erasistratean ‘sects’. Having analysed trends in the history of Greek theoretical medicine I demonstrate how Herophilos’ and Erasistratos’ views can be seen as developments of these trends to the point where
they became exclusive alternates, and how this led to the development of the medical sects. Finally I examine the proposed candidates for Egyptian influence on the Alexandrian anatomists, and propose that the visible monuments of pharaonic culture may have indirectly affected Alexandrian mechanical and medical discourse.

The fourth chapter explores the perceptions of healing and the healer in Greek society. In particular it analyses how poisons, power and the discovery of plants were used to construct Hellenistic models of the good and bad king; how Hellenistic poets and writers used medical images and ideas; and how the advice and warning of the Hippocratic writers and the stereotypes of popular literature about the behaviour of physicians clarify the concerns of Greek society about medical power.

In conclusion I argue that the study of medicine in the ancient world offers the opportunity to examine societies though the plurality of approaches and attitudes to a subject of inescapable importance. This is particularly so in Ptolemaic Egypt, where healing was not simply part of two cultures but a means by which they interacted. Ethnic, social, intellectual and moral identity was partially constructed through the choices of patients and healers, and medicine was an arena of competitive cultural and individual expression.
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PREFACE

Modern literature tends to refer to the Ptolemaic and Roman periods as a whole, the so-called 'Greco-Roman' period. I believe this is often misleading. Any analysis that includes not only the three centuries of Ptolemaic rule but also the duration of the Roman empire is bound to simplify and smooth out many changes in demography, administration and cultural preferences. Secondly Roman Egypt is not simply Ptolemaic Egypt with the addition of a few Romans and the use of Latin for official names. The latter was a country ruled by Makedonian Greeks for whom Egypt constituted their power base and residence, the former an Egypt assimilated into a large empire governed from Rome. Both may be unlike the Egypt of the pharaohs but this does not mean that they are identical to each other, particularly in the administration of the economy and the temples and their repercussions on society.

I have therefore tried to restrict the archaeological, epigraphical and papyrological evidence used in this thesis to that which can be demonstrated to belong to Egypt in the Ptolemaic period. Additional information from the pharaonic, Persian and Roman eras, and from the Greek mainland or elsewhere in the Hellenistic world has been included where it seemed relevant. That is, firstly to describe matters before the Ptolemaic period or outside Egypt for purposes of comparison. Secondly where the evidence relates to practices and perceptions that remained relatively stable. Thirdly, where Ptolemaic evidence is limited or non-existent. All such sources are clearly marked as non-Ptolemaic. Rather more use has been made of Egyptian, Greek and occasionally Latin literature from other periods for purposes of comparison or in cases of continuity, but again with caution.

Since information from the Ptolemaic period is considerably rarer than that from the longer and more recent Roman era, this strategy often means that there is insufficient evidence to securely resolve a question. I have also preferred to err on the side of caution in analysing what evidence there is, and to investigate different possibilities rather than come to definite but largely unsubstantiated conclusions.
I have been somewhat inconsistent in my choice of spellings and language for names, works and places. In almost all cases I have used the Greek spelling for Greek names, with a few exceptions. For instance Ptolemy has been retained for the royal family as it serves to distinguish them from other bearers of the name Ptolemaios. The traditional spelling has also been retained in a few cases when its removal proved distracting, as in Sextus Empiricus and Jason. Titles of works are given in the Latin version.

To the non-Egyptologist variations in the transliteration of Egyptian names, terms and places can be somewhat bewildering. Here it is certainly inconsistent, and tends to appear as spelt in the source in which I read it. Demotic, hieratic and hieroglyphic texts were read and appear entirely in translation. Certain crucial words such as swnw, the Egyptian for physician, are given in both transliteration and translation, or left untranslated but explained where their meaning is unclear or very complex. This applies often to the names of diseases.
ACKNOWLEDGEMENTS

My supervisor Professor Geoffrey Lloyd offered excellent critical advice and the benefit of his enormous knowledge of ancient science and the classical world at all stages. I am also very grateful to Dr. Dorothy Thompson for giving me access to the forthcoming work by Thompson and Clarysse on Ptolemaic Egypt, *Counting the People*, which includes new readings and editions of several papyrus texts. Dr. Thompson also offered much useful advice at earlier stages. Any errors on taxation and papyrology are certainly entirely my own.

Dr. Karin Tybjerg very kindly read most of the thesis in its final stages and also provided much encouragement, sympathy and information about mechanics. Polly Low responded calmly to sudden demands for information on military organisation, epigraphy and computing problems. I owe Dr. Mark Horsburgh thanks for bringing the article in *Nature* to my attention. I would also like to express my gratitude to the AHRB for funding the entire enterprise.

I am particularly grateful to my mother, Dr. Gillian Lang, not only for sterling proof-reading at very short notice but also for her unqualified and unflappable encouragement throughout.
ABBREVIATIONS

Note that KMT is not an abbreviation but the full journal title.

BIFAO: Bulletin de l’Institut Français d’Archéologie Orientale
BHM: Bulletin of the History of Medicine
BM: British Museum (catalogue)
Cat. gén.: Catalogue Général des Antiquités Égyptiennes du Musée du Caire.
CE: Chronique d’Égypte
CMG: Corpus Medicorum Graecorum
CML: Corpus Medicorum Latinorum
CNRS: Centre National de la Recherche Scientifique
CP: Cælius Aurelianus, Celeres passiones.
CQ: Classical Quarterly
HP: Theophrastos, Historia plantarum
IFAO: Institut Français d’Archéologie Orientale
IG: Inscriptiones Graecae
IGR: Inscriptiones Graecae ad Res Romanas Pertinentes
JHS: Journal of Hellenic Studies
M: Sextus Empiricus, Adversus mathematicos
Mon. Ant.: Monumenti antichi pubblicati per cura della Reale Accademia dei Lincei.
NH: Pliny, Naturalis historia
PA: Aristotle, De partibus animalium
PH: Sextus Empiricus, Pyrrhoniae hypotyposes


SEG: Supplementum Epigraphicum Graecum

SHA: *Scriptores Historiae Augustae*

INTRODUCTION

Ptolemaic Egypt and ancient Greek medicine have both attracted much more attention from classicists in the last few decades than ever before. In the earlier part of the century the work of Temkin and Edelstein on medicine was often brilliant and wide-ranging, but this was very much the exception. More recently the pioneering research of G.E.R. Lloyd has done much to revolutionise studies of ancient science. Like many other historians of ancient medicine my theoretical approach is heavily influenced by Lloyd’s work on the competitiveness of Greek practitioners of healing and their relations with society.

Egyptian medical texts have been published in various languages, and in editions of various quality. For example 1930 saw the publication not only of the famous linguistic expert J.H. Breasted’s translation of the ‘Edwin Smith’ papyrus, but also C. Bryan’s virtual parody of the ‘Ebers’. Fortunately scholars need not rely on this or other earlier editions for the Ebers, owing to Bardinet’s recent translation and analysis of all the Egyptian medical papyri.

Grapow’s Grundriss der Medizin der alten Aegypter and several prosopographical lists were complemented by the investigations of Jonckheere and others into the social and economic positions of physicians. A brief survey of pharaonic medicine is that of J. Nunn, a British Museum text for the general reader as well as scholars that nonetheless contains much useful collected information and reasonable interpretations. The Egyptologist R. Ritner has entered the field as a forceful advocate of Egyptian medicine against what he perceives as its misinterpretation and downgrading by some classicists. I take up a position in this debate below.

For Greek Egypt in general M. Rostovtzeff’s social and economic analysis of the Hellenistic world and Cl. Préaux on the Ptolemaic economy remain extremely
important works for students of Hellenistic history. In their wake Egypt in the Greco-Roman period has been the subject of much historical inquiry, including its demography, politics, economics and ethnic relations.

Research has also increased in recent years into the combination of the above fields of enquiry, the science and in particular the medicine of Ptolemaic Egypt. However the huge majority of this work concentrates upon the ideas of a very few elite physicians in Alexandria. The publications of H. von Staden must be singled out here, especially his edition of the fragments of Herophilos and his school. M. Frede also wrote widely and persuasively on ancient medicine and its relations with philosophy.

The subject of gods and medicine has received attention both from classicists and Egyptologists. Nonetheless the form taken by Greek temple medicine in Ptolemaic Egypt itself and its relations with Egyptian religion has not been thoroughly explored. Again, social and historical analysis of the role(s) of Greek medicine in Egypt has generally been limited to various attacks upon the medical tax or ἱατρικόν, discussed here in chapter one. Marguerite Hirt’s thesis on medicine in Roman Egypt has often proved valuable in areas of common interest, although I differ from her on the interpretation of several points.

No-one has conducted a systematic investigation into all the forms of Greek healing in Ptolemaic Egypt, the subject of this thesis. It includes temple medicine, folk medicine, and secular medicine of all social strata.

I have also explored issues of ethnicity, identity and culture through the comparison of Greek and Egyptian healing and in particular their interactions in Ptolemaic Egypt. This is of course not a complete account, not least in that it entirely ignores the existence and medical practices of Jewish and other ethnicities in Egypt besides the Egyptians and Greeks. Moreover in spite of my attempt to include the ‘Egyptian side’, the thesis concentrates on Greek perceptions of themselves and their relations with Egyptian medicine, religion and society. Thus chapters one and two contain
most of the Egyptological material in addition to Greek medicine, while chapters three and four primarily investigate Greek culture. It is perhaps advisable for a classicist not to stray too far onto unfamiliar territory, so I hope Egyptologists will forgive me for this quantitative Hellenistic bias.

The absence of work on classical and Egyptian traditions in Ptolemaic Egypt is due to the tendency among both classicists and Egyptologists to largely ignore each other’s disciplines. When they do interact it can be more like a collision, particularly in Ritner’s acrimonious attacks on von Staden and others’ views on Egyptian medicine. Ritner perceives these to contain an implicit assumption that Greeks are culturally superior to Egyptians, and his point that Egyptian medicine is often described in “smirking” terms has some validity. He also remarks that the “absence of interaction” may have been overstressed, albeit as a corrective to earlier errors in the opposite direction.¹

I believe that the apparent disagreements are in fact often a matter of differing goals. These lead to the emphasis of one aspect in favour of another, or the analysis of one culture in terms of another. Von Staden is primarily interested in Egyptian medicine only in terms of its possible effects on Herophilos and other elite physicians, and in chapter three I will argue that he was probably right to say that it had little impact on this kind of Greek medicine. Ritner’s response is essentially to claim that on the contrary Egyptian medicine is equal, prior and possibly superior to at least some of Greek theory. This competitive approach is fundamentally flawed.

Firstly, questions of ‘influence’ are notoriously difficult, and are not helped by the shortage of evidence. Secondly and more importantly I shall argue in chapter one that to ask the question of whether Egyptian medical theory and treatments are superior or inferior to those of the Greeks is to ask the wrong question. It assumes that medicine

is essentially the same thing everywhere, and all that differs is how good different cultures were at it.

Instead Egyptian medicine should be seen as taking another approach to that of 'rational' Greek medicine.² When considering which was 'superior' it is worth remembering that death rates in the ancient world did not vary greatly according to medical treatment. In most cases diet, environment and epidemiology were far more relevant to health than medical treatment, of which the most useful part would often have been the placebo effect. It should also be noted that the differences do not mean that Egyptian medicine had nothing in common with any part of Greek medicine whatsoever. Folk, temple and even aspects of elite secular medicine were often similar in both cultures, or at least capable of being identified as such.

Therefore my aim in this thesis has not been to set up Egyptian and Greek medicine in competition against each other for the prize of being the most like modern scientific medicine. It has been to investigate how the patients and practitioners of healing in Ptolemaic Egypt perceived medicine, and to analyse the implications of these perceptions.

Chapter one is about non-elite secular medicine.³ I compare Greek and Egyptian medicine to each other in order to identify areas of similarity and difference. I then proceed to examine the role of the Greek physician in the society of Greek Egypt. This includes their relationships with the governing administration and their numbers, clientele and distribution, in the context of pharaonic precedents and a majority Egyptian population with an alternative medical tradition. Finally I consider the characteristics of folk medicine and its potential for cross-cultural exchange.

² See chapter one pp. 18-19.
³ ‘Elite’ refers to physicians of relatively high social and intellectual status, who usually published their opinions. ‘Secular’ identifies a healer for whom affiliation with a temple or god is not necessary.
Chapter two investigates temple medicine. Again I discuss parallels and differences before exploring the effects of gods of both ethnicities upon the distribution and nature of temple healing.

Chapter three shifts away from the Egyptian view to discuss the distinctive world of the elite Alexandrian physicians, distinct not only from Egyptian traditions but also from much of classical and Hellenistic medicine. Thus this chapter seeks to answer the question of why it was Ptolemaic Alexandria that saw not only the innovative methods and theories of the anatomists but also the emergence of the medical schools.

Chapter four relates Greek medicine to Greek culture, exploring its expression of itself and its perceptions by others. The image of the healer was subject to continual competition and revision, while also providing important templates for the expression of ideals, ideas and emotions.
ONE: THE PRACTICE OF GREEK MEDICINE IN EGYPT

1.1: Introduction

The subject of this chapter is non-elite Greek medicine, with the exception of temple medicine. Its aim is to define the similarities and differences of Greek and Egyptian medicine in relation to their socio-cultural history; their effects on the society, economy and culture of an ethnically diverse Ptolemaic Egypt; and their effects or lack of effects on each other.

I shall begin in 1.2 with brief summaries of what is known about the ideas and practices of pre-Hellenistic medicine in both Egypt and Greece, attempting to identify notable differences and similarities.

1.3 will concentrate on one particular form of Greek healing, ‘rational’ medicine. This was practised separately from, and with some degree of opposition to, temple and folk medicine by ‘professional’ physicians (laτροι) of the classical and later periods. I shall argue that the distinctive and exclusive characteristics of such professional Greek medicine resulted in its integration by the early Ptolemies into the administrative and fiscal systems. This enfolded the laτρος in the nexus of governmental power and Greek cultural identity, and explicitly opposed parts of Greek and Egyptian medical practice to each other. Crucial to this enterprise was the medical tax (laτρυκόν), which will be examined in detail, as will the few examples of bureaucratic titles apparently relating to some form of medical administration.

In 1.4 I shall attempt to assess the likely extent, role, practices and practitioners of folk medicine in Greek Egypt, including self-proclaimed physicians unrecognised by the administration. This section will also explore the status and role

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4 It is impossible to discuss Egyptian medicine without some reference to Egyptian religion, but a full discussion of temple medicine is delayed until chapter two.
5 All dates are BCE unless stated otherwise. Dates of Egyptian chronology are taken where possible from Shaw (2000).
6 ‘Professional’ refers to the primary occupation of an individual, that by which they are identified, by which they obtain the majority of their livelihood, and on which they expend the majority of their time.
of the acknowledged but non-elite doctor in the context of local society. These and other practitioners of folk medicine are largely absent from the historical record due to their lack of elite status or administrative importance, and to their reliance on a largely oral knowledge, so comparative material will be used in addition to the scanty direct evidence.

Finally, 1.5 will examine the effects or lack of effects of Egyptian and Greek medicine on each other.

1.2: **Similarities and differences in Egyptian and Greek ideas of illness**

In the early third century CE Clement of Alexandria claimed that six of the forty-two books of ancient Egyptian wisdom were medical and that, of these, one was on the structure of the body. Even if such texts did ever exist, it is still far from clear what would have been the extent and kind of the anatomical knowledge they recorded.

The most of important of the extant Egyptian medical papyri for gauging the Egyptians’ awareness of human anatomy is the Edwin Smith (ES). The extant text, which dates to ca. 1550, is a copy, but the original may have been composed as early as the Old Kingdom, ca. 2686-2125. The copy includes many technical anatomical and other terms which have later been extensively glossed, probably by New Kingdom physicians ca. 1550-1069. It comprises a survey of traumatic injuries, dealt with in order from the head down to the upper body region, at which point the papyrus abruptly breaks off.

Numerous brief descriptions of internal illnesses and processes are included within the Ebers medical papyrus, a large reference collection of different medical

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7 *Stromata* 6.4.1: τάς δε λοιπὰς ἔξε, οἷς πατοφόρας ιατρικὰς οὖσας περὶ τῆς τοῦ σώματος κατασκευῆς, καὶ περὶ νόσων, καὶ περὶ ὀργάνων, καὶ φαρμάκων, καὶ περὶ ὀφθαλμῶν, καὶ τὸ τελευταῖον περὶ τῶν γυναικῶν. The existence of a book of anatomy need not imply a tradition of dissection: early Greek medical texts contain rampant anatomical speculation unrelated to dissection.

8 Breasted (1930) 88, 293.
texts from ca. 1534. These papyri reveal that the Egyptians had a notion of stable organized structures within the body.9

Some scholars have argued that there is evidence for anatomical investigation and a tradition of non-traumatic surgical expertise in the earlier periods of Egyptian history.10 It is a fragile argument, which rests primarily on the interpretation of some of the earlier medical papyri as being less ‘magical’ than later ones. This view not only fails to take into account the piecemeal and extremely limited nature of the sources, but also represents a misunderstanding of the nature of Egyptian medicine. The distinction between practices and concepts which we would today call ‘magical’ and those which we would not is a distinction that would have been largely or entirely meaningless to the ancient Egyptians themselves.11

Egyptian physicians (swnw) certainly had opportunities for anatomical observation and even investigation. They could have utilised cases of casualties of violence and accidents at work, as did some physicians of the Roman empire after human dissection had largely fallen out of favour.12 The Egyptians must also have had some knowledge of animal anatomy, discovered in the course of butchery and animal mummification. This supposition perhaps receives some support from the fact that when anatomical structures are used as hieroglyphs the external organs depicted tend

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9 For structures, see e.g. Ebers 188, 192, 856g; ES case 1 gloss A; case 7 especially glosses B and C; cases 12 and 34 gloss A mention vessels (metu) leading to the lungs.
11 Indeed the fluidity and lack of boundaries between the socially dependent and derived concepts involved is still clear in the problems experienced today in even defining what is meant by ‘magic’, or how this might differ from religious practices and concepts.
12 Galen De anatomicis administrationibus 1.2 (2.221 Kühn). Breasted (1930) 11 suggests that battle surgery was the origin of the ES. Work casualties were certainly frequent. There appear to be depictions of such incidents and their treatment in the 20th Dynasty tomb of Ipwy at Deir el Medina: L. Green (2000-01) 79. The ostraka found at Mons Claudianus reveal the kinds and frequency of injuries suffered by manual workers in Egypt in the Roman period, which in this regard would not have differed greatly from the Ptolemaic or the pharaonic. Ostrakon 212 (CE 137-145) lists workers out of action on a single day: one has an eye infection caused by a stone splinter, 4 have been injured, one bitten by a scorpion, one is fevered, one is convalescent (ἀναλαμβάνων) and one burnt (κατσάριον): Bingen et al. (1997).
to be human, while internal organs are those of animals.\textsuperscript{13} However by far the greatest anatomical awareness must have been among those involved in the practice of embalming the dead. The lungs, liver, intestines, and brain were all removed during mummification. Words also existed for the spleen and bladder, though the kidneys may have remained unknown.\textsuperscript{14} The heart, the \textit{locus} of all emotion and thought, was retained in the body.

Such expertise could have been easily transmitted to healers of the living. A few examples of connections between \textit{swnw} and embalmers are attested for the pharaonic period. The ES quotes a “Treatise on what pertains to the embalmer”, and the grandson of one embalmer was a “chief of physicians” (\textit{wr swnw}) in the Middle Kingdom (ca. 2040 – 1650).\textsuperscript{15} Anubis, the divine embalmer, is called a \textit{wr swnw}. The same word “recipe” (\textit{pekhret}) is used for the treatment of both the living and the dead. After ca. 380, and throughout the Ptolemaic period, the word \textit{swnw} is also applied to the embalming priest, translated into Greek as \textit{τάρτης}.\textsuperscript{16}

As demonstrated by the ES cases and similar examples in other medical papyri such as the Carlsberg and the Ramesseum, Egyptian physicians knew the appearance of many traumatic injuries and means of treating them. Their methods included the excision or draining of swellings with the knife, cauterisation, the setting of fractures with splints, the reduction of dislocations, the stitching of flesh wounds, and bandaging.\textsuperscript{17} Ebers 860, recommending the knife for removal of a swelling of fat on the neck, warns the practitioner to avoid cutting the blood vessels. There is a similar

\textsuperscript{13}Nunn (1996) 52.
\textsuperscript{14}Peck (1983) 21.
\textsuperscript{15}ES case 19 gloss A; c.f. case 3 gloss A, 41 gloss A. Ghalioungui (1983) no. 59.
\textsuperscript{16}Ritner (1993) 54-6.
\textsuperscript{17}Examples of most of these can be found in the ES. Stitching: cases 3, 10, 14, 23, 26, 28, 47. Linen splints and braces of three different kinds are prescribed in cases 35, 36, 37. A mummified corpse dating to 1065-740 has been found at Thebes with a prosthetic wooden toe apparently used before death: Nerlich et al. (2000). A fracture is set in ES case 12, c.f. case 35. Case 25 (with plate 6) describes the reduction of a dislocated jaw, which parallels both modern procedure and the method outlined in the Alexandrian Apollonios of Kition’s first century text \textit{In Hippocratis de articulis commentarius} 2 (CMG 11.1.1, 48-50 with plate 14). Yet reduction is not the standard treatment for dislocations in the Egyptian papyri. More typical is ES case 43, which applies external remedies only.
injunction at 871. Recently, bodies from the third millennium city of the pyramid workers at Giza have been found on which successful amputations have been performed.\textsuperscript{18} There are several references in the Ebers to "the man with the hemen instrument" which was used in procedures involving a knife.\textsuperscript{19} The Ebers advises its readers to look after its post-operative patients like the "man with the hemen." This suggests a specialist role for that person, but evidently surgery was not his exclusive prerogative.

What is lacking in all this is any indication that Egyptian physicians employed surgery as a method of treatment for non-traumatic internal illness.\textsuperscript{20} No certain surgical scars have been identified on over thirty thousand mummies examined in the last two centuries.\textsuperscript{21} Trepanation was possibly known, as it first appears in Neolithic times and its geographical distribution is so widespread as to include both Europe and South America, but no definite examples of it have been found in Egypt.\textsuperscript{22} Even non-traumatic surgery that does not require an actual incision seems rare. The still hotly debated evidence for surgical dentistry and the identity of dentistry as a branch of medicine comes primarily from the period of the Old Kingdom, and the few examples of wired and bridged teeth known for this period may have been reconstructed during mummification or manufactured as charms.\textsuperscript{23} Dental remedies in the extant medical papyri are non-surgical.\textsuperscript{24} No undisputed medical instruments or depictions of them have been found from pharaonic times.\textsuperscript{25} The extent of the practice of circumcision

\textsuperscript{18} Hawass (1997).
\textsuperscript{20} There are three possible examples of non-traumatic illness in the ES: cases 39, 45, 46. Only the first of these is treated mechanically, with cauterisation for pus-filled swellings, c.f. Ebers 872.
\textsuperscript{21} Rowling (1989) 316.
\textsuperscript{22} Distribution: Sullivan (1996) 471. An Egyptian skull of 600-300 from Giza is possible: Filer (1995) 90-91. In Greek medicine the Hippocratic treatise De capitis vulneribus 21ff (3.257 Littre) and later texts such as Celsus 8.4 describe various operations upon the skull.
\textsuperscript{23} Ikrarn and Dodson (1998) 98.
\textsuperscript{24} Compare this with, for example, the existence in Greek medicine of a special forceps (πτερόν) for extracting roots: Celsus 7.12.1.
\textsuperscript{25} Those painted on the walls at Kom Ombo are of Roman date: see Ritner (2000) 113 and bibliography in Nunn (1996) 163-4.
and the role, if any, of *swnw* in it, remain matters for debate.\textsuperscript{26} No surgery is prescribed in the medical papyri as a treatment for gynaecological conditions. Instead the treatment is a local or oral application, although names for most distinctive female organs, including internal ones, exist in the medical papyri.\textsuperscript{27} This is in spite of the fact that gynaecological problems are well represented in the extant Egyptian medical texts, especially in the Kahun papyrus. It is also in sharp contrast to Greek medicine, in which gynaecology included the dissection in the womb and subsequent extraction of a dead foetus.\textsuperscript{28}

It is true that Greek medicine used cauterisation and the knife primarily for wounds, and, more ambitiously, on visible structures such as facial mutilations.\textsuperscript{29} Nonetheless internal surgery in cases where there was no pre-existing break in the body’s surface was practised as early as the fifth century, as can be seen from the anonymous collection of largely classical medical texts now known as the Hippocratic Corpus. One of these describes an operation to remove pus in the pleural cavity which necessitated an incision between the ribs and the insertion of a draining tube.\textsuperscript{30} Celsus’ first century CE encyclopaedia of medicine reserves for his seventh book “cases in which the practitioner does not find wounds but makes them.”\textsuperscript{31} The examples listed include the removal of hernias from the inguinal region or the scrotum, the excision of tonsils, incisions into the bladder to remove stone, the replacement of prolapsed intestines, and, similarly to the *De morbis* procedure, the draining of water in dropsy through a tube inserted after deliberate perforation of the

\textsuperscript{26} It is not mentioned in the medical texts but is depicted twice. A scene in the sixth dynasty tomb of Ankhmahor at Saqqara shows two young men being circumcised. The second example is a badly damaged scene in the temple of Mut-en-Ashara at Karnak. An examination of mummies has shown that circumcision was frequently practiced: Filer (1995) 90. Diodoros Sikulos asserts at 1.28.3 that the Jews and the Kolkhi of the Pontos brought the custom of circumcision with them out of Egypt.

\textsuperscript{27} Local and oral applications: e.g. Ebers 783.3, 784, 789, 800, Kahun 3, 4, 10. Terminology: L. Green (2000-01) 81.

\textsuperscript{28} Hippocrates *De exsectione foetus* (8.512 Littré); c.f. Celsus 7.29, Soranos *Gynaecia* 4.9-13 (*CMG* 4, 140-144). According to Tertullian Herophilus used an instrument called a “foetus-slayer” for such a procedure: von Staden (1989) T247.

\textsuperscript{29} For the latter see *P. Univ. Giss.* 4.44 (ca. 100) ed. Marganne especially p. 186.

\textsuperscript{30} *De morbis* 2.47 (7.64-72 Littré).

\textsuperscript{31} 7 praef. 5.
abdominal cavity. In cases of liver ailments Erasistratos is said to have “cut the skin and the membrane covering the liver and applied drugs extensively to the organ itself; then he drew aside the stomach and boldly laid bare the part that was affected.”

Operations were particularly common for eye problems, such as cutting out cysts in the upper eyelid and even the removal of cataracts. Methods for this type of procedure were improved or developed in the Hellenistic period, notably by the ex-Herophilean and Empiricist Heraklides of Tarenton in the first century. According to Celsus cataract operations depended on a detailed knowledge of the anatomy of the eyeball, including the ῥαχυοελδήμενον membrane (retina) named and probably observed for the first time by Herophilus in the third century.

There is a large proportion of eye conditions in the medical literature of pre-Ptolemaic Egypt. They comprise, for example, paragraphs 336-431 of the Ebers. Yet there is no evidence in the Egyptian medical literature and archaeology for ophthalmic operations, with one possible exception. Ebers 424 and 425 specify the recipes to be used in a case of a “twisting of eyelashes in the eye” to prevent regrowth after the eyelash has apparently been pulled out – Bardinet’s translation (1995) has “extirpé.” The ingrowing of eyelashes into the eye was a common problem in the ancient world, and Celsus devotes considerable space to their extraction and cauterisation. If the Ebers’ “twisting” refers to the same affection, then the Egyptian doctors may have employed a similar procedure to that of the Greeks. This also suggests that the Ebers’ concentration on materia medica did not necessarily

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32 7.19, 7.12.2, 7.26.2, 7.20, 7.15. The operation to remove bladder stone was risky, and was probably the operation that killed Antiochus VI in the second century (see chapter four). The Hippocratic lusirandum’s apparent restriction of it to specialists suggests that the procedure was already known in the classical period. That Celsus’ descriptions often go back to the Hellenistic period and sometimes before can be safely assumed not only by the similarity between some procedures but also by Celsus’ highlighting of the work of Alexandrian surgeons of the Ptolemaic period in the preface to book 7.

33 Caecilius Aurelianus TP 3.65 (CML 6.1, 2.716.29-32).
34 Ps.-Galen Introductio seu medicus 13 (14.751 Kühn).
35 Celsus 7.7.6.
36 Ibid. 7.7.13.
37 7.7.8. This condition is a consequence of an endemic disease, and its removal must have been one of the commonest operations in Greco-Roman medicine: Jackson (1988) 121.
comprise the entirety of actual medical practice. The possibility remains that surgical intervention was also practised in some cases, to be assumed and left implicit by the author or compiler of a pharmaceutical aide mémoire.38

In spite of this possibility, the picture of Egyptian medicine from the available evidence is one in which internal surgery, the deliberate incising of undamaged bodies, was probably never and certainly not routinely carried out. This is linked to the fact that anatomical investigation was at no period used as a theoretical tool – i.e. as evidence for the nature of physiology or of disease. Rowling (1989) 314 argues that aspects of the description of a head trauma at ES 33 cannot have been made solely from external appearances and were unlikely to have been noticed during mummification. He therefore concludes that on this occasion at least, post mortem experience must have occurred, but this seems to me to be stretching the evidence further than it will comfortably go.39

It appears rather that the information obtained from traumatic injuries and embalming was seen as sufficient both to treat such injuries and to explain physiology and disease. Medical knowledge was acquired as a matter of experience. It was then transmitted in written or oral form, transmuting empirical experience into a traditional, high status, secret knowledge of experts. The deliberate acquisition of information by investigation, or even innovative speculation, about the nature of the body and its workings was seen as unnecessary or impossible or inappropriate, or all of these at once.

A partial explanation for this has often been sought in Diodoros Sikulos 1.91.4. Diodoros reports that the mummification attendant whose role it is to make the initial

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38 In ES case 8 the swnw must have laid back a flap of skin on the skull, but the procedure is not described: Breasted (1930) 208.
39 Breasted (1930) 188 also notes that some descriptions in the ES could only have resulted from either dissection or the treatment of traumatic injury: e.g. case 7, c.f. case 22 gloss A but see case 25, case 8 with commentary. Breasted p. 14 notes that observation is not extended far beyond what is visible.
incisions is ritually abused by the other embalmers. This suggests that there was a taboo against cutting up dead bodies, perhaps derived from one of Egyptian religion's central myths: the butchery of Osiris by the chaotic god Seth before Osiris' reconstitution and resurrection. Such a taboo would certainly explain, if an explanation is required, the lack of any tradition of dissection and anatomical investigation beyond everyday observation. It is not, however, sufficient in itself to account for the absence of non-traumatic surgery. This kind of surgery had been undertaken in classical Greece on the limited and piecemeal foundations of accidental observation, some animal dissection, intense speculation, and empirical experience and training, but without the awareness of human internal organs afforded to the Egyptians by the procedures of embalming. Moreover taboos often fail to withstand potentially overwhelming advantages such as survival, once such an advantage is believed to exist. The point at which a widespread dislike turns into a cultural taboo is also difficult to identify. Aristotle remarks on the revulsion inspired in himself by dissection, but this did not prevent him dissecting animals.

Finally, human dissection was throughout antiquity the exception not the rule. The question is not why such investigations were absent in Egyptian medicine, but rather why the limited use of animal dissection, culminating in systematic human dissection and vivisection by a few physicians in third century Alexandria, came to be part of classical and Hellenistic Greek medicine and philosophy.

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41 The *kes* of *BM. 10390* (136) is rendered in some Greek texts by σκυτεύς, implying a role in the evisceration of the body: see Andrews (1990) 9-10.
42 Supporting evidence may be visible in the use of mutilation by knives as a form of execration. See e.g. a picture of Seth pierced by knives: Ritner (1993) 167 figure 14g.
43 For a survey of the origins and early history of dissection in Greek medicine and philosophy see Lloyd (1991) 167-193. He concludes (p. 186) that "the use of dissection before Aristotle was unsystematic, sporadic and tentative." It was rare in the Hippocratic Corpus and where it did appear, as in *De fracturis* and *De articulis*, was usually limited to knowledge gained in the actual treatment of injuries. As for human dissection, this was non-existent until third century Alexandria.
44 Modern examples include test-tube babies, post-mortem dissection, and organ transplants.
45 Chapter three will attempt to answer this question.
To account for the absence of non-traumatic operations and aggressive anatomical exploration from the repertoire of the swnw in terms of religious taboo is to assume that an explicit interdiction is necessary to prevent such developments in medical practice. I put forward instead the counter-hypothesis that, while mythic explanations might be the justification for the Egyptian reluctance to invade the body, and did indeed play a role in it, the real reason is not a prohibition on such methods but disinterest in their outcomes. Anatomical investigation and invasive surgical intervention were not live issues in Egyptian thought. The reasons as to why this was so are to be found in Egyptian conceptions of the causes and nature of disease and in the status and forms of medical expertise in Egyptian society. A detailed analysis of these, and a comparison with Greek medicine, will be required.

Egyptian concepts of physiology and illness are shrouded in obscurity. In particular, the translation of several terms referring to anatomical entities, physiological processes, and disease causes in the medical papyri is unclear.\textsuperscript{46} If physiology is broadly defined as the attribution of inter-related functions to internal bodily organs which operate in a process of cause and effect limited by the constraints of anatomy, real and imagined, then it can be said that both Greek and Egyptian healers worked with such a conception. Both medical cultures related physiology to disease and saw the immediate cause of disease as primarily a disruption of the healthy processes of the body.\textsuperscript{47} There was furthermore a similarity between basic conceptions of unhealthy substances, and notions of overflow or blockage in the body from certain substances being transported through various vessels.

In Egyptian medicine, vessels (\textit{metu}) within the body transport various substances to all parts of the body. The term refers not only to arteries and veins but also to

\textsuperscript{46}BM EA 10059 (ca.1336-1327) includes the \textit{nesyt}-disease, which involves breathing difficulties (2, incantation 5); the \textit{teneten}-disease, destructive to tissue and bone (4, incantations 11-12); the \textit{temyt}-disease of the skin (2, incantation 6).

\textsuperscript{47}Bardinet (1995) 74: "Il (l'acte médical) tend à rendre à l'intérieur-ib son parfait équilibre."
ligaments and muscles, and the metu carry blood, water, air, semen and the nesut.48 The pulse is described as the heart “speaking” through each of these metu.49 Their numbers differ, possibly according to context, and they are said to meet at the anus.50 If these passages are blocked, or overwhelmed by too much of a substance, or twisted up, illness results and the pulse is silenced in the metu.51

As in much Greek medicine, the regulation of temperature is a normal physiological process which goes wrong in cases of pathology: in Ebers 855d the twisting of the metu seems to prevent the passage of air through them, and they become hot, resulting in heat being passed on to the heart. As Bardinet comments, this implies that one function of the air or breath in the metu is to keep the interior of the body cool, while heat is a cause of illness. Such blockages and changes in temperature can cause the heart, which usually remains in a stable and healthy position, to move around the body.52 There is a slight parallel here with the mobile womb familiar from Hippocratic gynaecological texts.53

Herodotos 2.77 says that the Egyptians believed ingested food to be a potential cause of disease. The thought seems to be that food that is left too long in the bowels decays, becomes a disease-bearing entity called wekhedu, and is taken up and transported by the metu to spread disaster in the rest of the body.54 Ebers 131: wekhedu “has come forth from a putrid source (?)”.55 This belief, according to Herodotos, is behind the Egyptian emphasis on purifying the bowels with purgatives

48 Breasted (1930) 110-111.
49 Ebers 854a, c.f. ES 1 with gloss.
50 Ebers 856f = Berlin 163h, and Ebers 856b. See Bardinet (1995) 113ff.
51 Obstructions e.g. Ebers 206; overflows 855b, 854l, 855v; twisted e.g. 855d; also see 855 e and t.
52 855i, 855k, 855n, 855o.
54 This explanation is not explicit in the Egyptian payri, though it is consistent with them. The theory is explored by Steur and Saunders (1959), Yoyette (1968), Bardinet (1995), and Nunn (1996). Ebers 855g says that the metu to the heart contain faces and the heart “s’étend.” Ebers 854a: the liquids and breaths of the four metu which meet at the anus create excrement which soaks the metu of the arms and legs of both sides of the body. Breasted (1930) 110-111: the metu in the ES “take up” both disease and remedies.
and enemas, and Ebers 131 appears to confirm this, enjoining the *wekhedu* to be vomited out and ejected in the same way as it came to be.

Many Greek theories also explained diseases as imbalances: excesses or deficiencies in naturally occurring internal substances. The most obvious and widespread example is the complex of related ideas covered by the modern term ‘humoural theory’, but mechanistic explanations such as those of Erasistratos also conceived of the body in terms of appropriate and inappropriate amounts, positions, and movements of various substances such as blood and pneuma.56

However Greek theories, especially in the Hellenistic and Roman periods, involve more internal organs, more unseen processes, and are generally more complicated and anatomically detailed, even if the said anatomy was sometimes largely imagined. The pulse exemplifies the use by experts in both cultures of a physical change or state as a sign which can be used to name a defined condition, but the Greek use of symptoms as signs of a hidden underlying state would seem to be more elaborate.57 In the later Hellenistic and Roman periods philosophers and doctors use sign theory in connection with epistemological theory.58

Parallels can also be found between Egyptian and Greek physicians in their methodological approaches. Both traditions strongly emphasised control through knowledge. The ES and the Hippocratic *Epidemiae* reveal particularly clearly that in both societies a large part of the physician’s role consists of identifying the complaint, predicting its characteristics and outcome, and only then and only sometimes

56 See chapter three.
57 For the Egyptians see especially Ebers 854a and 855e. The pulse was not used as an indicator of disease in Greek medicine until Praxagoras of Kos (fl. ca. 300). In the Hellenistic period Herophilos and his successors were particularly noted for their emphasis on the pulse as a diagnostic tool. See Lloyd (1978) 31; von Staden (1989) 267.
58 Sextus Empiricus uses medical analogies during his discussion of signs at *PH* 2.102, 106 and especially 142. Galen *De causis contentivis* 2 (CMG Supplementum Orientale 2, 55) attributes a distinction between preliminary and antecedent causes to the Stoic influenced medical theorist Athenaeos in the first century CE.
attempting to influence the course of events themselves. Thus the standard phraseology of the Egyptian text is to say:

“If you examine a man having (brief description of problem) [...].”

The next stage is:

“You should say concerning him (name of problem) [...].”

Followed by:

“An ailment which I shall treat.”

Or:

“An ailment which I shall not treat.”

Or:

“An ailment with which I shall contend.”

Likewise the Hippocratic procedure concentrates on diagnosis and prognosis, and advises against treating the untreatable.

There was thus considerable common meta-conceptual ground in the two cultures’ notions of healing, and a limited degree of similarity in their understandings of health and disease. Nonetheless this notional and partial correspondence should not be taken to imply more than a similarity between a few meta-features of medicine in two roughly contemporary ancient cultures. Though the ingredients and procedures of treatment often appear similar, this is largely a consequence of the limited medical resources of the ancient world, rather than of any direct influence. It disguises more basic divergences in the concepts and explanations of diseases and medicine.

The greater complexity of Greek theory and methodology is largely due to the premium that Greek intellectual culture put on innovation, and the consequences of this in professional medicine.

The fifth and fourth centuries saw the emergence of a self-proclaimed new form of professional medicine, represented by the Hippocratic Corpus and sometimes now known by the term ‘rational’ medicine. These texts did not form a unified

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59 Among the extant medical papyri, this option is peculiar to the ES.

60 See e.g. De arte 3 (6.4-6 Litré).
approach but on the contrary consisted of discordant and rival individual voices. Criticism and constant debate drove continual refinement of existing theories and encouraged the expression of the different and the startling. It was not just a competition for success in the healing or prediction of illness, but also an intellectual competition of ideas in the arenas of epistemology, methodology, theories of the body and of disease, all of which were influenced to some degree by contemporary theorists on ‘nature’ (φύσις). These preoccupations also helped to differentiate the medical τέχνη, both in personnel and methods, from other kinds of healing such as folk and temple medicine.

Certain physicians specifically rejected supernatural explanations of disease and, correspondingly, attempts to cure or prevent illness by divine supplication or magical means.⁶¹ This may have been an extreme position; it was certainly an elite one. It did not necessarily mean that such doctors entirely rejected divinity as a cause, rather that divinity ceased to do much explanatory work other than in a few highly philosophical contexts.⁶²

In Egypt, conversely, a dual explanation of illness sometimes appears to be at work. For example an illness might be ascribed either to putrefied matter from rotting food or to demons.⁶³ Fevers and epidemics were interpreted, being caused by the goddess Sakhmet.⁶⁴ Several incantations against this aspect of the lion-headed goddess are preserved on the verso of the ES, one being entitled: “Another for exorcising the plague-bearing wind, the demons of disease, the malignant spirits, messengers of

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⁶¹ Notably the author of De morbo sacro (6.352-397 Littré).
⁶² The divinity of the cosmos was commonly reinterpreted as being realised in rationally ordered nature. Thus to describe and predict nature was in itself theology.
⁶³ For ‘demons’ causing obstructions and illness see e.g. Ebers 201; 209; 854e and ES 8 gloss D, where “something entering from outside” means either the breath of a god or death: Breasted (1930) 208, c.f. Ebers 855y. There are a total of 8 remedies in the medical papyri to drive out the ejections (aaa) of a god, goddess, or dead person: Nunn (1996) 103-4. “Demon” is a common modern translation for this kind of invading malign entity.
⁶⁴ 18.11-12, c.f. the malignant swellings due to the god Khons at Ebers 873, 874, 877. Except for the last two spells, the ES verso is in the same scribal hand as the recto.
Sakhmet.” Curses and spells performed by other mortals also worked through
demons and contaminating entities: a kind of magical poisoning.

Even if the ‘naturalistic’ explanation of the causes of some diseases is a
rationalisation – and if so it occurs in some surprisingly early papyri – it was not
necessarily one in competition or conflict with the ‘supernatural’, a concept that in
Egypt was indistinguishable from the ‘natural.’ To describe an event in one way does
not necessarily exclude describing it in another. The unseen usually includes a certain
physicality - disease demons travel through the physical metu and cause disease
through the production or affection of physical matter. The supernatural is pervasive
as an explanation in Egyptian medicine, but more subtly than the simple ascription of
every event to a god or demon. The modern interpretation of wekhedu suggests that
the origin of the theory lies in the fact that putrefaction after death begins in the
bowels and spreads from there.65 This may be part of the reason why the dead are also
named as supernatural causes of disease, as in the spell at Ebers 131, and at 99 and
385.

The argument is that the differences between the attitudes of Egyptian and (some)
Greek healers to anatomical investigation, physiological speculation, and surgical
practice are due to different assumptions about the causes of non-traumatic, that is,
non-obvious conditions. In Egypt the multiplicity of explanatory levels and
acceptance of dual existence on the visible and invisible planes, especially the
ascription of disease to supernatural entities, reduces the need for any detailed kind of
causal explanation couched in more physiological terms. The swnw, accustomed to
assigning non-traumatic illness to entities susceptible to magical control and familiar
with the principal organs of the body through mummification, had little reason to
investigate internal arrangements and processes in more detail. They already knew

65 Nunn (1996) 62 and Ritner (2000) 115 claim this is paralleled by the ‘περισσώματα’ theory of the
‘Knid in medical school’, but before the Hellenistic period no such medical ‘schools’ of established
and internally consistent thought existed.
what was wrong and where, and with those facts they knew how to cure it. Complicated naturalistic explanations were at best unnecessary.

Conversely, the rejection by the Ἰατροὶ of magical explanations and treatments resulted in an epistemological and therapeutic gap, which required filling by theory. The means by which both theory and therapy are achieved - anatomical knowledge and physiological observation and speculation - reinforce the claims of rational medicine to advance through investigation and reasoning.

Both these approaches are linked to the professional status and role of their respective practitioners. Bound up with the interchangeability of Egyptian accounts is the fact that Egyptian medical authority was not located in exclusive kinds of medicine, only in different degrees of expertise in several complementary approaches: magic, drugs, trauma surgery. The differences between healers were overwhelmingly due to variations in their training and consequent expertise, their social status and their personal skill and preferences, rather than to theoretical and methodological differences. The emphasis of the healer’s approach might vary from case to case, yet the spectrum of causes open to the healer was one in which to emphasise one option was not to reject another.

In Egyptian thought even the most dangerous gods are to some extent controllable through priestly ritual and intercession, personal piety, and the exertion of heka, a word often translated as ‘magic.’ Heka was present in varying amounts in everybody. As one text puts it: “It was in order to be a weapon to ward off the blow of events that he (god) made magic for them (humanity).”

Ritual expertise was the technique which utilised this power, and non-oral magic was therefore a prerogative of various elites, in particular the priests, throughout Egyptian history. Only they were allowed to compose and use the

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66 Lichtheim I (1973) 103.
complex magical texts in a society in which only about one percent of the population is estimated to have been literate.\textsuperscript{67}

Aside from the much more widespread but lower status oral traditions of folk magic, the ritual experts who specialised wholly or partly in medicine were the priests of Sakhmet, priests of Heka, \textit{swnw}, priests of Serket, amulet men (\textit{sau}), and occasionally lector priests.\textsuperscript{68} Many of these titles seem interchangeable and several could be held simultaneously by the same individual. In particular there are known cases of priests of Sakhmet, priests of Heka, and lector priests doubling as \textit{swnw}, and the magical-medical papyri often state that they are for the use of “any \textit{swnw} or any Sakhmet priest.” Ebers 854a says: “If any \textit{swnw}, any \textit{wab} (pure) priest of Sakhmet or any \textit{sa} places his hands[...]”\textsuperscript{69}

The ideal medical practitioner has authority to speak in the name of the god. Thus the text of the Ebers claims to have been found under the two feet of Anubis in Letopolis in the time of the First Dynasty.\textsuperscript{70} In treatment, invocations calling upon beneficent deities are common, as at Ebers 385. In some cases the participants in the process take on divine roles in a replay of a healing myth, with the patient as the infant and endangered Horos, and the practitioner as a divine healer: Isis, Thoth or the adult Horos, as in Ebers 2 and 499. The efficacy of certain remedies was advertised by the attribution of their invention to a god: those of Ebers 242-247 are described as having

\textsuperscript{67} Ritner (1995) 52. Extant medical texts in demotic rather than in hieroglyphics, such as the London and Leiden papyrus and \textit{P. Vienna 6257} (see n. 183, also p. 115 n. 171) are late and show Greek influence. For the Egyptian emphasis on literacy as a means of both secular and supernatural power see Kemp (2001) 127.

\textsuperscript{68} The priests of Sakhmet were the specialist healers of the Egyptian priestly hierarchy. The priests of Heka were priests of the personified force itself, and as such were probably experts in ritual magic. For the priests of Serket see the \textit{Brooklyn Medical Papyrus} 39.

\textsuperscript{69} Bardinet has \textit{sa} in the text, meaning “amulet”, while most translators use the related \textit{sau}, meaning “amulet man”: Ritner (1995) 49, 51, 53.

\textsuperscript{70} Ebers 856a2, a version of Berlin 163a. Also see Ebers 1, in which the papyrus puts itself under the aegis of the gods of the great temple at Heliopolis and the “mother of the gods” at Sais, and associates itself with Thoth’s medical knowledge.
been prepared by the gods Re, Khu, Nut, Geb and Isis either for themselves or for each other.

Such incantations and spells are common in most of the papyri. A substantial remedy in the form of a drug or application usually accompanied them. As Ebers 3 puts it: "Strong is magic in combination with medicine and vice versa." The standard term for recipe, pekhret, did not discriminate between magical and medical prescriptions, nor did it distinguish the beneficial from the harmful. Similarly its Greek equivalent, φάρμακον, could mean drug, incantation, or poison.

To sum up, physicians in pharaonic Egypt were experts in ritual magic at least as much as they were trauma surgeons or pharmaceutical specialists. They are distinguished from other healers only, at most, in specialising solely in medicine and in being experts at its non-magical aspects, and in not being specifically associated with any particular god or gods. Status and acknowledged expertise are derived from a high degree of medical-magical knowledge, preserved in written form in the temples. Medical authority, like other forms of power, is associated with the state and the religious infrastructure of the society, the traditional sources of access to and power over the forces of entropy.

The allegedly unchanging patterns of Egyptian life were even in the ancient world something of a cultural stereotype. An extreme example of this theme is to be found in Diodoros 1.82.3, which asserts that pharaonic swnw administered treatment in accordance with a written law composed in times past by many ancient physicians. The only earlier reference to this is Aristotle Politica 1286a13.

The picture both Aristotle and Diodoros present of draconically proscribed behaviour cannot be the whole story, as it fails to account for the adoption of new foreign drugs by Egyptians of the pharaonic period. Nonetheless there is some

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71 Though not in the ES, where case 9 is the only example of a magical remedy outside the verso.
72 Notably opium, introduced in the early 18th Dynasty (ca. 1575-1367), and adopted as a medical ingredient in the medical papyri: Crawford 1973.
evidence that Diodoros’ claim, though exaggerated, is not entirely without foundation. Egyptian medicine’s long-standing integration into established institutions, as well as its codification in writing – in Egyptian thought a kind of instantiation of eternal power and therefore not a matter for conceptual revision – entailed considerable inertia in medical practice.

One example of physicians relying for authority on the written word is provided by the incident, depicted on a tomb, of the dramatic collapse in the 15th century of the grand vizier Washtah. In response the pharaoh Neferkara summoned lector priests and physicians and had them consult books of medicine and magic.73 Again, P. Ber. 163 declares that its author is a doctor and a scribe.74 The Chester Beatty medical papyri were in the possession of the scribe Qen-her-khepeshef and his wife’s descendents, none of whom were swnv.75 There is no evidence to suggest that Egyptian medicine in the Ptolemaic period changed its traditional and proven concepts and practices to any noticeable extent, at least when treating Egyptians.76 Indeed a ritualistic approach to healing necessarily works against variation and change, as it is important in magic to use the same, correct words and gestures each time. This shortage – not absence - of variation and change, and thereby of debate and investigation, helped to maintain the unified and unitary shape of Egyptian healing.

In Greece, as noted above, a few physicians rejected the utility of supernatural explanations and cures at any level below that of the cosmic order. The majority of physicians, however, recognized the power of Asklepios, the patron god and mythological founder of the τέχνη of medicine, without viewing this as excluding or being superior to their own methods.77 But in Greece the roles of doctor and priest

73 Breasted (1906) I no. 246. Reliance upon the authority of written texts is again evident in the description of the doctor Hery-shef-nakht (see n. 94) as “reading the papyrus rolls daily […].” See n. 97.
74 This is a fuller version of Ebers 856a, see n. 70.
76 See chapters two and three.
77 See chapter two.
usually remained separate. The gods might bring aid on appeal, but medicine could
be practised without their direct intervention through the expertise of the doctor, an
expertise in divinely created and perfectly rational nature. Rather than being in direct
competition with magical experts, the doctor stole a march by re-defining medicine as
a non-magical expertise and many physicians claimed that illness could only be
reliably investigated by their methods. The practitioners of folk medicine – root-
cutters, wise women, 'magicians', and ordinary individuals – were not only inexpert
but also wholly mistaken in their methods and their assumptions about the nature and
treatment of illness. (This claim was apparently not conclusively undermined by the
fact that no two professional physicians could agree on these either). There were
certain continua, particularly of practice, between and within these various kinds of
healing. Yet the similarities were almost entirely drowned out behind the thunder of
the efforts of physicians to define medicine in their own terms and assert their
superior status, both as a group and as individuals.

Needing to remain distinct both from the lesser expertise of folk medicine and
the differently sourced authority of the temples, the Latropés had to derive authority
from other loci than those of the power of the gods or a high success rate in cures.
These other claims to authority included:

1) the ability to predict the future course of a disease.
2) literacy.
3) theoretical and anatomical speculation – attributes linked to high social status
through literacy and philosophy.
4) increasingly complicated drugs and regimen.
5) surgery.
Literacy was more of a necessity in medicine than in many other professions, and this would certainly have distinguished doctors from many of their patients. Learning implied a superiority over folk medicine, a position summed up in the Hippocratic aphorism "life is short, the art long." Degrees of expertise tended to be matched by an increasing complexity in practice and an increasing sophistication in theory and language. This had, then as now, the effect of distinguishing professional medicine from less specialist lay efforts, if only because it required a degree of training and the acquisition of relatively arcane knowledge.

Surgery was a speciality of Greek physicians. If it was to be performed with any hope of success, it required extensive training and experience, especially for the more complex procedures necessitated by internal illness, or in such delicate problems as cataract removal. It was also unparalleled as a performance art.

To sum up, from the fifth century onwards secular professional medicine in Greece justified itself in terms of its explicit differences both from amateur medicine and the minor professionals who were tainted by low education and magic, and from rival professionals in the shapes of priests, who represented a different area of competence. This has the effect of rendering 'rational' explanations, or rather the explanations and attitudes of 'rational' doctors, exclusive and sharply differentiated from other forms of medicine both within and outside Greece. This is true to varying extents for theory, for practice, and for the assumptions and conceptions of the world and of medicine that lie behind theory and practice.

It is thus at the level of professional healing, in particular that of secular experts, that Egyptian and Greek medicine are explicit alternatives to each other. The

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78 Complicated and extensive information is most accurately maintained and transmitted through writing. Of course this is not to say that all medical practitioners were literate. Some itinerants may not have been and certainly many folk healers were not. Nonetheless literacy in Greek was quite high in the Hellenistic χαμα, thanks in part to the literacy drive and tax breaks for teachers. The Zenon papyri in particular reveal a very widespread literacy among all kinds of τεχνους.

79 Aphorism 1.1.1 (4.460 Littre).

80 Official competitions in surgery took place in the Roman period, and its use as a spectacle is often evident in Galen. See the references collected by Lloyd (1991) 165.
self-proclaimedly ‘rational’ approach of Greek secular medicine in the classical and Hellenistic periods was an assertion which covered a multitude of approaches, assumptions, theories and treatments, and which in practice often overlapped with the armouries of folk medicine. Nonetheless it implied a certain cultural specificity, especially in the wider context of an immigrant society inserted into a country and culture which contained no parallel to the exclusive tradition of the ἱατρός.

1.3: The doctor and the administration

The distinctiveness of Greek secular professional medicine was recognized and reinforced by the Ptolemies, who employed it as a marker of Greek culture. Medicine found itself with a role to play in the assertion of Hellenic identity and culture besides and over the culture and society of the Egyptian majority, an identity defined and privileged by the Ptolemies though the discriminating and discriminatory media of the administrative and fiscal systems. This is part of a wider pattern of Ptolemaic support for Greek society and culture through the manipulation of taxes and privileges.

The most general example is the exemption from the obol tax of the early Ptolemaic period, granted to all those accepted as ‘Hellenes’. Some such ‘tax-Hellenes’ were in fact ethnically Egyptian.\textsuperscript{81} The tax in question was only one obol per annum, and the advantage of exemption therefore more symbolic than actual.\textsuperscript{82} Yet it signalled that the governing administration valued Greek culture over either Egyptian culture or actual ethnic identity.

A similar purpose seems to lie behind the early exemptions from the salt tax, a universal tax on all adults first recorded in 263. Philadelphos granted full immunity from it to teachers, athletic coaches, artists of Dionysos, and victors at Alexandrian

\textsuperscript{81} Or Jewish, or several other ethnicities: Thompson (1997) 247-8.
\textsuperscript{82} Tax-Hellenic status included other privileges such as exemption from the corvée. The obol-tax was later subsumed within the salt-tax.
games. Later exemptions included the police, several categories of priests, and physicians. The evidence for physicians is a demotic tax assessment for four villages in the Polemon meris, which lists the resident teachers, swnw, sew-redet of the ibis, and priestesses of Demeter as categories exempt from the salt tax.

Some of these categories, like doctors and priests, are important to the infrastructure of the χώρα and of relatively high status. Some, like athletic coaches and actors, seem distinctively and exclusively Greek, while teachers encouraged the spread of literacy and the Greek language. I suggest that the role of the latter groups was to encourage the diffusion of Hellenism into the remoter, and potentially more nationalistic, regions of Egypt by acting as both representations and support services of Hellenic culture. This may have helped to attract further Greek settlers. Such rural emigration was advantageous to the Greek administration. The 'cleruchs,' the Makedonian and Greek infantry and cavalry soldiers allotted κληρον of land, acted as a reserve Greek force throughout Egypt. Moreover Greek settlers tended to be more receptive than the Egyptian farmers to the innovative agricultural techniques and crops being encouraged by the Ptolemies in their pursuit of increased production in the Fayum and the Delta.

Thus the tax-exemptions, in their support of certain distinctively Greek occupations, served to an unquantifiable extent both to render Hellenism as a whole an advantageous identity, and also to strengthen the Greek culture away from the cities by privileging those occupations exclusively identified with it. They also slightly increased the advantages involved in policing, teaching and medicine among both Greeks and Egyptians, attempting to ensure that necessary personnel existed in sufficient numbers.

83 P. Hal. 1 (third century) II, 260-265. This is not a complete list of exempt occupations, nor were they exempted at the same time: see Thompson (1997) 258. Police also benefited in some way: P. Petrie 3.93 (238-7).
84 PC08 (245-210).
In view of this aspect of Ptolemaic administration I shall argue that the aim of the ιατρικὸν or medical tax was specifically to privilege Greek medicine as a part of Greek settler culture.

The ιατρικὸν appears in a small number of Egyptian papyri during a relatively short period, ca. 310 to around 175. A papyrus from Halikarnassos in Karia, part of the Ptolemaic empire, may also be relevant. References to a medical tax then disappear entirely from the extant evidence. It was a tax on a certain group or groups of Greeks, the revenue from which was usually but not invariably paid to a bank into the account of the ιατρικὸν. In turn, money was distributed from this account to some or all ιατροὶ.

The nearest parallel outside Ptolemaic Egypt to the ιατρικὸν is the ‘public physician’ (δημόσιος ιατρός) of the Greek city-states in the classical and Hellenistic periods. A city would appoint one or more physicians to this position, often after requesting the presence of a particular reputable doctor, or a doctor from a centre of medical expertise such as Kos, and would pay them a certain salary. It seems not unlikely that the role of the Ptolemaic ιατρικὸν was developed from this institution. But there is also the possibility that the Ptolemies had instead adapted, or were influenced by, a pharaonic practice. The evidence is Diodoros Sikulos 1.82.3:

Κατὰ δὲ τὰς στρατείας καὶ τὰς ἐπὶ τῆς χώρας ἐκδημίας θεραπεύονται πάντες οὐδένα μισθὸν ὕδα διδόντες: οἱ γὰρ ιατροὶ τὰς μὲν τροφὰς ἐκ τοῦ κοινοῦ λαμβάνουσι, τὰς δὲ θεραπείας προσάγουσι κατὰ νόμον ἐγγραφοῖν, ὑπὸ πολλῶν καὶ δεδοξασμένων ιατρῶν ἀρχαίων συγγεγραμμένον.

86 Papyri collected by Nanetti (1944) together with PSI 4.371 (250), P. Hamb. 2.171 (246).
87 PCZ 1.59036 (257), see pp. 42-3.
88 In P. Hib. 1.102 (2487) the tax-payer pays the physician directly. Préaux (1939) 133 argues that this and a similar practice for another tax are due to the difficulties in transporting large amounts of grain to official treasuries.
On their military campaigns and their journeys in the country they all receive treatment without the payment of any private fee.\(^9\) For the physicians draw their support from public funds and administer their treatments in accordance with a written law which was composed in ancient times by many famous physicians.

There were certainly pharaonic precedents for some elements of the Ptolemaic administration, notably the cleruchs, the land survey and the offices of the διοικητής and the βασιλικὸς γραμματεύς. The question of whether that is also the case here depends on the credibility of Diodoros' source and the degree of accuracy with which Diodoros has reported or summarised it. Furthermore, even if the original ἱατρικὸν was a pharaonic or Persian procedure, its usefulness for analysing the Hellenistic ἱατρικὸν would depend on the degree to which the Ptolemies adapted it to suit their own requirements.

Diodoros' source for this passage as for much of the rest of Book I was almost certainly Hecataeos of Abdera, who wrote an ethnographic history of Egypt in the early third century.\(^9\) This was closely modelled on and derived much of its content from Herodotos' survey of Egypt. But Hecataeos also claimed to have used information gathered from temple records (ἐκ τῶν ἀναγραφῶν) and his own eyewitness experience.\(^9\) His account of the Ramesseon is impressively accurate, but elsewhere he is less reliable in a work that aimed to demonstrate the antiquity of

\(^9\) Amundsen and Ferngren (1972) 338 think the passage refers to the Ptolemaic period, but in a section on Egyptian customs it is surely more likely to be pharaonic. Thompson (private communication) points out that the reference might be to the more recent Persian rule. Whether Persian or pharaonic, the crucial point is that earlier monarchic precedents in Egypt may have influenced the Ptolemies. I argue below that such a precedent can be identified from pharaonic times, which the Persians may well have continued.

\(^9\) In spite of attempts to dethrone Hecataeos from his position as Diodoros' main source for book I (e.g. Burton 1972), the arguments as to why parts of book I should be dated to a later period than the third century are not persuasive (Murray 1975; Hornblower 1981). See also Fraser (1972) I 495ff. 1.47-50, which Diodoros explicitly cites as being by Hecataeos, is similar to the remainder of the Egyptian section, and from the rest of the Bibliotheca it can be seen that Diodoros' usual method was to employ one source for considerable stretches at a time without greatly altering their content or outlook. Thus except for a few interpolations of Diodoros' own and some geography from Agatharkhides of Knidos, Hecataeos remains the only serious candidate for most of book I.

\(^9\) Diodoros Sikulon 1.46.7-8.
Egyptian history and its superiority over Greek culture. There was also plenty of opportunity for error in the process of translating and reinterpretting Egyptian sources for a Greek audience.

Some such errors can plausibly be laid at the feet of Hecataeos’ priestly informants. For instance, at 1.70-2 Diodoros describes the rigidly prescribed life of Egyptian kings. It has been argued that this is due to a memory or records of the rituals of the Meroe theocracy and the legendary piety of the Nubian kings being mistakenly substituted for the considerably less circumscribed situation of the Saite rulers or the Nectanebos. Thus, in the few cases where Hecataeos’ or Diodoros’ Egyptian νόμοι do not simply project Greek utopianism onto the Egyptian past, they may reflect actual events or customs in a garbled and misplaced fashion, quite possibly illegitimately extending a localised or temporary phenomenon into a universal one.

Diodoros’ passage on the payment of Egyptian physicians is immediately followed by his claim that they were forbidden by law to depart from previous treatments. It was earlier argued that, although exaggerated, this claim was not without foundation (pp. 23-4). This indirectly supports the belief that Diodoros does preserve some recollection of an actual custom in his passage on medicine, including his description of physicians’ “ἐκδημίαις,” but almost certainly one that is garbled and out of context.

Even if Diodoros is describing pharaonic practice correctly, this does not necessarily mean that the similarity to the ἱατρικάν system is more than coincidental. No Egyptian word for ἱατρικάν is known before the emergence of Coptic. After all, if the ἱατρικάν was borrowed from a pharaonic system it should affect Egyptians

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92 The former was a common trope in Greek thought. See Herodotos 2.143; Plato Timaeus 22eff.
93 Africa (1963). Another such case would be the confusion between the original builders of the pyramids and their renovators at Diodoros 1.63-4.
94 Murray 1975: few of Diodoros’ reports of Egyptian νόμοι can be substantiated by pharaonic evidence.
instead of being an exclusively Greek arrangement, and one for higher-status Greeks at that.

A clue to the original meaning of 1.82.3 may be found in that vague phrase, “τᾶς ἔπλ. τῆς χώρας ἐκδημιᾶς” and its association with “τὰς στρατευμα.” Both imply that there was initially some specificity to the circumstances in which pharaonic physicians could expect to receive some form of state payment. I suggest that these circumstances were state-organized and state-supported expeditions to the remoter and more desolate and dangerous parts of Egypt in search of precious metals and other necessary but difficult to obtain materials. There is evidence from the pharaonic period that such expeditions existed and that they included physicians. Swmv buried at the alabaster quarries of Hatnub in Sinai, Wadi Hammamat had been sent there on special assignments. Sethos I employed one thousand men on a stone quarrying mission to the south of the country. A Middle Kingdom stela from a quarry at Serabit el Khadim mentions a wr swmv named Renefseneb among a hundred other names. Physicians subsidised by the state were also included on army expeditions.

Furthermore there is evidence elsewhere of a pharaonic precedent, if not for the ίατρικῶν, at least for the state providing healers with a minimum salary for a specific purpose. At Deir el-Medina during the Old Kingdom there existed for several centuries a village comprised entirely of the state workers and ancillary staff for the pyramids, and their families. The village had a ‘physician’, actually a worker who doubled as a part-time healer, with a small extra income and time off in lieu. The extra salary was minimal, but the local physician is also recorded as receiving very high amounts from his patients in private income.

97 There were two doctors named in the inscriptions in the alabaster quarries at Hatnub: Hery-shef-nakht, chief of physicians, priest of Sakhmet, overseer of magicians; and Aha-nakht, priest of Sakhmet: Jonckheere (1958) no. 62. For the Sethos I expedition see Breasted (1906) III nos. 205-8. For Renefseneb: Gardiner, Peet, Cerny (1952) no. 85. Quirke (1990) 84, 86 notes that “the expedition forces sent to procure valuable stone were not differentiated from the ‘regular’ army [....the army’s] military role did not obstruct other uses where unskilled manpower was required.”
Something similar, I suggest, is behind Diodoros’ text: physicians as ancillary workers on various state projects, civil and military, were paid a small sum, probably often in kind, by the administration. This was financed in the pharaonic and/or the Persian period by general taxation rather than by an hypothecated \textit{iatroph}. The absence of private fees for such state-sponsored healers was later probably simply assumed by Hecataeos and/or Diodoros, while in fact nothing prevented the physician from charging fees in addition to the basic ration provided by the state.

I believe therefore that the \textit{iatroph}, while most probably a Ptolemaic innovation loosely based upon the practice of public physicians elsewhere in the Greek world, was stimulated and its enactment made easier by the existence of a pharaonic precedent for the payment of physicians by the administration. The effect of pharaonic practice on the Ptolemies in general is perhaps visible in the retention of the principle of state provision as an extra inducement to certain activities and locations, and in the assumption of close monarchic control over economy and society.

Elements of pharaonic practice may also have survived in the medical administration, a possibility I shall return to below. However I shall also argue that the pharaonic and Ptolemaic approaches differed in many ways as to the objective, target, and manner of the payment or allowance.

This brings us to the question of the intended purpose of the \textit{iatroph}. If Diodoros’ report, taken as accurate and as referring to a single custom, is applied to the Ptolemaic system, it implies that at least some people were treated for free in the Egyptian \textit{chora}, with doctors being compensated by state revenue derived from the \textit{iatroph}. This would support Hirt in arguing that the \textit{iatroph} was a tax paid by the privileged classes for the purpose of securing free treatment for themselves.

\begin{itemize}
  \item The use of the word \textit{ekdêmiac} may also imply an official and important journey: see Diodoros’ other uses of it at 1.97.9, where it describes Zeus and Hera’s mythological journey to Ethiopia, and \textit{swnekokhim} at 37.5.1, 4 for a Roman governor’s aides.
  \item Also see Préaux (1939) 132, 401: several taxes go back to the pharaonic period, perhaps including the \textit{iatroph}.
\end{itemize}
But Hirt’s proposal seems *a priori* unlikely. Free treatment for any group is unparalleled in the Greek world and has no known precursors in Egyptian custom. Nor does there seem to be any reason why the Ptolemites should have wanted to invent such a system of indirect payment to doctors – in effect a form of medical insurance. In any case, I shall argue that such an arrangement would not have been economically viable. This can be demonstrated by an investigation into who paid the tax, the total to which it amounted, and how much each doctor was allocated.\(^\text{102}\)

The ἱατρικῶν, to judge from the few examples we have, was usually 2 artabae of wheat, roughly equivalent in most years to 5 artabae of olyra or 4 drachmae.\(^\text{103}\) In the extant papyri the payer is always a cleruch or a member of the serving military, except for the case of *P. Tebt. 3.1.746* (243) where it is either cavalry settlers or the state.\(^\text{104}\)

Figures are available for the cavalry cleruchs and serving cavalry (μεσοθοφόροι ἱππεῖς) of the Arsinoite nome in the mid third century.\(^\text{105}\) There were about 3472 adult male cavalry cleruchs and 1426 men serving in the cavalry, a total of 4898.\(^\text{106}\) From these and the known civilian population of the nome Thompson and Clarysse (forthcoming) estimate the total population of the nome, including women and children, at ca. 85,000 to 90,000, multiplying the adult males by 2.909. This figure includes 2000-7000 people who were either unreported or members of the missing military categories: the 30, 25 and 20 arouae cleruchs and the cavalry veterans

\(^{102}\) Egypt was divided into 40 ‘nomes’ or administrative districts, besides the three Greek cities. The Arsinoite nome was subdivided into three merides, which in turn consisted of tax areas, probably called toparchies. These were broken down still further into tax-districts of a number of villages and hamlets, with about 2000 adults in each tax-district. See Thompson and Clarysse (forthcoming).

\(^{103}\) An artab is a dry measure of rather variable capacity.

\(^{104}\) Cleruchs: *P. Tebt. 3.2.1036* (second century); 1037 (second century). Serving military: *P. Hib 1.102* (248/247); 103 (231/230); 165 (232/231).

\(^{105}\) An artab is a dry measure of rather variable capacity.

\(^{106}\) In what follows ‘PC’ numbers, e.g. PC02, are sometimes given instead of the usual papyri references. These are the internal numbers used for Thompson and Clarysse’s readings of the papyri in their work on Ptolemaic Egypt (forthcoming). See the list of cited papyri.

\(^{108}\) PC01 (254-231). The identification of cavalry cleruchs is probable but not certain.
(πρεσβύτεροι ἱππεῖς). About 687-2406 of these would have been adult males who paid the ἱατρικῶν.

The totals were arrived at by adding the numbers recorded for each of the three merides that made up the Arsinoite nome. The Themistos meris contained 348 adult males in the serving cavalry, 24.4% of the nome total for this category. There were also about 965 adult male cavalry cleruchs, or 27.8%. Assuming that the ratio of the Themistos meris to the whole nome for the unrecorded military categories is also around 26%, this suggests that there were in the order of 179-626 unrecorded military settlers and serving military in the Themistos meris. Together with the ca. 1300 listed, the numbers of military settlers and soldiers totalled – very approximately – about 1500-1900.

Some commentators argue that all non-cleruchic tax-Hellenes also paid the ἱατρικῶν. A possible objection to this is that most Greek doctors would have been members of the tax-Hellenic class, and that they would then have been both paying and receiving the tax.

If tax-Hellenes did pay the ἱατρικῶν, the revenues would have amounted in certain areas to a considerable sum. There were 1830 adult civilian Greeks in five out of the nine tax districts of the Themistos meris within the Arsinoite nome in a tax record of the year 229. 900 of these were men. If they had each paid a sum equivalent to 4 drachmae for the ἱατρικῶν tax, the total revenue for the year for these five tax-districts would have been about 3600 drachmae. This was in addition to that certainly paid by the cleruchs and by the military currently in active service, neither of whom appear in the civilian records.

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107 The identification of the Themistos meris for the 965 cavalry cleruchs is probable but not completely secure. The papyrus here gives the total of men and women: I have halved this figure.
108 Hirt (1996) 108, Kudlien (1979) 17-40, while Wilcken accepts it as one possibility (1899) I 375-77; the latter two cited by Hirt (1996) 104-6. Préaux (1939) 132-3 and 410 also argues for this. It is not clear whether the cleruchs comprised the upper end of the tax-Hellenic bracket or whether they were a separate administrative class. The calculations here assume the latter.
109 PC02 (229) col. xx. Including the men of Elephantine and Philae, who are counted as Hellenes for taxation purposes in spite of all known individuals having Egyptian names.
If the numbers of cleruchs and active military for the Themistos meris in 229 are at all similar to those estimated above for the mid third century, and on the undoubtedly invalid assumption that the military settlers were equally distributed throughout the meris, there were about 833-1056 male cleruchs and serving military for five unspecified districts of the meris.\textsuperscript{111} This would have resulted in a revenue of somewhere in the region of 3332-4224 drachmae, or 6932-7824 if tax-Hellenes also paid.

The total of 1830 civilian ‘Greeks’ includes 11 male ‘Greek’ doctors belonging to three of the five districts. If the estimated total revenue was divided up evenly among these 11 doctors it would represent a yearly salary of either 303-384 or 630-711 drachmae \textit{per annum}.

Unfortunately, we have no record of the actual sum received by any one doctor. \textit{P. Hamb. 2.171 (246)} documents such a transaction, but the figure in question cannot be securely deciphered. It is a receipt from Demetrios the doctor for a sum received from the banker Nikanor, of a bank in Oxyrhynkhos, drawn from the account of the \textit{iatrophó̂n (iatrikó̂n lágonus) τοὶς κατὰ τόπουν [iatrión ἵππος τὸ δ λόγον λόγον, (year 39?)}." The sum may be η (8) or π (80) drachmae, but is not definitely either, and it may not have been intended for one doctor alone. The phrase κατὰ τόπουν is quite clear, and one interpretation would be that the sum is being handed out from the account of the \textit{iatrikó̂n} to Demetrios for him to distribute between all doctors, or all recognized doctors, of the area, presumably as part of the year’s total payment.\textsuperscript{111} Other Ptolemaic officials were similarly paid a monthly salary through a royal bank.\textsuperscript{112}

The only known example of a public physician’s salary in a Hellenistic city-state, Seleukia in Pamphylia, reveals that in the second century one Asklepiades of Perge was paid around 1000 drachmae per year. This compares favourably with even

\textsuperscript{111} The Themistos meris seems to have consisted of two tax-areas, of four districts and one of five. The latter provides the figures for the following discussion.

\textsuperscript{112} I am indebted to Dr. Thompson for help in reading this papyrus.

\textsuperscript{112} Préaux (1939) 45.
the largest possible Ptolemaic salary of ca. 700 drachmae, paid for by tax-Hellenes as well as the military settlers.\(^{113}\)

So the amounts potentially received by doctors from the revenues of the \(\lambda\alpha\tau\rho\iota\kappa\omicron\omicron\) were not negligible. On the other hand they do not seem likely to have been sufficient to provide a competitive salary for doctors required to grant free medical treatment to a sizeable proportion of the better off members of the local community. If tax-Hellenes paid the tax, any additional income could have come only from charging the poorest – who, as both poor and also mainly Egyptian, would have been the very people least likely to seek aid from Greek professionals in the first place. In such a situation the donation of additional unofficial gifts by their wealthier clients would become necessary. In effect private fees would supervene on the official system, rendering it pointless.

Yet another objection is that there is no evidence for any such system of taxation for free treatment in the three Greek \(\pi\omicron\lambda\omega\iota\upsilon\varsigma\) of Naukratis, Ptolemais, and Alexandria. Yet on Hirt’s analysis there also seems no reason why the practice should be limited to the \(\chi\omicron\omicron\alpha\.\)

Again, people who might have qualified as tax-Hellenes, and thereby, for Hirt, as recipients of free medical treatment, were members of the village scribe Menkhes’ family in second century Kerkeosiris, who used Greek names in certain contexts. But Menkhes was certainly not treated for free: his accounts for 6 Mecheir to 6 Phamenoth 112 include personal expenses among which are several payments to a doctor, probably, to judge from the context, a Greek one.\(^{114}\)

I am for all these reasons convinced that free treatment was not the purpose or end result of the institution of the \(\lambda\alpha\tau\rho\iota\kappa\omicron\omicron\). There seems no reason to propose such an innovation in Greek social practice and policy, especially when an adequate alternative explanation is available (see below). Nor does it seem necessary to

\(^{113}\) *Mon. Ant.* 23 (1914) no. 48, see Cohn-Haft (1956) 38 and n. 28. The average annual salary for \(\tau\varepsilon\chi\iota\pi\alpha\tau\alpha\) was 500-700 drachmae.

\(^{114}\) *P. Tebt.* 1.112 (112) iv. 73, v. 123.
conclude that tax-Hellenes paid the ιατρικόν, in the absence of any actual evidence that they did so.

The function of the ιατρικόν, then, still requires explanation. In the following section I shall attempt to demonstrate that the situation in the Egyptian χώρα was in relevant respects similar to that which had created the need for public physicians in the wider Hellenistic world.

Cohn-Haft’s monograph concluded that the practice was aimed at ensuring the presence in the Greek city-state of at least one recommended, known, and respected practitioner of Greek medicine.115 This was often a necessity in view of the scarcity of Greek doctors and their consequent, commonplace, and traditional itinerancy.

Nor were they numerous in the Egyptian χώρα. A detailed third century list of tax-payers, perhaps for the villages of Lysimakhis and Trikomia in the Arsinoite nome, mentions only one doctor.116 Indeed physicians of both ethnicities seem to have been concentrated in the cities. A third century household register, probably from the nome capital Krokodilopolis, lists three doctors with Egyptian names.117

This register is limited to privileged occupations. The privilege in question is probably the exemption from the salt tax mentioned above, pp. 27-8. The fact that it included doctors with Egyptian names suggests that the exemption applied to both ethnicities, but one piece of evidence indicates otherwise. On the Greek verso of the bilingual salt-tax record for five districts of the Themistos meris in 229, cited above, are figures for the population of one of those districts, district B, subdivided by status and occupation.118 Eight ιατροὶ Αιγύπτιοι, five of them male, are listed here in two of the district’s seven villages. These do not appear to belong to a privileged category, unlike the Greek doctors (swnw Wynn) listed on the demotic recto.

116 CPR 13.29, fr. A. 8 (third century): Πεμπτακάκες; ιατροί; γράφεται; πώς; Αιγύπτιοι; γράφεται; πώς;".
117 PC04 53, 91, 130 (254-231), c.f. PC14 (ca. 180) xiv.24: 6 ιατρεῖς (sic) include one Greek name.
118 PC03 (229), the Greek verso of PC02 (299).
Thompson and Clarysse (forthcoming) suggest that these ethnically Egyptian doctors count for tax purposes as Greek doctors. Together with one ethnically Greek physician and his household of seven women, they are to be identified with the group of six male doctors and ten women listed as Greek doctors in district B.\(^{119}\)

In this case six doctors are responsible for a total population of around 3000 people in district B, counting the women and children and the Greek military categories, resulting in about 500 patients per doctor. However it is likely that Egyptian patients were primarily treated by Egyptian physicians and Greek patients by Greek physicians, given the differences between the two approaches and the likelihood of language difficulties – particularly in transactions between Greek practitioners and Egyptian patients. In district B this would leave one Greek physician, assuming that the other five are the ιατροὶ Ἀγγλοτοι counted for tax purposes as Greek physicians, responsible for around 800-900 civilian and military Greek residents. A rough comparison can be gained from the five tax-districts covered by the bilingual salt-tax register. In these there were 11 ‘Greek doctors’, or at most 6 ethnically Hellenic physicians and five Egyptian doctors, for a total Greek population of 5000-5700, or about 900 patients per non-Egyptian physician. Greek doctors in the χώρα are thus present in viable but not concentrated numbers, even inside the Fayum, and it is clear why an allowance from a medical tax was deemed necessary to encourage them into these regions.

But it should be noted that those identified as physicians in official records would not have comprised the total number of healers among either Greeks or Egyptians. There will have been in addition a large number of occasional healers employing the knowledge and techniques of folk medicine and magic, not to mention appeals to religious authority (see 1.4 and chapter two). Approaches to healing

\(^{119}\) An alternative is that the physicians with Egyptian names listed in privileged occupations are in fact practising a Hellenic style of medicine and count as Greek ιατροὶ, while Egyptian doctors are in fact not exempted from the tax. Although Egyptian and Greek teachers are both exempted, it is possible that the Egyptians are teaching Greek.
among these categories will often have been less ethnically distinctive than among those physicians trained in different medical traditions.

There are two complementary explanations as to why the ἱατρικόν was appropriate to this situation.

Firstly, as described above, there was the precedent of pharaonic and probably Persian rule supporting medicine as an ancillary service to military and other public expeditions, on which healers would receive small additional sums. Secondly, the institution of the public physician in Greek states provided a model for the maintenance of Hellenic culture in small or isolated communities. I wish to suggest that both of these played a role.

The ἱατρικόν’s purpose is revealed by the identity of those who can securely be said to have paid it: the cleruchs and the serving military in the Egyptian χώρα. These two groups were vital to the stability of Ptolemaic rule, as they extended Greek control outside the centres of Ptolemaic power in the cities to the countryside. However they were minority groups in the χώρα, not only in terms of numbers but also in their cultural isolation. The purpose of the ἱατρικόν was to ensure the presence of professional Greek physicians in the χώρα. Other things being equal, even a low state salary left the doctor supported by the ἱατρικόν better off than those healers who did not so benefit. Whether they were there as state employees or were just attracted by the monetary bonus and lack of competition, they represented an exclusively Greek cultural resource. Some Egyptians might have adopted Greek approaches to healing, along with other aspects of the culture of the ruling hierarchy such as language, names, baths and gymnasia, when that identity proved useful. Those who were ethnically Greek, meanwhile, found their cultural environment to some extent replicated around them, a tendency that will have encouraged settlement and penetration into the χώρα. The tax thus worked in the same manner and for much the same aims as the other incentives built into the tax-and-privilege system for Greek
teachers, athletes, artists of Dionysos, police, fullers, and other occupations which were culturally distinctive, or administratively or economically useful.

To conclude, then, the salary or tax exemption distributed to doctors from the \( \text{λατρικόν} \) account acted as a bonus on top of private fees to attract and keep a sufficient supply of Greek physicians in the \( \chiώρα \), especially in the remoter areas.\(^{120}\) Its cultural role was thus derived from that of the public physicians; its political and economic role from the pharaonic exertion of social control.

The apparent disappearance of the \( \text{λατρικόν} \) in the second century may be a simple loss of the relevant texts. The argument from silence is the only evidence for its abolition. Furthermore the medical tax attested in Delphi, Teos and Kos also disappears from view at around the same time.\(^{121}\) It would be surprising if the same cause operated both within and beyond Egypt.

If the \( \text{λατρικόν} \) was abolished this might reflect the increasing identification of the second and later generations of Greek settlers with their new country. By then the need to assert the minority culture had been replaced by new and to some extent ethnically integrated norms. The artificial maintenance of occupations by now relatively well established in certain areas would no longer have appeared necessary. The numbers of doctors may also have increased, as Hirt (1996) 109 suggests. Professions and families often go together in rural areas, and after a few generations such \emph{de facto} hereditary lines will have been established in the \( \chiώρα \) and quite possibly expanding. Thus the disappearance, if actual, of the \( \text{λατρικόν} \) at this time would fit, not contradict, the argument I have been putting forward. Medical

\(^{120}\) Hirt (1996) 107 argues against a similar interpretation on the grounds that “les Grecs ne sont ici (in Egypt) qu’une poignée d’envahisseurs.” I assume that “les grecs” refers to cleruchs and tax-Hellenes outside the three Greek cities. I am unsure of the exact drift of her argument, since the \( \text{λατρικόν} \)-payers were on her own analysis sufficient to fund almost the entire practice of doctors in the \( \chiώρα \), whereas on mine the tax served to provide only an additional bonus.

\(^{121}\) References in Hirt (1996) 104 n. 193. The reference to a medical tax in Kos is doubtful.
provision for the serving military could have been retained, being paid for out of
general taxation.

I turn now to consider the other ways in which the administration was involved with
the Greek physicians and other healers of the χώρα.

One piece of evidence shows that the revenues from the ἱατρικόν formed part
of the resources of the state and in need could be used for purposes which had nothing
to do with medicine. PCZ 59036 (257) records proceedings at Halikarnassos in
Karia, a city in Asia Minor under Ptolemaic rule. Apollodotos, a royal agent in
Halikarnassos, advances some 5465 drachmae to the commander of a ship in the
Ptolemaic navy. This sum was drawn from three sources, including 2000 drachmae
from the ἱατρικόν. It was disbursed by Straton, the treasurer in Halikarnassos, on the
orders of Apollodotos, to Perigenes, who was to pass the money on to the ship’s
commander. All three accounts were to be repaid by the ship’s trierarch Xanthippos,
the 2000 drachmae through the agency of one Medeios - possibly situated in
Alexandria – on behalf of the ἱατρικόν.

The ἱατρικόν here would appear to belong to the Ptolemaic government rather than the
city, and this suggests that it was either obtained through taxation and remitted to
Alexandria, or held by the royal treasurer in Halikarnassos for the payment of doctors
there, perhaps army and navy doctors.122 There was almost certainly a garrison
stationed in the city.123 In the Greek world physicians seem to have been recruited on
a fairly ad hoc basis by local armies and garrisons, rather than as specialist members
of the army itself. In Halikarnassos, payments funded by the ἱατρικόν may have been
paid to physicians to ensure their presence in the town for the benefit of either or both
civil and military Greek residents. As usual such state payments would have

122 Bagnall (1976) 95, opposing Préaux (1939) 421, who prefers to see it as a city tax.
supervened on private fees but not on any regular military payment.\textsuperscript{124} This option therefore further supports the hypothesis that the \textit{λατρικόν} was intended to provide or at least encourage the maintenance of Greek medicine for a population, here the army.

Of course, the situation in Halikarnassos and the other cities of the Ptolemaic empire may be different from that within Egypt itself. However there are parallel examples from Ptolemaic Egypt of unexpected or urgent expenses being met from funds not specifically gathered for that purpose, though none of these involve the \textit{λατρικόν}.\textsuperscript{125} It seems very probable that the considerable revenues derived from the medical tax were held physically at the local administrative capital, often for considerable lengths of time, providing a useful emergency fund. In the absence of such emergencies, and after the sum had been repaid as it was in the Halikarnassos case, the money would eventually have been redistributed to the \textit{λατροί}.

The category of physicians who received payments or tax allowances from the account of the \textit{λατρικόν} is unlikely to have included part time or folk healers; it may also have excluded any notoriously incompetent or unlucky doctors, and perhaps itinerant ones. This limitation on the \textit{λατρικόν} would render doctors more liable to stay put once they were known and established in a certain area. It might also be the case that if the \textit{λατρικόν} was only given to those doctors recognized as such by their local community and officials, then it served as a mark of a certain limited status which separated the doctor from the cheaper folk healer or itinerant unknown. The very fact of being deemed worthy to receive the \textit{λατρικόν} may thus have slightly increased the value of the doctor in the eyes of his prospective clientele - in real terms adding to his patients and perhaps even increasing his fees. This is, however, speculative.

\begin{flushright}
\textsuperscript{124} For physicians and Greek armies see Salazar (2000) 68-74, c.f. Griffith (1935). Note the contract between a Cypriot king and city with the physician Onasilos to treat their war wounded for free in return for either cash or land: Masson (1961) no. 217 (before 470).
\textsuperscript{125} Dr. Thompson drew my attention to the following: \textit{P. Petrie} 2.13 (1) (255): unforeseen work in cleaning out sand from a new canal set against the local salt-tax.
\end{flushright}
It is in fact unclear whether physicians paid from the account of the ἱατρικόν should be seen primarily as employees of the state or whether the bonus was simply a matter of being present in a certain area where they were known to the local community. Given that there is no evidence to suggest that most doctors were moved around the country as state employees, as those healers employed by the pharaohs had been, the second hypothesis seems far preferable. Only those physicians identifiable and identified as professional doctors by their local community or communities – that is, by their current and prospective patients – would have been paid from the account of the ἱατρικόν.

I am not suggesting that doctors in Egypt had to pass any examination or obtain any official qualification in order to practice. The recognition accorded the public physicians of the Greek city-states through their salary and occasional appearance in inscriptions is not dependent on any formal qualification, but rather on the public acknowledgement by the community of a fact of general knowledge. This type of recognition is the norm in face-to-face societies, where status and trust depend on personal reputation and the simple fact that people in a small community are known to each other.

The Ptolemaic ἱατροί were not sought, requested or appointed by the government. Their expertise would have been less than that of the public physicians in Greek πόλεις outside Egypt, who owed their appointments to their reputation or the reputation of their training. The Greek physicians of the χώρα, on the other hand, were those who had for whatever reason avoided the risk of practising in the competitive city environment in favour of a guaranteed minimum income in the χώρα. The extent and numbers of the Ptolemaic system lowered both the status and material rewards involved. Payment of the ἱατρικόν did therefore not involve the adulatory adjectives or the presentation of gold crowns and large sums of money prevalent in the city-state inscriptions which provide the evidence for public physicians in the rest of the Hellenistic world.
The papyrus in which one doctor apparently receives a sum to distribute among other doctors κατὰ τὸποὺ indicates a degree of organisation among Greek physicians themselves. Such physician-representatives, local banks, and ordinary tax officials would have been sufficient in most cases for the needs of local administration.

There were also higher officials whose titles indicate a concern with medicine. Here vestiges of the pharaonic medical bureaucracy were apparently retained, albeit adapted to a different situation. This bureaucracy had been extensive, involving a finely graded and, at least in title, highly specialised hierarchy. In some cases such positions seem to have been primarily honorary, involving nominal responsibilities. This tendency survived the demise of the native dynasties. Under the Persian rule of both Kambyses and Darios I the Egyptian wr swnw Udjahorresne held high office, though not usually of a specifically medical kind. The royal court administration also worked with the swnw and priests of the temples, who had their own, often overlapping, administrative hierarchy.

The structure of the Ptolemaic medical administration is extremely unclear, due not only to the lack of evidence but also to the difficulty of deducing from passing references to medical titles the nature and extent of the positions thus held, or even whether such positions are honorary or actual. There are three titles to consider: the ἐπὶ τῶν ἁτρῶν, the ἄρχιατρός and the βασιλικός ἁτρός.

The first of these is known only from an inscription set up at Delos, probably after ca. 150, by the Athenian Arios. It honours on its base one Khrysterms: ἐξηγητής, ἐπὶ τῶν ἁτρῶν, καὶ ἐπιστάτῃ τοῦ Μουσείου.

This is the first attestation for the exegetes, a late Ptolemaic civic office which became important in the Roman era. Strabo’s description of it emphasises its ceremonial wear and hereditary tenure, suggesting that in the Ptolemaic period it was

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126 See p. 36.
127 For the translated text see Lefebvre (1956) 19.
128 OGIS 104 (the date is uncertain, but probably after ca. 150).
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128 OGIS 104 (the date is uncertain, but probably after ca. 150).
a religious office. The status and functions of both Khrysermos’ other two titles are unclear. If similar to that of exegetes, they probably refer rather to honorary or at best ceremonial positions, associated with Greeks of high social status rather than with administrative activity. The title itself may be a translation of one of the pharaonic positions associated with medicine, such as the overseer of swnw. The holder of the title ἐπὶ τῶν ἱατρῶν may thus be nominally in charge of other administrators connected with medicine.

One of these is glimpsed from a letter of the first century, in which ὁ ἄρχιατρός Athenagoras writes to attendants of the statues of the gods (stolistae) and their priests in the temple of Amenemhet III at Hawara in the Fayum. He requests them to deliver the body of his assistant Herakleides, who had happened to die in their district and was lying in the cemetery there (“ἐν ταῖς παρ’ ἡμεῖν νεκραῖς”), to two of his other employees for transport to Ptolemais.

Our earliest evidence as to the meaning of the title of ἄρχιατρός comes from the Seleukid court in the third century, where it refers to a ruler’s personal physician. This usage continued up to the time of Nero. From around CE 50 it could also refer to some kind of civic physician or ἄρχιατρός of the city, when it probably began to take over this meaning from the earlier usage of δημόσιος λατρός (public physician). However in Egypt this process was considerably slower. Δημόσιος λατρός are first attested in CE 173, and are not replaced by ἄρχιατρός until the fourth century CE.

Working from this evidence, Nutton suggests that in Egypt ἄρχιατρός meant court physician until ca. CE 170. Hirt, following Kudlien, disagrees with Nutton’s analysis of the terminology of ἄρχιατρός in the Hellenistic and earlier Roman periods. Both Hirt and Kudlien regard it as an honorific title that served to

129 17.12.6-9.
130 Other persons of this family are influential and in high status positions. There is no evidence to suggest that Khrysermos was himself a doctor.
131 SB 1.5216 (first century).
132 For the preceding paragraph see Nutton (1977) V.
distinguish doctors of high social position. Hirt further suggests that it perhaps was also used to single out very able doctors, the term in this case possibly deriving from Aristotle’s “iatrōs[...] ἀρχιτεκτονικός.”\footnote{Politica 1282a4; Hirt (1996) 96.}

Those arguing that the term ἀρχιατρός directly signifies social status oppose Nutton’s analysis chiefly on the grounds that the Ptolemies’ own personal physicians are never called by this term, even though the doctors of other Hellenistic monarchs are. If true, this certainly casts some doubt on Nutton’s identification of the Ptolemaic ἀρχιατρός as a court physician, but it may be an illusion of the source material. For instance, the evidence for ἀρχιατρός meaning court physician in the third century Seleukid empire is an inscription so identifying the court physician Apollonios, but Polybios refers to the same person simply as ἰατρός.\footnote{Polybios 5.56.1.} The fact that Polybios refers to the Ptolemaic Andreas only as “ἰατρὸν τοῦ βασιλέως” may therefore be equally misleading.\footnote{5.81.6.2.}

In any case, the replacement proposal seems somewhat inadequate, or at least inadequately defined. Hirt’s argument only works if it is taken to suggest that ἀρχιατρός was a term used to single out those widely believed to be very able doctors. Hirt does not say how great an elevation is required to be acknowledged, even by oneself, as an ἀρχιατρός. Presumably it is considerable, as otherwise we must postulate a plethora of ἀρχιατροί. The term implies a position held by very few people at a time, possibly even only one. Artemidoros, the personal physician of that very high-ranking official, the dioketes Apollonios, would surely fulfil Hirt and Kudlien’s social requirements, and yet he is never styled ἀρχιατρός in any of his numerous appearances in the Zenon papyri.

Of course, a ἀρχιατρός could have been a person of some status by virtue of being a relatively high ranking administrator. Thus a third alternative is that Athenagoras is
some sort of official with junior officials as his assistants. Indeed, it has been suggested that ἀρχιατρός is itself a translation of wr swnw (chief physician).\textsuperscript{137}

The available direct evidence is not very helpful. An extant example of pharaonic wisdom literature implies that a wr swnw had to be officially designated so by pharaoh, had to be knowledgeable, was associated with a “house of physicians” included within the palace bureaucracy, and was liable to be involved in court intrigue.\textsuperscript{138} This fits the role of a court physician quite well, but does not rule out the possibility of an administrative role for the ἀρχιατρός.\textsuperscript{139}

Support for the notion that ὃ ἀρχιατρός was an administrative title comes from the fact that another bureaucratic position concerned with medicine existed, the βασιλικὸς ἱατρὸς. We have only one example: Tatas, from the time of Euergetes II.\textsuperscript{140} His exact status, typicality, and duties are unknown, but in his brief appearance upon the historical scene he is referred to as the sender of a report to the strategos concerning the residential limitations imposed upon the ταρχευταῖ (embalmers) of Thebes. He refers in the course of this report to a royal order on the subject.

Although we have only Tatas by way of direct evidence, the exact title of his job suggests a parallel with the βασιλικὸς γραμματεῖς. The comparison is slightly strengthened by Tatas’ Egyptian name, since many of the known βασιλικοὶ γραμματεῖς are also Egyptian. This is unusual in the Greek bureaucracy, although the number of Egyptian government officials increased between the third and second centuries.\textsuperscript{141} If the parallel holds, there would have been forty such medical officials, one for each administrative ‘nome.’ For this model the obvious suggestion is that the Ptolemaic ἀρχιατρός was a high-ranking official, probably over the various

\textsuperscript{137} Nutton (1977) V 194-5.
\textsuperscript{138} Edited by Ryholt (2000) 113-140.
\textsuperscript{139} Ghalioungui (1983) 35, 41 argues that the title wr swnw might have been simply an honorific appellation.
\textsuperscript{140} P. Tor Choachiti 12 (117) 26.
\textsuperscript{141} Oates (1992); for examples of such Egyptian officials see PP vols. 1 (1950) and 2 (1952).
but the evidence is simply insufficient for any such structure to be more than possible.

Βασιλικός γραμματεύς is the Greek translation of the demotic “scribe of the pharaoh.” Tata’s designation, similarly, might be the same as the royal or the palace physician visible in the documents of pre-Greek Egypt. But the preservation of the title does not of course mean that the role itself had not altered.

As for the duties of the Ptolemaic βασιλικός ιατρός, the most obvious aspect of medicine in Egypt requiring administration is the collection and payment of the ιατρικόν, but most of this work was the province of the official banks and the usual tax officials.\(^{142}\) A βασιλικός ιατρός is never mentioned in the papyri connected with the ιατρικόν, although the mechanics of the system are admittedly obscure. The personnel and procedure vary considerably. *P. Hib.* 1.165 (232/231) and 1.103 (231/230), receipts for payment of the ιατρικόν in two successive years from the same man, involve not only the payer Diodoros and the komogrammateus Eupolis, but also Stratios, who acts in both papyri on behalf of Diodoros, and the officials Apollonides, in both, Theophilos, in no. 103, and Eupolemos, in no. 165. The duplication of information and expenditure of overall effort and organization must have been considerable if not particularly efficient, revealing the tendency of Ptolemaic bureaucracy to over-determination and multiple notification of information between lines of communication which remained personal rather than prescribed. A supervisory role over the ιατρικόν for the βασιλικός ιατρός appears more plausible when seen in the context of this administrative effort and multiple responsibility. It must on the other hand be emphasised that there is no direct evidence for this and that wherever we find an official concerned with the ιατρικόν it is a general administrative and/or financial post known to deal with other things as well. Nor does there seem to have been enough for a strictly medical administrator to do even if

\(^{142}\) One option that can be ruled out is anything to do with the medical death certificate, as this was not in existence until the early first century CE. Amundsen and Ferngren (1978).
he did supervise ἱατρικῶν arrangements, let alone if he did not, and particularly on the theory that there were another thirty-nine besides Tatas, one per nome.

Therefore a likelier explanation is that the βασιλικὸς ἱατρὸς was an official whose title was a hangover from the pharaonic era but whose functions were fairly general and ad hoc. He was someone in the information chain, who copied and communicated the orders of the court downwards and the problems of other officials upwards. If Tatas is typical, the Egyptian identity and bilingual ability of the the βασιλικὸς ἱατρὸς meant he was well-suited to a position between the local villages, towns, temples, and the Greek-dominated upper levels of the administrative hierarchy. The specificity of his title, on this hypothesis, would serve to pin down his identity and status in the administration, but would bear little relation to the pharaonic position it was derived from.

There remains one other option for the function of the βασιλικὸς ἱατρὸς. It is the best supported alternative to the extent that it accounts for the absence of the βασιλικὸς ἱατρὸς from papyri relevant to the ἱατρικῶν, for Tatas’ Egyptian identity, and, especially, for the context of Tatas’ appearance in P. Tor. Choachiti 12 ii. 25.

As noted above, this document refers to Tatas as the sender of a report to the strategos concerning the residential limitations imposed upon the embalmers of Thebes. All the alternatives outlined above assume that this activity was extraordinary, or at best unrepresentative, of Tatas’ usual function. Without this unsupported assumption the obvious interpretation is that Tatas was involved in state regulation of embalmers.

If so, it is virtually certain that the position of βασιλικὸς ἱατρὸς was equivalent to, or at least based on, an official of the pharaonic or Persian period. This is implied not only by the Egyptian name of its holder in the text but also by the title itself. If the Ptolemies had created such a post for the supervision of embalming, it would surely not have employed medical terminology. Rather, the term appears to be
a direct translation of an Egyptian title that used the word *swnw*, meaning either doctor or embalmer (see p. 9).

Evidence for a pharaonic precedent is tenuous, though this is an improvement on the total silence surrounding all other interpretations. There are three probabilistic arguments based on comparisons with other elements of the Egyptian administration.

Firstly, in both the temples and the palaces, pharaonic officials were organised into complex hierarchies. For the medical hierarchy, the following positions are known to have existed in at least some periods. There is one example of the “controller of doctors” (*kherep swnw*) from the Old Kingdom. The New Kingdom supplies most of the “overseers of doctors” (*her swnw*). Fourteen “inspectors of doctors” (*sehedj swnw*) belong to the Old Kingdom. The most common administrative medical title is “chief doctor” (*wr swnw*), whose fifty-two exemplars come from every period of Egyptian history. Those physicians linked to the pharaoh and the court had a similar set of administrative ranks. These included an “inspector of the palace doctors”, and an “administrator of doctors of the palace”, as well as numerous titles which appear to refer to the personal physicians of the pharaoh and his wife.143

Sometimes these titles are specified as belonging to a particular area or place. One from the New Kingdom, for instance, was the “*wr swnw in the necropolis*,” pointing up the fact that there was not a sharp divide between the ‘civil’ administration and the individual temples. The king was after all a god, and the chief interpreter between mortals and divinities. As Pernigotti points out, “the fact that the king delegated the right to perform cult acts to priests meant that they were not very different from other state officials, other than in the field in which they operated.”

The existence of titles such as the “overseer of all the gods of Upper Egypt” and “overseer of all the high priests of Upper and Lower Egypt”, provide a slight hint that Egypt possessed some degree of religious administrative centralisation.144 In Egypt each temple, rather than each god, was an autonomous entity, united only by the

143 Nunn (1994) 116-118.
144 Pernigotti (1997) 141-142.
person and role of the god-king, pharaoh himself. It was therefore the prerogative of the pharaoh, and by extension the palace, to supervise and where necessary direct the activities of the temples and associated industries, just as the palace directly controlled those parts of society which were not the responsibility of the temples.

The first argument, then, is that state control of important industries and professions through an administrative hierarchy was the norm in pharaonic Egypt.

The second argument relies on the fact that embalming was a large and complex industry. The priest-officials and workers of the necropolis, while dependent on the involvement and ritual expertise of certain temple personnel such as the lector priest, nevertheless formed a specialised group, distinct from the religious and administrative personnel of the temple proper.

Family groups of embalmers held exclusive rights over particular areas of the towns and villages of the nome, or family groups from these. Embalmers’ agreements include a technical term meaning “to proceed to” or “to have free access to” the stipendiary villages in order to collect the bodies of the deceased. 145 It seems reasonable that officials were required to keep track of these arrangements, perhaps at a nome or national level. Another contract of this type also mentions funerary taxes, which would certainly have required links with the royal administration.146

By the Late Period, the numbers of mummies and the size of the industry were increasing. The large numbers of Greeks who adopted embalming in preference to cremation during the Ptolemaic period resulted in a new, relatively well off market for embalmers by at least the early second century.147

Some Greco-Roman mummies show evidence of having been transported from one place to another, perhaps over considerable distances. Scuff marks are visible, but more important are the so-called ‘mummy labels’. These are wooden

145 BM 10528 (292): a body of embalmers from the Theban necropolis whose duty was to collect bodies in a reserved area. C.f. BM 10561 (157): see Shore and Smith (1960).
146 P. Ash. D 18 (Philopator), see Reymond (1976).
147 Riad (1996) 36.
dockets attached to the mummy, on which are written the names of the deceased in Greek or demotic. Athenagoras’ letter, cited above, announcing his intention of collecting his assistant’s body from the Hawara cemetery, is perhaps one example of such transportation.  

Thus the second argument notes the size and complexity of the embalming industry, and the consequent need for organization and supervision.

Thirdly, it is possible that there were unique dangers and disturbances involved in mummification, which were perhaps felt to necessitate supervision beyond the temple organization by the pharaonic, Persian, or Ptolemaic administration, or by all three.

In Egyptian society the dead were associated with the generation of disease through putrefaction, see above p. 20. Nor would the association of corpses, decomposing ones at least, with illness have been remarkable to Greeks or Persians. Such a correlation, whatever the means by which it was thought to occur, necessitated precautions against pollution. Embalmers lived and worked away from normal human habitation, often on the desert edge. Bodies were purified by washing them inside a temporary structure like a tent (ibw), near a source of water. Then the body spent 70 days in the pure place (wabt nat) or beautiful house (per nefer), being eviscerated, dried in natron, stuffed and bandaged. Finally it was buried in the necropolis tombs.

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149 The existence of a domestic cult of embalmed relatives is controversial, but any such tradition would have entailed yet more transportation and organisation. See Ikram and Dodson (1998) 51; Borg (1997), Montserrat (1997).
150 Herodotion adds to his account of mummification the claim that the bodies of women of rank were not given to the embalmers until they had begun to decompose, in order to reduce the temptation to necrophilia. It has been suggested that the mummy of Ahmose-Nefertiry provides limited support for this thesis as her corpse smelt unpleasant, perhaps due to a delayed embalming: Ikram and Dodson (1998) 104. Many bodies mummified in the Hellenistic period were in an advanced state of decomposition before the process was begun: David (2000) 374.
151 In Greek medicine unburnt corpses had been suggested as a source of the “seeds of disease” believed by some theorists to be present in the air: Galen De differentiis fæbr ium 1.6 (7.289-90 Kühn).
Rostovtzeff suggested that the βασιλικὸς ἱατρὸς' function was “to supervise from a sanitary point of view the functions of the priests in connection with burials.” This is anachronistic, but there may nevertheless be something in the concept that the masters of protection against decay – i.e. the swmω and the embalmers, for the living and the dead respectively - were two closely related professions, specialising in different aspects of essentially the same expertise. In this context a supervisory role over the embalmers of the necropolis might easily become the province of one of the palace physician-officials: in translation, a βασιλικὸς ἱατρὸς.

1.4: From folk medicine to Theopompos

There were, of course, two other forms of healing in Greece that did not ringfence their concepts to the same extent as did ‘rational’ medicine, and which were therefore far less exclusive to one culture. Temple medicine, which will be discussed in chapter two, and folk medicine.

Greek folk medicine retained a mix of practices and beliefs that in professional Greek medicine were separated into the natural and the supernatural. Demons are cited as causes of disease in seventh century literature and fifth century drama. Remedies could be drunk, tied on as amulets, and spoken or written as incantations. Socrates was given a Thrakian charm against headache consisting of an amulet together with an incantation.

In general, Greek incantations and written amulets employed two methods: the prayer formula for invoking help from the gods; and the use of ἐπιώδαι, probably

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152 Rostovtzeff (1941) II 1092-3.
153 Hesiod Opera 100; Sophocles Aias 581-2; Aristophanes Vespas 103.
154 Odyssey 19.457-9 appears to be an incantatory cure spoken out loud.
155 Charmides 155e-156e.
accompanied by ritual gestures, which acted sympathetically on disease. These two procedures are exactly analogous to those used by Egyptian magical-medical experts to expel disease. Ritual as a means of controlling powerful forces and substances was employed by Greek root-cutters and is paralleled by the ritual practices of plant-collectors and hunters of animal ingredients in Egypt. Greek prophylactic and curative amulets differed only in their specifics from practices in Egypt, a country in which the ubiquity of medical and other amulets suggests that they were considered a necessity of life even by the poorest. After the Roman acquisition of Egypt Greek and Egyptian elements fused to create the Greek magical papyri. This development suggests that over the course of Ptolemaic rule Greeks had increasingly adopted, co-opted and adapted Egyptian ‘magic’ in accordance with their own assumptions. This process was probably quickened by the Roman conquest and the arrival of more immigrants equipped with stereotypical assumptions about the magi of the East.

Yet the difference between ‘rational’ and Greek folk medicine was often a matter of bark rather than bite. Classical and Hellenistic Ἀργῷ continued to employ many apparently proven materials and techniques from the folk medicine from which their self-proclaimed ‘rational’ medicine had partially emerged. The principle of συμφύσις, which played a large role in both Egyptian and Greek ‘magical’ remedies, was reinterpreted and justified by many physicians and philosophers, on empirical or ‘rational’ grounds. For example faeces are commonly used in Egyptian remedies, perhaps because disease entities were believed to be expelled and rendered harmless by being transformed into excrement. Galen asserted that many kinds of excrement have a most powerful expulsive force and had been proved useful by himself and others.

157 Galen De simplicium medicamentorum temperamentis ac facultatibus 6 proemium (11.789-798 Kühn).
158 See ES verso incantation 6. 55 recipes in the Ebers use urine or faeces.
159 De simplicium medicamentorum temperamentis ac facultatibus 10.2.18 (12.290-1 Kühn).
Even certain undisguisedly magical practices were allowed if empirical evidence for their success could be demonstrated. Galen, for example, admitted one amulet to medical therapy on the grounds that he had personally witnessed evidence of its effectiveness. Thus the Greek 'rational' doctor, while he may from time to time assume notions and employ practices which opponents or modern commentators might call magical, justifies these solely in terms of empirical evidence or natural philosophy. He will not admit other causal factors into the explanation. It is the justifications that have changed, rather than the substances.

Greek physicians also, of course, differed from other healers and among themselves in their level of expertise as well as in its kind.

There was a subtle and variable gradation in Greek medical experience that makes it impossible to clearly define different medical categories. Nonetheless it is possible to broadly delimit certain groups, however borderline the status of some individuals. A degree of continuity and similarity of approach was maintained by the usual practice of apprenticing would-be doctors to those whose position was already established. One such contract of apprenticeship survives in P. Heid. 3.226 (215/213). There are some minor doubts regarding its authenticity, but, as has been pointed out, even a fake proves that such copies existed. The contract charges the apparently token fee of two drachmae for an apprenticeship of six years.

The apprentice would learn primarily through experience and some teaching, and what they would learn would be medicine as their employer practised it. This, in turn, would be medicine as he had learnt it as an apprentice, plus whatever alterations, deletions or additions experience had caused him to make over the intervening years. Medical training in the χάρα was very distant from the competitiveness and consequent inflationary innovation of the major cities with their fickle, spoilt for choice clientele. It was especially far from Alexandria and the concentration of rival medical schools with their fiercely articulated differences. It would therefore
inevitably tend towards a strong conservatism, coupled with an emphasis on therapy over theory.

That such medical conservatism held sway outside intellectual centres throughout Greco-Roman culture can be seen from Aulus Gellius’ anecdote at *Noctes Atticae* 18.10, in which educated Romans in Attica discover the local physician to be ignorant of the distinction between veins and arteries. It is unlikely that even professional doctors attracted away from the intense medical competition of the cities by the stable basic income of the λατρευτής were any kind of up-to-the-minute, theoretically learned elite. They were purveyors of a by now traditionalised and fairly standardised τέχνη. Its theoretical perspectives were limited and its practices, especially in drugs and diets, were derived largely from traditional Greek remedies and would have shaded into many of the continuing oral traditions of the settlers in the χώρα. Conservative and pragmatic, much of these physicians’ practice differed little from that of those who explained medicine in terms of demons and gods.

In the χώρα, Greek physicians would have been figures of respectable income and status within the smaller local towns and surrounding areas. Their literacy would have aided their status, and they were probably in demand as witnesses, references, readers and writers for those who needed to cope with the bureaucracy: in other words they were respected members of small communities. A glimpse of one such individual can be seen in the two appearances of Θεόπομπος Ἀριστίνως Θεσσαλὸς λατρός in the Zenon archive from third century Philadelphia, where he appears twice as a witness in legal agreements concerning land leases.¹⁶²

Once established, professional physicians and to a lesser extent other healers would have played a small but significant role in their local economies, as medicine that is to any extent specialised requires support services and creates a centralization of resources beyond the household. Admittedly demand in the χώρα probably did

¹⁶² P. Col. 3.54 (250) 26; SB 14.11659 (256) 14.
not extend sufficiently beyond locally available materials and produce to stimulate the international drug trade in any noticeable way. Yet some local trade, especially in the towns, must have benefited by the needs of ἱερατεία (clinics) and drug-sellers for a supply of drugs and ingredients greater than those required for a single household.

Instruments, for example, were required from specialist metalworkers. In the ruins of Pompeii two doctors’ houses were found containing, respectively, around 40 and 70 instruments and related items. These were very probably manufactured locally, possibly in a nearby workshop containing a furnace. The huge majority of physicians in the χώρα and its towns would not have attained anything like this degree of medical sophistication and technological complexity. Nonetheless, hardware manufacturers in the towns and blacksmiths in the villages must have found the local physician a useful customer. Other varieties of healer and purveyors of healing substances, two categories that might or might not overlap, like drug-sellers or animal hunters, would have contributed in similar ways to the local economy, though to a lesser extent as their range was often less general and the healer often part-time.

The numbers of such acknowledged Greek physicians cannot be even roughly estimated, except in a few areas as a proportion of the total population (see pp. 38-9). As already discussed, ἱερατεῖαι appear to have been rather few and far between in the remoter and more rural areas of the Egyptian countryside, being concentrated in the cities and in towns. Villages, especially small ones, would have had only occasional access to physicians.

A similar situation obtained for the Egyptian community of a village, as the elite magical-medical healers, few in number, would have been beyond the access and resources of most people. Priests of Sakhmet were localised in temples of Sakhmet,
not a deity widely worshipped in small towns and villages. There are however swmwy of lower status known from the pharaonic period, as those employed on state expeditions range from apparently important officials to undistinguished individuals on low rates of pay.

It is possible, though there is no evidence either way, that Greek doctors from time to time toured villages in their locality which normally lacked a professional medical presence. It is certain that for both ethnicities itinerant healers, ranging from practitioners of folk magic and medicine to self-professed doctors of limited knowledge and success, would have been relatively regular visitors. In between visits self-medication was a necessity. Galen remarks that a peasant bitten by a snake must amputate his own limb unless lucky enough to encounter a passing itinerant healer. Medical ostraka have been found in the χώρα, dating from the pharaonic to the Roman eras. Excerpts of Greek medical literature in the extant papyri range from a theoretical treatise to jottings of recipes. Presumably remedies also circulated by such means in the intervening Ptolemaic period, adding to the traditional oral recipes of folk medicine. These, compounded from homegrown and locally available produce, and probably combining magic and medicine, would have satisfied most needs of most people most of the time.

Some degree of local healing expertise was probably usually available for both ethnicities in the form of local part-time healers and lore-keepers. The pharaonic payment records for the workmen at the necropolis of Deir el-Medina on two occasions record the absence of the same man for the purpose of "preparing

164 Sakhmet was principally worshipped in the great temples of her husband Ptah at Letopolis, Memphis, and Karnak.
165 De symptomatum causis 2.6 (7.197-8 Kühn).
166 Jonckheere (1954); Préaux (1956).
167 Ptolemaic examples are P. Hib. 2.190 (third century), a fragment of a treatise on eye conditions; 2.191 (ca. 260-230) and 2.192 (ca. 270-250), jotted fragments of medical content and prescriptions. See Preaux (1956) 135; Hanson (1985) 29-30. Local medical herbs would have been grown among culinary vegetables and herbs in the small hand-irrigated allotments of the κόμη σὺν περιστάσει: Crawford (1973) 251.
medicines. A demotic herbal has survived from the Roman era, and may be updated from an earlier text. For childbirth Greek communities could have relied upon the experience of local women and probably professional midwives as well. The existence of the latter in Egyptian society remains problematic, but some gynaecological knowledge must have been present at the folk level. A magical text of the first millennium refers to a wise woman or “knowing one” (rekhyet), who is able to explain illnesses and other “manifestations of the gods” such as accidents or divine oracles, probably by sensing which spirit or deity was responsible.

In Greek medicine midwifery was not the only skill and midwives not the only professionals who could legitimately claim to be as knowledgeable as physicians in at least some aspects of medicine. Φαρμακοπώλας (drug-sellers) and ριζοκατεστρώτα (root-cutters) were experts in pharmaceutical remedies and often also in magico-religious approaches. Whether the latter survived as a Greek occupation in Egypt is unclear, but in any case there was probably roughly equivalent Egyptian expertise. Though many plants could be grown among or were food crops, certainly many of the more exotic animal ingredients mentioned in the Egyptian medical papyri would have required the involvement of professional collectors. Perhaps sellers of magical-medical supplies were the source of such exotica as virgin’s urine.

As Nutton puts it, “Galen’s treatise (De optimo medico cognoscendo) reveals the enormous range of expertises that could be classified as medical, and, above all, the extreme fluidity of any line separating a layman from a medicus.” Galen’s sources for drug lore included one Flavius the boxer. This division of medical labour among part-time specialists in certain aspects of healing is likely to have been the norm in Egyptian village society also. Multiple occupations were usual in

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168 BM 5634 II. 21-2.
171 Ingredients such as crocodile dung (Kahun 21); tortoise bile (Ebers 347).
172 Ebers 279; Berlin 60, 64, 109.
174 De compositione medicamentorum fecundum locos 9.5 (13.294 Kühn).
communities in which supplementary incomes were often necessary and the population too small to create the demand required for specialisation in trade. One incomplete village record lists 35 different occupations.\textsuperscript{175}

1.5: Influences and reactions

I described in 1.2 how conceptual parallels could often be drawn between Egyptian and Greek medical modes. There was a considerable overlap between Greek folk medicine and Egyptian medicine in general, one based on largely compatible conceptions of disease and close similarities in practice. This section will investigate how practitioners of both professional and folk medicine reacted to their similarities and differences.

The most important area of common interest was that of drugs, a category which included foodstuffs. The explanations for how they worked often differed yet the assessment of their somewhat mysterious power remained the same: it was an elite Alexandrian anatomist, Herophilos, who described \( \phi\alpha\rho\mu\alpha\kappa \) as “the hands of the gods.”\textsuperscript{176}

Pharmaceuticals were an area pragmatically shared not only by Greek folk and professional medicine but also by both ethnicities at all social levels.\textsuperscript{177} Some exchange of drug lore is probable in response to this sudden access to potentially new and valid remedies, and in the Greek case exposure to some new diseases.\textsuperscript{178} Probably healers in both societies sought to utilise new recipes and in the case of the professional and the semi-professional to extend their market into that of the other

\begin{itemize}
\item \textsuperscript{175} P. Sorb. inv. 331 fr. 2 (ca. 232).
\item \textsuperscript{176} Galen \textit{De compositione medicamentorum secundum locos} 6.8 (12.965-6 Kühn).
\item \textsuperscript{177} A number of drug prescriptions in the Hippocratic Corpus are labeled as Egyptian, e.g. \textit{Epidemiae} 2.6.9 (5.135 Littre). However the use of such exotica implies little more than trade, and pharmaceutical correspondences like the use of excreta may be common to many ancient societies. See Hanson (1985) 27-8 and Lloyd (1983) 201-2. Von Staden (1992) 8 accepts Egyptian influence on the Hippocratic Corpus as a possibility. Transmission was easier in the Ptolemaic period itself, when Herophilean prescriptions contained numerous substances appearing for the first time in known Greek medicine, such as crocodile dung. See von Staden (1989) 17. For other possible influences of Egyptian medicine upon elite Greek physicians see chapter three.
\item \textsuperscript{178} Hanson (1985) 28.
\end{itemize}
culture. Greeks must have needed local knowledge of the available flora and fauna for ingredients, while Egypt’s reputation for pharmaceutical expertise and power in the Greek literary tradition may have encouraged the adoption of certain Egyptian recipes and ingredients. Conversely the language barrier would have worked to facilitate Egyptian exposure to Greek practices, as bilingual Egyptians were commoner than bilingual Greeks.

Although Dioskorides is the first extant Greek source to give a recipe for κυφή, an incense and medicinal salve, he observes that there are many formulas for it in contemporary Egypt (first century CE). Plutarch’s remark that in Egypt sacred writings are read to those preparing κυφή is probably derived from a text on the preparation of κυφή attributed to the Egyptian priest Manetho, or from a similar work. This strongly implies that the existence and basic composition of κυφή goes back to dynastic Egypt, and was subsequently elaborated by Greeks. The same may be true of much other drug lore. However the actual extent to which specifically Egyptian ingredients and recipes penetrated traditional Greek pharmaceutics is impossible to quantify, and may have been limited by the canonical effect of written prescriptions in particular. Greek folk medicine, unwritten and largely unaffected by the theories of ‘rational’ physicians, may have assimilated Egyptian traditions more easily.

Evidence for the influence of Greek medicine on Egyptian drugs is supplied by P. Vienna 6257, a demotic medical papyrus from the second century CE but copied from a Ptolemaic original. It contains 59 drugs, out of a total of 201, of apparently Mediterranean origin and unattested in the pharaonic medical papyri.

179 See chapter two.  
180 Suda s.v. Manetho no. 142.  
182 Préaux (1956) 147-8, who suggests that Greek adoption of Egyptian drugs was much rarer than the converse, pointing as an example to the absence of the common Egyptian ingredient beer in Greek prescriptions.  
There also appear to have been areas of rivalry as well as exchange between Greek and Egyptian medical traditions and practitioners.\(^{164}\) Although the *swnw* no longer enjoyed access to power in the shape of the bureaucracy or the king's person, they may have acquired a new set of clients in the Greek immigrants. After all, Egyptian medicine had long enjoyed enormous prestige in Greek thought and culture. In the χώρα, its practitioners may have been in certain places and at certain times more accessible to the settler than were the ἱατροὶ, and if many Greeks accepted Egyptian folk magical-medical practices it is hard to see why they would have rejected the conceptually similar expertise of the professional. The division of Egyptian medicine into specialist disciplines, though perhaps not as rigid as its titles and Herodotos' report suggest, may have appealed in contrast to the generalist approach of the Greek physician.\(^{185}\) It would also have been reasonable to suppose that a native of the country might be more familiar with its characteristic illnesses than a fellow immigrant.

A letter of the second century reveals the existence in Alexandria of an Egyptian ἱατρόκλωστὴς, whose speciality was purifying the body by means of enemas.\(^{186}\) Written by a Greek woman to a close male family member, probably her son, the letter congratulates him on having learnt Egyptian, since this has gained him a job teaching or interpreting Greek to τὰ παιδάρια of the ἱατρόκλωστὴς. This would imply some contact between *swnw* and Alexandrian Greeks, though in view of the vagueness of the term τὰ παιδάρια, which may refer to patients, apprentices or most probably slaves, it cannot be inferred that these were Greek patients.

There is, then, a very slight hint that the *swnw* could represent competition for Greek doctors rather than being simply an ethnic phenomenon, in spite of the

\(^{164}\) Ps.-Galen *Introductio seu medicus* I (14.675 Kühn) asserts that the Egyptians were the first surgeons. Marganne (1998) 26 argues that the author of this text is an Egyptian and a contemporary of Galen's; for a second century CE date c.f. Hanson (1985) 29.

\(^{185}\) 2.84-5, a claim unsupported by Diodoros Sikulos.

\(^{186}\) *UPZ* 1.148 (second century), possibly c.f. *P. Hib.* 2.268 (ca. 260) 24. The word ἱατρόκλωστὴς is derived from the pharaonic medical specialist "shepherd of the anus," e.g. Gialiougui (1983) no. 6.
Ptolemies’ best efforts to maintain the tradition of Greek medicine for Greeks. Such competition is affected by how similar the two groups are in their practice of medicine. The sharp differences visible in some aspects of this indicate a largely ethnic division between their patients, especially in the early years, with perhaps some competition for Greek patients. Less noticeable differences, such as folk medical practices and drug use, blur the categories, again especially for Greek patients, and especially as language boundaries became more fluid.

1.6: Conclusion

The Greek physician in the Egyptian χώρα, then, retained through his by now fairly traditional knowledge of basic anatomy and surgery a set of therapeutic approaches that diverged from those of the Egyptian healer. They required — though to what extent this was articulated or made explicit we do not know — a different set of assumptions about the nature of disease and, in some cases, of the body.

Yet this seems not to have set up an explicitly oppositional confrontation between Greek and Egyptian medicine. Certainly no traces survive of any attempt to prove Greek superiority to Egyptian medicine by argument. Instead, the Greek ἱατρός and the Egyptian swm would each have represented a different but not exclusive option open to the lay inhabitants of the χώρα. Although some degree of competition for patients existed, this would have been largely an equation whose terms were set by language, ethnicity, access and cost, especially in the early days. It would therefore have required little in the way of methodological or theoretical debate, or even rival claims as to relative therapeutic success.

Moreover both sets of professionals co-existed with folk healing and part-time lay specialists, not to mention temple medicine. Thus the ἱατρός represents in the χώρα not a revolutionary new method of medicine but simply another option, appropriate to certain persons, illnesses and situations but not others.
Their prospective patients, the Greek settlers in the χώρα, employed their services as they did those of the village gymnasium or travelling artists of Dionysos: as a culturally distinct expertise. But they also seem to have established a commonality of approach and cross-cultural therapeutic exchange in folk medicine and magic, and perhaps engaged with the professionals of Egyptian medicine as the situation might seem to demand. The ἱατρὸς in the χώρα is one healer among many.

187 Gymnasia appeared wherever Greeks settled, even in the smallest villages: Lewis (1986) 27.
TWO: GODS AND TEMPLES

2.1: Introduction
This chapter will investigate medicine in the context of the temples and religious practices of both Greeks and Egyptians. The impact of the arrival of the gods of the ruling immigrant minority on the existing temple infrastructure and its practices will be considered, as will the influence of the pre-existing religious culture on the behaviour and expectations of the Greeks. In particular the chapter will focus on the ways in which cultural preconceptions about medicine and gods influenced temple medicine in Ptolemaic Egypt.

2.2: Divine healers in Egypt and Greece

Greece
The primary healing gods of classical and Hellenistic Greeks were Apollo and Asklepios. Apollo’s power is ambiguous. He can cause misfortune in the form of disease, as when he brings plague to the Greek army and death to Niobe’s sons.¹ But as Ἀπόλλων Ἀλεξιακός he also wards off evil of this kind by purifying the body of the pollution of disease.²

By the classical period Apollo the physician was the god of healing and of its practitioners, including the self-declaredly ‘rational’ physicians of the Hippocratic Corpus.³ Nonetheless Apollo does not employ the remedies and procedures of the mortal world, that is drugs, the knife, and incantatory formulae, which were used by physicians and as will be seen below, by his son Asklepios. His medical role seems to have been related to his powers in purification and in oracular prophecy. Aeschylus calls him a λατρόμαντις.⁴ His means are miraculous and dependent on his divine nature, his cures are expressed as the purification of pollution and the averting of

¹ Iliad 1.39 and 24.604ff.
² Carlier (1992) 140.
³ See chapter one.
⁴ Eumenides 62.
divine wrath; his knowledge of how to cause or cure disease is but a small part of his knowledge of the whole order of things, of what has been and what is to be. He is not a healer in the sense of one who knows a τέχνη, but in the sense of a god whose general power can be used to heal.

The legendary physician Asklepios, a hero before the fifth century, soon became regarded as a god. In classical legend this son of Apollo and the mortal woman Koronis was brought up by the wise centaur Khiron. He healed many men before Zeus struck him with lightning for daring to bring a man back from the dead.  

The traditional versions of his life and death portray Asklepios as a protector of men against the dangerous and arbitrary gods. The fourth century poet Isylos describes him as a "μέγα δόρυμα βροτοῖς." Pindar’s introduction of a monetary motive for his hubristic downfall, while less idealising, utilises a characteristic trope of mortal medical discourse and again represents Asklepios in non-divine terms.

The most immediate sources for the Greek perception of Asklepios are to be found in the fourth century inscriptions from his sanctuary at Epidauros. Sufferers came here to sleep in the god’s temple, where they hoped to receive a vision of the god in their dreams and thereby to be cured. The process is known as incubation. The inscriptions are the records of some of those who claimed to be successful. Unsuccessful cases went unrecorded, and so the inscriptions represent only a small proportion of the relations between patients and the god.

Although Asklepios’ power as a healer depends like Apollo’s on knowledge, in the classical and later periods it is in many respects a different kind of knowledge. His teacher Khiron was famed for his drug and healing lore. In the fifth century

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5 Pindar Pythiae 3; Diodoros Sikulos 4.71.
6 IG 4.2, 1 no. 128 iv. 53 (ca. 300).
8 IG 4.2, 1 nos. 121-122 = Edelstein (1945) I E423. Henceforth references of the form E-number are to Edelstein (1945) I.
9 Pindar Pythiae 3; Iliad 4.218-9.
Pindar describes his expertise in the contemporary medical terms of the knife, drugs and incantations. The perception of Asklepios at Epidauros in the fourth century was plainly influenced by the contemporary rise of the innovative ‘rational’ physicians, if not by the precise rationales associated with them. He often actively intervened with treatments which related directly and obviously to the wound or symptoms and removed the problem by physical means: examining and treating, frequently even performing surgery. According to Cicero in the first century he was the inventor of a surgical probe and the first user of bandages. Such claims present Asklepios, the archetypal healer in respect of acknowledged methods of healing, as the ‘inventor’ figure behind medical techniques and substances.

He is commonly described as πρῶες (gentle, mild) or as “helpful” or “saving.” This is a characteristic of the ideal physician. In the extant sources any harmful acts of Asklepios are extremely minor ones. This is not to say that impiety was of no concern to Asklepios, but it certainly did not entail the dangerous consequences of impiety in stories linked to Apollo and other Olympians. Although three of the Epidauros inscriptions concern people who made derogatory or disbelieving remarks about Asklepios, and three deal with immorality of other kinds, in only two of these six cases did Asklepios cause that person’s illness. In the other examples it seems to have been merely a coincidence. Of these two cases, in no. 36 a sceptic is punished by injury when his horse steps on his foot, but the god then relents and cures him; while the protagonist of no. 7 steals another sufferer’s payment to the god and acquires his victim’s skin disease as a punishment. On the other hand, the patient of no. 11 is cured in spite of having acquired his injury impiously, and no punishment or retribution is mentioned at all. If Apollo in the Hippocratic Iusiurandum is the

10 De natura deorum 3.22.57.
11 See e.g. Scholia in Pindarum ad Pythias 3.9 and “the blameless physician” of Iliad 5.899. Herodotos 3.130: Demokedes uses Greek and ἕμια remedies instead of the ἰςχαρα ones of the Egyptian doctors.
12 E423. 3, 4, 36 and 7, 11, 22.
witness and guarantor of the physician’s ethic of harmlessness, Asklepios is its exemplar.\(^\text{13}\)

Asklepios, then, tends to be represented in terms of the methods, preoccupations, and even character of contemporary healers, and his knowledge and practices change with changes in contemporary healing. The difference between Asklepios and mortal physicians was not so much between their respective methods as in their respective authority. The fact that he acts both as an expert in the medical τέχνη and as a god enables him to combine the authority of the religious cure with the scientific one. According to Galen, referring to Asklepios’ temple at Pergamon in the second century CE, the ill obey gods more readily than they do doctors.\(^\text{14}\)

It is true that on occasion his advice and knowledge are, like that of Apollo and other oracular powers, not limited to medical problems. The oracular form of the cult is also evident in the fact that the god works through the medium of dreams, while the certainty of his knowledge implies a supernatural and non-technical dimension to his cures. Thus some inscriptions describe an Asklepios who simply appeared to those dreaming in his temple and performed a miraculous cure.\(^\text{15}\) Again, the story which attributes much of his power to the blood of the Gorgon puts Asklepian healing beyond even the potential reach of the Greek physician.\(^\text{16}\)

Yet the Gorgon motif is rarely mentioned and plays no visible part in the inscriptions from Epidaurus and other sanctuaries at Pergamon, Lebena and Rome. And before the Roman period Asklepios’ role beyond medicine is extremely limited, consisting mainly of mending property and finding missing children in response to casual requests.\(^\text{17}\) It seems that divinisation has lent him supernatural power and immortality in addition to the power he already had as a consequence of his

\(^{13}\) 1.1 (CMG 1.1, 4.1).
\(^{14}\) In Hippocratis librum 6 epidemiarum commentarii 4.8 (CMG 5.10.2, 199.4-7); c.f. E468.
\(^{15}\) E423. 2, 3, 8, 18, 29.
\(^{16}\) Apollodoros Bibliotheca 3.10.3-5.1.
\(^{17}\) E23.10 and 24. In the second century Apollodoros said that Asklepios “superintended divination and augury” (E301) but Edelstein (1945) II 105 argued that this general oracular aspect was less marked in the classical and Hellenistic period than in the Imperial era.
knowledge as a mortal physician, but this has little effect other than to confirm him as the physician *par excellence*. Although Apollo is the god of medicine physicians of the pre- and early classical period were known as ‘Asklepiadai,’ a term which designated exclusive and probably hereditary groups of recognized healers, and which indicates a professional skill or τέχνη rather than a religious preoccupation. For Asklepios the function of the physician dominated that of the god, and his knowledge of the healing art and technical expertise could in principle be shared by other, mortal physicians such as Asklepios’ sons in legend, the Homeric physicians Makhaon and Polidarios.

In the Ptolemaic period the cult of Asklepios had expanded to become one of the most successful cults in the Greek world. Alexander himself sacrificed to Asklepios and the god’s major cult centres in Epidauros, Athens, Kos and Pergamon attracted visitors from Greek settlements everywhere.

Egypt
The closest parallel to the two-edged power of Apollo is that of the lion-headed goddess Sakhmet. She was feared and appeased as a bringer of disease, and as with Apollo this often involved the imagery of archery. This perhaps explains the role and status of the priests of Sakhmet as the specialist and principal healers of the temple hierarchy in Egypt, many of whom were also described as physicians (swnw).

18 As with the terms “Daedalidae” for craftsmen and “Homeridae” for rhapsodists: Edelstein (1945) II 57.
19 Arrian *Anabasis* 2.5.8 c.f. 7.14.5-6, Pausanias 8.28.1. Arrian rejects the claim that Alexander destroyed the god’s temple at Ekbatana.
20See n.1 for Apollo. He was sometimes invoked as “Smintheos,” master of epidemics: Carlier (1992) 139. Demonic messengers of Sakhmet shoot arrows of plague from their mouths in the *Book of the Last Day of the Year*: Borghouts (1978) no. 1 c.f. no. 5, and *Hymn to Sesostris* in Lichtheim I (1973) 198. This connection between god, arrow and plague dates back to the bronze age in the near east: *OCD* (2000) ‘Apollo.’
21 See chapter one.
Their expertise probably originated in their privileged ability to intercede with their powerful and dangerous goddess and turn away her wrath.\textsuperscript{22}

The Egyptian deities most often appealed to for healing are Thoth, Isis, Horos, and Imhotep.\textsuperscript{23} Of course the association between particular gods and healing does not exclude other gods from performing healing acts. All deities both national and local could be implored to use their power for the benefit of their worshippers, in matters of health and disease as in all other areas of life. Similarly the roles played by Thoth, Isis and others in this area are only a part of their more general significance. Pilgrims seeking a promise of safety or healing for themselves and their families came especially to the temples of these gods to make their proscynemes and to ask favours. They tended to play restorative and knowledgeable roles in Egyptian myth: in the perpetual struggle for the safety and wholeness of the universe they are gods who restore rather than destroy, forces which heal rather than harm.\textsuperscript{24}

The power of Thoth in medicine was derived from his role as the heart of Ra, since the heart is the seat of memory in Egyptian thought. He is the professional knower, so to speak, of the Egyptian divinities. He is the god of scribes and the ritual expert of the gods, the priest of the gods and the god of priests.\textsuperscript{25} The restoration of health and order and the averting of evil are thus included in Thoth’s domain whenever knowledge is the necessary means of accomplishing these ends. In applying this knowledge to medicine Thoth became a divine physician (\textit{swnw}), and indeed this epithet is frequently applied to him.

\textsuperscript{22} In a list of sacred books on the walls of the temple of Horos at Edfu is \textit{The book of appeasing Sakhmet}: Sauneron (2000) 135.

\textsuperscript{23} Like these four the gods Ammon, Min and Haroeris are also known as physicians (\textit{swnw}). Women in childbirth called upon the goddesses Taweret, Meskhenet and the protective god Bes. The scorpion goddess Serket (or Selket) was invoked against poisonous bites and stings.

\textsuperscript{24} Isis and Sarapis (see below) are referred to as saviour gods at Philae: Bernand (1969) no. 5, c.f. the references to Sarapis as “father” or “saviour” collected by Stambaugh (1972) 48 n. 1. For Isis as saviour, particularly of sailors, see Dunand (1973) I 40 and n. 2.

\textsuperscript{25} Derchain (1992) 225.
Evidence for the cult of Isis comes mainly from the Late Period of Egyptian history (664-332) under the last pharaohs, when her cult spread beyond its original base in the Delta. Little is known about it prior to this as almost no temples have survived from the Delta region. Her mythic roles date to an earlier period, and usually involved the healing and rescue of people and gods from injury, disease and poisonous animals. Isis' particular expertise seems to be an understanding and control over the pharmaceutical qualities of plants and other natural materials. The Isis of myth is explicitly sent as a swnw by Ra to deliver his sons the pharaohs, and she saves her infant Horos from the poisonous scorpions and snakes of the marshes.

The mortal Imhotep was the architect of the first pyramid, the 'Step' Pyramid of Djoser, suggesting that he lived ca. 2600. According to the history of Egypt written in the early Hellenistic period by the Egyptian priest Manetho, Imhotep:

οὗτος Ἀσκληπιός <παρὰ τοῖς> Ἀγγείται κατὰ τὴν ἰατρικὴν νεώμοισα, καὶ τὴν διὰ ξεστῶν λίθων οἰκοδομίαν εὐφαί. ἀλλὰ καὶ γραφῆς επεμελήθη.

After his death Imhotep acquired a funerary cult, based around his tomb in Memphis. His iconography changed around 525, which is also the time of the earliest reference to him as an actual god. In myth he was the son of the craftsman god Ptah, though this divine ancestry co-existed with, rather than replaced, his mortal family.

The Greeks consistently identified Imhotep with that other deified healer Asklepios, an identification accepted by Manetho in the above quotation. In what follows the phrase 'Imhotep-Asklepios' is used to refer to this god, but unless specifically stated otherwise it should be assumed that the architecture, personnel and ritual of the cult were largely or entirely Egyptian. The cult of an entirely Greek Asklepios seems to have been relatively rare in Greek Egypt (see pp. 105-6).

26 Durand (1973) I 1-2.
27 Quirke (1992) 67; 61.
28 Fr. 11 c.f. 12a, 12b.
29 Hurry (1928) 62.
Greeks in Egypt

In both Greek and Egyptian culture godhead was a universal presented under a massive variety of local aspect. The apparently standard Olympian pantheon often disguises to the modern eye the fact that the gods were actually worshipped in local forms and under local names, or under specific aspects of their wide-ranging powers. There were similar local and functional variations in the Egyptian gods. Greeks were therefore predisposed to view the descriptions of gods of another language and culture as further variations upon the same divine theme and to identify them as their own gods in unfamiliar guise. These identifications were somewhat loose, as they depended on a correspondence between some but not all of the gods' attributes. Aphrodite was sometimes identified with Hathor and sometimes with Isis, Isis with Aphrodite or Demeter.

This religious pluralism does not necessarily imply more than a change in name for the gods, the assimilation by co-optation of Egyptian deities to their Greek equivalents and vice versa. However several Greek classical and Hellenistic writers employ the assumption that Egypt's antiquity provided an aetiological and ethnographic explanation of the origins of things, including the identity of many gods. Herodotos is one such writer, saying at 2.50:

σχέδον δὲ καὶ πάντων τὰ όνόματα τῶν θεῶν ἐξ Ἑλλάδος...ἐλέγῳ δὲ τὰ λέγουσι αὐτοὶ Ἑλλάσιοι.

And at 2.51 he adds that many Greek religious customs also originated in Egypt. The Egyptophile tendency in many Greeks is important evidence in examining Greek attitudes to Egyptian deities and to Egyptian ways of representing and worshipping those deities. Greek perceptions of Egyptian customs tend to be biased towards apparent similarities, refracting Egypt through a prism of Greek preconceptions and assumptions about the relationship of Egypt to Greece. This aetiological approach, which gives a certain prestige and priority to Egyptian gods and modes of worship, is
evidently ("I say as the Egyptians say") one which many Egyptian priests were willing to encourage.

The largely self-sufficient minority of Greek colonists in Egypt before the Ptolemaic period were familiar with Egyptian gods, as were some Greeks in the mainland and islands who had had contact with Egyptians or who knew the writings and reports of those who had. Commercial contact had led to the existence of a temple of Isis in the Athenian Piraeus by 333/2 for the Egyptian merchants and seamen resident in or passing through Athens. Another temple was founded in Eretria at about the same time. There seems also to have been a cult of Isis at Delos from the end of the fourth century, though it probably comprised only Egyptians until a generation later.

Some Greeks in pre-Ptolemaic Egypt adopted not only Egyptian gods under Greek names, but also Egyptian cultic practices, and sometimes entered into cults with no direct Greek equivalents. Plato located Thoth in Naukratis, the trading city with a largely Greek population on the Egyptian coast founded between 664 and 610. It contained temples to Greek, syncretic and Egyptian gods.

Ionians who had served as mercenaries in Egypt and settled in the Egyptian town of Memphis in the sixth century had their own quarter and temple, the Hellenion. Another part of the town contained settlers from Karia. By the Ptolemaic period both groups had adopted or been influenced by many Egyptian practices and beliefs. A late fourth century curse from a Karian Memphite woman called

30 Fraser (1972) I 260.
31 IG 11.4.1306 and see Dunand (1973) II 85.
32 Phaedrus 274c/7: "Ἳκουσα τοῖνυν περὶ Ναύκρατιν τὴς Αἰγύπτου γενέσθαι τῶν ἐκεί πολιτῶν τῶν Θεῶν, οὗ καὶ τὸ ὄρνεον ἑρόν ὃ ὅθ' ἱκουσαίνει Ἰβίν. Ἀὕτω δὲ ὅνομα τῷ ἐίση Θεῦ.
33 Greek cults included a Hellenion and temples to Zeus, Hera and Apollo: Herodotos 2.718, c.f. the dedications to Greek gods found by Petrie (1886) 27-8 and Gardner (1886) 54-61. Cults of the syncretic Zeus Ammon and the Egyptian gods Mut, Khons, Min and Sakhmet also existed: Coulson (1996) 191. ‘Syncretic’ refers to cults which contain elements from two or more distinctive cultural traditions, often the attempt of one culture to assimilate the other by re-interpretation in a less alien form.
Artemisia calls upon the mummified bull Osiris-Apis and related gods as witnesses.\textsuperscript{35} In the fifth or fourth century a carer for the sacred ibises bears the Greek name of Ariston.\textsuperscript{36}

These last examples are particularly notable because of their involvement with animals and mummification. Not only are these elements far more characteristic of Egyptian cult than Greek, but animal worship was explicitly rejected by Greek religious norms. Diodoros Sikulos, for example, comments that:

\[ \text{Παύτα δὲ θαυμάσια καὶ μείζων πίστεως ἐπιτελοῦντες οἱ κατ’ Αἰγυπτιον ἐς τὰ τιμώμενα ζώα πολλὴν ἀπορίαν παρέχουσι τοῖς τὰς αἰτίας τούτων ζητοῦσιν.} \]

However the rhetorical polemic of some Greek writers against animal worship was neither universal nor impermeable. Clement mentions several examples of animal cults in Greece itself.\textsuperscript{37} It is also the case that animals are often connected with the gods in Olympian myths and cult practices. In particular the sacred snakes of Asklepios sometimes instantiate the god, and both they and the sanctuary dogs can cure people by licking them.\textsuperscript{38} The fortuitous survival of Ariston and Artemisia further demonstrates that any explicit disavowal of animal cult does not necessarily survive even a partial cultural assimilation of a minority group into the prevailing environment. Nor was this adoption of very Egyptian cults limited to the pre-Ptolemaic period, as we will see below.

\section*{2.3: Gods, temples and the Ptolemies}

The policy of the early Ptolemies towards the Egyptian temples was one of co-optation rather than repression.\textsuperscript{39} The existing temple infrastructure controlled and organised an enormous amount of Egypt’s agricultural and other economic wealth.

\begin{itemize}
\item \textsuperscript{35} UPZ 1, the ‘Curse of Artemisia.’ Also the dedicated bull with a Doric influenced inscription from the same group of Karian Greek immigrants: Masson (1977).
\item \textsuperscript{37} Protrepticus 2.39.
\item \textsuperscript{38} E423.17, 20, 26 and (a goose) 43.
\item \textsuperscript{39} See e.g. Thompson (1988) 106-9.
\end{itemize}
Though the Ptolemies took control of temple revenues, temple estates were in fact often extended and endowments provided. Moreover the support or at least acquiescence of the priests was obviously a vital component in the avoidance of nationalistic rebellion, and in the Ptolemies' re-invention as the acknowledged rulers of Egypt. This strategy had begun with Alexander, who took on the pharaoh's identity when sacrificing in 332 to the native Apis cult in Memphis, the ancient home of the pharaohs in Lower Egypt. He may have been officially crowned in the temple of Ptah at the same time.

Similarly Soter made his capital at Memphis until Alexandria had been completed. Soter's offer of a loan to the Apis cult was an early step in his self-representation as pharaoh and in gaining the support of the priests, while at the same time he continued to present a Hellenic face to the wider Greek world and internal Greek colonists. Since Egyptian religion depended on the existence of a king of Egypt to interact with the divine and preserve the order of the cosmos, the priests were motivated to support the Ptolemies' Egyptianising efforts.

Thus the Ptolemies' support for large-scale religious building projects served both to demonstrate their support of Egyptian religion and tradition, to represent and justify their pharaonic identity and status, and to exhibit their control of Egypt's reputation and resources to the wider Hellenistic world. These projects were typically the renovation of old temples and the building of new temples in traditional Egyptian architectural style, dedicated either to Greek gods or more commonly, to Egyptian gods under Greek names. In the temples the king is represented as carrying out the pharaoh's ritual duties on the walls of Ptolemaic temples and portrayed according to the traditional pharaonic iconography.

\[\text{References:}\]
\[\text{Finnestad (1997) 233.}\]
\[\text{Finnestad (1997) 229, 232-3.}\]
The Ptolemies did build temples in a non-Egyptian colonnaded style to certain Greek gods, as at Khemenu, although no temple to Asklepios is known.\(^{43}\) There were also of course many smaller Greek style temples to Greek gods erected by Greek communities and individuals, especially in new villages like Philadelphia in the Fayum.\(^{44}\) But most of the temples that were built at the instigation and expense of the Ptolemies themselves, notably at Dendera, Edfu, Esna, Kom Ombo, and the temples of Isis, Hathor and Imhotep at Philae, were Egyptian in every aspect except two. Firstly the zodiacal ceilings in the temples of Hathor and Khnum at Dendera and Esna respectively appear for the first time in the Ptolemaic period.\(^{45}\) Secondly the dedicatory inscriptions of Ptolemaic temples are in Greek – the only language spoken by any Ptolemy before Kleopatra VII. These name the gods as their Greek equivalents, or rather, perhaps, under their Greek names. The Greek words are translated into hieroglyphs inside the temple.

The small sanctuary of Imhotep at Philae was founded by Epiphanes and Kleopatra I. Imhotep is also depicted in some of the other temples built or decorated during the reigns of Philometor, Euergetes II and Auletes. His temple seems never to have been fully decorated and the answer to the question of whether it was in use after the reign of Epiphanes is uncertain. The reliefs of the façade present Imhotep in his standard Egyptian iconography of a man with a cap-like wig and a uraeus. He is shown with other Egyptian gods – Ptah, Thoth, Khnum-Re, Osiris, Isis, Satis and Anubis – and with his deified mother Heredew-ankj and wife Rempet-nefret, and with king Ptolemy, who offers him incense and libation.\(^{46}\) All the texts are in Egyptian except for the founding inscription, which names the god as Asklepios.\(^{47}\)

\(^{43}\) Quirke (1992) 175. Philadelphos did patronise a Koan festival of Asklepios: SEG 12.368 (before 246) and see Sherwin-White (1978) 99-100. This may have had more to do with diplomacy towards an ally than a particular interest in the god. Kos and Asklepios were not very separable.

\(^{44}\) Lewis (1986) 27.

\(^{45}\) They then became relatively frequent, especially in the Roman period. Finnestad (1997) 188.

\(^{46}\) Vassiliki (1989) 52-4.

\(^{47}\) See p. 93 and n. 104.
Many of the inscriptions to Isis at Philae refer to offerings to the king, are in the name of the king, or appeal to the gods to keep the king safe. Bernand (1969) 55 plausibly argues that these are in effect less a religious than a political statement, a public and sacred declaration of loyalty. In pharaonic Egypt Isis could represent cosmic protection of the king, and this seems to be a large part of the role she is playing at Philae.  

It may have been an extension of this role that resulted in the close association of a Hellenised Isis and her immediate divine family with that of the Ptolemies. In Egyptian myth and ritual Isis was the wife of Osiris, who was the symbol of rebirth and regeneration. More specifically he was associated with the Nile inundation and with a reconstituted life after death. Murdered and dismembered by the chaotic force of his brother Seth, Osiris was reassembled and restored to life by Isis and Anubis in the first mummification.

The Ptolemaic queens took on the epithets and later even the identity of Isis.  

To a smaller extent their children represented Harpokrates, the Greek name for Isis' son Horos when young. Philopator built a small sanctuary to Harpokrates adjoining the Alexandrian Sarapieon. The third member of the Ptolemaic divine triad was Isis' brother and husband Osiris, in the Hellenised form of Sarapis.

It is now generally agreed that Sarapis, a god who first appears in Ptolemaic Egypt, is in fact not a new divinity but the Memphite cult of Osiris-Apis, the embalmed Apis bull. As seen above (pp. 74-5) Osiris-Apis was appealed to by at least one Greek as early as the fourth century, and the cult was probably popular among Memphite Greeks both then and in the Ptolemaic period. Soter and his advisers, the Greek priest Timotheos and Manetho the Egyptian high priest of Heliopolis, (re)presented this god in the guise of a patriarchal Greek, rather like a more benevolent version of Osiris' nearest Greek equivalent Hades. The close identification of Sarapis and his consort

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49 Fraser (1972) 1240-5.
50 Rowe (1946) 54ff.
Isis with the Ptolemies further suggested that his role was a divine counterpart to the two faces of the Ptolemaic pharaoh, an Egyptian god who was also a god of the Hellenes.

Sarapis’ first appearance as a healing god in the extant literature is his cure of the blindness of Demetrios of Phaleron. This must have occurred under Soter, since Demetrios fell from grace with Philadelphos’ accession. Demetrios is said to have subsequently written hymns to the god, as well as five books about dreams and cures involving Sarapis.\textsuperscript{51} Sarapis’ reputation for healing was thus present very early on, and was perhaps an attribute derived from the healing powers of his consort Isis in Egyptian belief.\textsuperscript{52} Tacitus’ claim that Sarapis was to be identified with Asklepios is not matched by any such explicit claim from the Hellenistic period itself.\textsuperscript{53}

The preceding sections have shown that divine identity in Greek Egypt was a fluid and inclusive concept, both as a matter of locality and aspect and also between different cultures, languages, and traditions of religious practice. This applied equally to the domain of divine healing. For both Greeks and Egyptians temple medicine in Egypt took place in a context of religious pluralism, syncretic innovation and cross-cultural identifications and transformations. The following sections will consider how the Egyptian environment affected Greek expectations and practices in regard to the cults of those gods associated with medicine in both Greece and Egypt.

There are three categories under which this interaction may usefully be examined: priests, procedures and pilgrims.

\textsuperscript{51} Artemidoros \textit{Onirocriticon} 2.44; Diogenes Laertios 5.76.
\textsuperscript{52} Brady (1935) 12.
\textsuperscript{53} \textit{Historiae} 4.84.5: “He is believed by many people to be Aesculapius because he heals the sick.” See Stambaugh (1972) 75. The fact that Asklepios was already strongly identified with Imhotep was not in itself a barrier to a further identification with Sarapis, as such identifications were by no means exclusive see p. 73.
2.4: Priests and temples

Due to the shortage of evidence for temple medicine in Ptolemaic Egypt, the following discussion will also use evidence for Greek and Egyptian interactions in other cults, as many aspects of these are also relevant to the gods known for healing.

There was little penetration of Egyptian cults by Greeks in any official capacity. Almost all Egyptian cults were fully staffed by Egyptian priests. Thompson notes that in Memphis the two apparent cases of a Greek priest refer to men whose background is at least partly Egyptian. They are the consequence of limited Hellenisation in Egyptian communities rather than ethnic infiltration by Greeks into Egyptian cults. Thus there was some room for those of dual ancestry, but in general the Egyptian priestly elite remained a discrete and exclusive entity. The case of Ariston, the Greek carer for the sacred ibises mentioned on p.75, suggests that there was no automatic bar on Greeks being accepted into the temple hierarchy, albeit at a relatively menial level, even before they became the rulers of Egypt. Unfortunately it is impractical to generalise from this single example of the low-ranked Ariston.

One explanation for the absence of Greeks from Egyptian temples is the stringent eligibility requirements of Egyptian priesthoods. The formal role of an Egyptian priest of higher status required literacy in hieratic and hieroglyphic, the two forms of the Egyptian language besides demotic, and familiarity with a complex and rigid set of rituals set down in the temple libraries. By the Late Period (664-332) Egyptian priesthoods were exclusive, salaried, professional occupations. Entrance into them, subject to the requirements outlined above, was obtained through combinations of inheritance, selection by senior priests, and purchase of office. The image of the god

54 The officer and priest Dorion, honoured in 112-111 by the Idumaean community of Memphis, was the son of another Dorion and the priestess Herankh/Herakleia. Horos the son of Berenike again used Dorion as his Greek alter ego – although Horos itself, like Isis, was in Ptolemaic Egypt a common name among both Greeks and Egyptians: Crawford (1971) 134-5; OGIS 737 (112-111); also see Thompson (1988) 102-3.

55 P. Tebr. 2.291 (CE 162) demands from candidates for priesthoods proof of circumcision and sacerdotal parentage. Literacy in hieratic is accepted as showing the latter.
was daily dressed and anointed; offered food, libations, and incense. Liturgical rituals, held either in secret or in public, animated myth and represented the god’s function. Public ceremonies and parades took place five to ten times a month.

Much of this specialist knowledge and detailed ritual practice had no Greek parallel. Most Greek priesthoods were taken on by a layman functioning as a civic magistrate, occasionally for life and more often for a limited period such as a year. Such a priest would usually be unpaid, although like Egyptian priests he would be entitled to a share of the sacrifices. He was likely to be a man of some wealth (since he needed to be able to support himself on little or no payment) and status (since the position brought some honour and had therefore to go to someone appropriate to receive it). In the Greek world the priesthoods of Asklepios remained civic positions. In fourth century Epidaurus and mid-fourth century Athens the priest of Asklepios changed annually and was chosen by lot from those eligible for the position, while the priesthood of Asklepios at the famous cult centre at Pergamon was hereditary from at least the second century. But like the temporary civic magistracies these remained a mark of high status rather than an opportunity for monetary reward or a stage in a religious career. Thus the traditional form of a Greek priesthood is quite different from an Egyptian one.

There are nonetheless a few known instances of Greek priests in apparently Egyptian cultic contexts, though most or all of these are special cases. The fifty-two high priests of the Ptolemaic period whose names are known include eight, possibly nine, Greeks or Hellenised Egyptians. As one would expect most of these appear to be connected to Greek rather than Egyptian gods. But one, perhaps from the first century, is a high priest of Ammon – the Greek version of the Egyptian Amon – and “other gods dwelling with him.” Another is named in two inscriptions from Philae in the later second century as Eraton, a συγγεινής of the king, high priest and prophet.

56 Aleshire (1989) 72; *HP* 2.251 (ca. 200).
57 *PP* 3.5377-5422 inclusive. I cannot find the name Semtheos attested outside Egypt.
58 *PP* 3.5380.
of Isis. Another inscription from Philae is by a priest of Sarapis and Isis named Syron.

The exact identities of Syron and the priest of Ammon remain unclear, but Eraton certainly seems to have been a high-status Greek, or just possibly a Hellenised Egyptian. As the high priest of Isis, a post which he held from at least 142 to 114, he was probably the most important person in the whole sanctuary of Philae. The extent of his cultic knowledge and activity can only be guessed at, but it seems likely that gaps in his ritual understanding and power could be filled by Egyptians in positions of lesser rank. Certainly the administrative organisation, cult ritual and many of the priests at Philae were Egyptian.

This is indicated firstly by the length of Eraton’s tenure, which is much longer than that of a non-permanent Greek priesthood. Secondly, sometime between 126 and 116 the priest of Isis and the priests of the Abaton sent a petition to Euergetes II and his two queens appealing for a reduction in the numbers of officials and soldiers staying on Philae and exhausting its resources. The petition and the answering royal rescript are recorded on an obelisk in Greek and hieroglyphics. Such bilingualism would hardly be required in a predominantly Greek environment.

No doubt Egyptians dominated such priesthoods in at least the early years of Ptolemaic rule. Subsequent generations of Greeks, more familiar with the cult practice and organisation of Egyptian priests, could have filled their shoes more readily, though I doubt that they ever did so in large numbers. It cannot therefore be fully ruled out that Eraton and/or Syron are Greeks from areas or families with a strong Egyptian culture, who could indeed read hieroglyphs and came up through the temple administration.

59 Bernard (1969) no. 14 (142) and no. 23 (114) = PP 3.5385. For the meaning of “prophēt” and “high priest” see n. 82.
60 Bernard (1969) no. 85 (date unknown).
61 Very unlikely, especially in view of the fact that this name is otherwise unattested in Egypt.
An alternative explanation is that a few Greeks were appointed to positions in the Egyptian temple administration as an acknowledgement of, or as an alternative to, a high rank in the civil administration. The model for this are those high-ranking Egyptians of the later Ptolemaic period who often hold simultaneous high-status positions in the administration and in the religious hierarchy. For example in the first century the Egyptian Pamenkhes held the posts of stategos of Edfu and high priest of Horos at Edfu simultaneously, following this up with similar double postings at Dendera, Elephantine, Philae, Eileithyaspolis and Hierakonpolis. It appears that these cultic positions were rewards for an illustrious civil career, though an early successful career in the Egyptian temple administration perhaps brought certain individuals to the attention of the civil government.

Eraton and Syron were probably appointed by royal fiat. Royal patronage was one route to power in the temple infrastructure which did not depend on heritage and may have necessitated fewer qualifications. This was not a Ptolemaic innovation as pharaonic prerogative had also previously inserted favoured candidates in particular positions. It is extremely significant that Eraton and Syron were priests of Isis and Sarapis out of all the Egyptian gods. The strong connection of these gods with the Ptolemies also connected their priests to the court and the administration and probably explains the appointment of Greeks to these high-profile positions. The existence of a Greek priest of Ammon may likewise have had something to do with this god’s historical role in the story of Alexander in Egypt.

Isis and Sarapis are two of the most Hellenised and syncretised gods in Egypt. Sarapis’ Greek appearance usefully gets round the animalistic aspect of the Osiris-Apis cult by emphasising the Osiris at the expense of the bull. Nonetheless Greek writers viewed Sarapis primarily as an Egyptian god, and the distinction between

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63 Pakhom held a similar set of posts: Bernand (1969) 276-7. Both officials fl. ca. 50-30. Such double careers are possible as Egyptian priests usually serve in rotation, allowing three-quarters of the year for other posts. *Strategos* is not a military post.

Sarapis and Osiris-Apis/Osiris is chiefly one of context and aspect. At Abydos the ruin of a pharaonic shrine to Osiris contains Ptolemaic period graffiti to Sarapis, while even in Greek writers Osiris retained the role of Isis’ consort in myth and ritual – most notably in Plutarch’s De Iside et de Osiride.

Sarapis’ temple in Alexandria was newly built by the Ptolemies in the royal sector. Consequently there was no prior architecture or tradition to constrain the form taken by Sarapis’ temple there, as there was for the Sarapieon in Memphis. Nonetheless the Alexandrian Sarapieon seems to have been at least partially Egyptian in architecture and ritual, in keeping with his perceived identity as an Egyptian god.

The original Alexandrian Sarapieon was erected by Soter and rebuilt on a more ambitious scale by Euergetes I. Badly damaged by Jewish uprisings in CE 116, it had to be replaced with a new temple under Hadrian. All the evidence about cult practice and the layout of the temple refers to this Roman period temple and is itself even later in date. Rufinus (ca. CE 345-410) describes the “solar kiss” consisting of a carefully placed window that allowed sunlight to touch the mouth of Sarapis at the precise moment that the statue of the sun god was brought into the temple on certain ritual days. This solar recharging of a god is a common element of pharaonic cult for which there are known Ptolemaic parallels in many of the temples of Upper Egypt, including Esna, Edfu and Dendera.

Both Rufinus and the fifth century CE author Quodvultdeus report a magnet set in the ceiling of the rebuilt Sarapieon which made the statue of the sun (Rufinus) or an iron chariot (Quodvultdeus) appear to levitate when placed directly under the magnet. Again there is a Ptolemaic parallel which indicates that this element of the cult of Sarapis may date back to that period: a magnet was to be incorporated in the

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63 See e.g. Aelius Aristides Oratio 2.68; Plutarch De Iside et de Osiride 380d.
64 There was no village of Rhakotis on the original site of Alexandria, a theory due to the Greeks (and subsequent historians) mis-interpreting the Egyptian word for building site, which referred to Alexandria under construction and thereafter as a term of contempt: Chauveau (2000) 57 c.f. Depauw (2000).
67 Quodvultdeus Liber promissionum 3.42.4-14.
design of the Alexandrian temple dedicated by Ptolemy II Philadelphos to his sister-queen Arsinoe, until the building process was interrupted by the successive deaths of the architect and the king.\(^{70}\)

The credibility of the evidence is obviously limited by its lack of eyewitness observation or even contemporary rumour, but these reports do seem to imply the use of ingenious devices in Greek-built temples of the Ptolemaic period. The combination of innovative Greek technology and Egyptian imagery was in fashion: the mechanist Ktesibios dedicated a drinking-cup in honour of Arsinoe Philadelphos for her temple at Cape Zephyrium. It was in the form of a head of the Egyptian god Bes, with an automatically opening trumpet which gave out a musical note when liquid was poured from it.\(^{71}\)

Rather more certain evidence about the Alexandrian Sarapieon comes from archaeology. A Ptolemaic column found on the site suggests that the architecture contained pharaonic elements.\(^{72}\) Statues of Egyptian priests have been found in the Sarapieon, implying that at least some of the clergy there were Egyptian.\(^{73}\) Egyptians as priests of the Hellenised Egyptian cults of Sarapis, Isis and Anubis outside Egypt were by no means unknown, notably at the early sanctuary of Sarapis on Delos. On a late third century stele the priest Apollonios describes how his grandfather, an Egyptian of the priestly caste, came from Memphis and set up a private cult of Sarapis.\(^{74}\) This was continued by his son and grandson, though after 166 the by now public cult was staffed entirely by Athenian citizens. Similarly the earliest reference to the worship of Isis on Delos is that of an Egyptian woman.\(^{75}\) The priest of Isis at Demetrias was Egyptian – and used Egyptian dress – as was at least one minor cult servant at Priene.\(^{76}\)

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\(^{70}\) Pliny *NH* 34.42.148.

\(^{71}\) Hedylos 4 (Gow and Page 1965).

\(^{72}\) Fraser (1972) I 266.

\(^{73}\) Empereur (1998) 93.

\(^{74}\) *IG* 11.4.1299. See Fraser (1972) I 253-4, 499-501.

\(^{75}\) See n. 31.

\(^{76}\) Fraser (1972) I 254 with II n. 504; I 264 with II nn. 601, 602, 605, 606.
This is not simply a matter of the ethnicity of temple staff being determined in accordance with the perceived ethnic-cultural identity of the god. It also has implications for cult practice, which as observed above differed sharply in many aspects between Greek and Egyptian temples. This is difficult to generalise about as the organisation and architecture of the temples of Sarapis and other healing gods varied from site to site. As has just been seen, that of the Alexandrian Serapieon was mixed, probably primarily Egyptian in ritual with some Hellenistic elements in iconography and display. At Sarapis’ shrine at Canopus it is almost certain that the cult infrastructure was entirely Egyptian, as no doubt at other smaller shrines dating from pharaonic times. The name Sarapis was probably simply applied by Greek visitors to the pharaonic temples of Osiris in such places.

In Memphis, where the original temple of Osiris-Api was known to Greeks as the Sarapieon, Sarapis’ culturally composite nature is signified by the Hellenistic period architecture. A statuary group of notable Greek thinkers were placed near Nectanebo II’s temple to Osiris-Api, forming a contrast with the main avenue of sphinxes and the Egyptian architecture. Dionysiac elements were also present: the wall of the dromos which linked the Memphite Sarapieon’s main shrine to Apis with the fourth century pylon erected by Nectanebo I contained sculptures of Dionysos as a child and a group of associated fauna. A major reminder of the Apis aspect of the cult is present in the burying of the mummified Apis bulls, with great ceremony, in the vaults of the Sarapieon. Near the entrance to the vaults stood two shrines, one of Egyptian style, one a Greek building in which dwelt the temple servants responsible for the sacred lamps. A Greek inscription indicates that it was built and dedicated as thanks for a cure by the god.77

Yet Memphite cults were Egyptian in both staff and practice, although there were numerous Greeks resident and working in the necropolis such as the recluse Ptolemaios son of Glaukiás and a Kretan dream interpreter.78 Apart from the Kretan and the use of the name ‘Aklepios’ in Greek papyrological and epigraphical

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77 É. Bernand (1992) no. 11 (fourth or third century).
78 For Ptolemaios see pp. 112-3; for the Kretan see p. 87.
references to the site, the only hint of Greek involvement on the service side of the
cults in Memphis are the fragments of a Greek medical text from the fourth or third
century found on the necropolis.79

Imhotep’s chief temple at Memphis, known to Greeks as the Great Asclepieion, was
probably sited within the precinct of the sanctuary of Anubis. It is now lost or
destroyed. Like other important Egyptian temples it would have possessed large
endowments.80 We know of two members of the temple personnel, Khonsiou son of
Eskedi and, in the first century, Psenptais son of Petobastis, both named as “scribes of
Imouthes (Imhotep)” and evidently Egyptian.81 Other temple staff may have included,
but would not necessarily have been limited to, the prophets, *hierostolistai*,
*pastophoroi*, sacrificers, singers, and musicians that made up the usual priestly
complement of Egyptian cults.82 A hymn to Imhotep written in the time of Tiberius
and inscribed on a doorpost of the temple at Ptah at Karnak refers to prophets,
endowment priests, a musician-priest and a steward.83

However visitors were not necessarily restricted to the traditional
functionaries of Egyptian cult. An interpreter of dreams from Kretes advertised on an
extant stela from the precinct of the Sarapieion around 200. Besides a picture of the
Apis bull, the words read: “Ἐνάπτυκα κρίνω τοῦ θεοῦ πρόσταγμα ἔχων. Ἐστὶν
ὁ κρίνων τάδε.”84 A plausible guess would be that any language barrier
between Egyptian priests and Greek pilgrims had created a market for Greek-
speaking dream-interpreters. Or perhaps the Kretan just undercut the priestly price.

80 According to the second century CE papyrus *P.Oxy. 11.1381*, which narrates how the last native
pharaoh Nectanebo II restored the worship of Imhotep at Memphis, he endowed the cult with 330
arourae (= ca. 900km²) of corn-land. The author’s authority for this story probably derived from the
priests of the Asclepieion. See Grenfell and Hunt (1915) 221ff.
81 *PP* 3.5874 (Ptolemaic period); *PP* 3.5376 (90/89–42/41).
82 Prophets, the Greek translation of the Egyptian phrase “servants of the god” were the highest ranking
priests of the cult and invariably came from sacerdotal families. *Hierostolistai* were in charge of
clothing and attending to the statues of the gods. *Pastophoroi* were carriers of sacred objects:
84 Edgar Cat. gén. (1903) no. 27567 with plate.
So the principal healing gods of Ptolemaic Egypt were in their major sanctuaries and many of their minor ones syncretic or entirely Egyptian in their iconography, ritual practice and personnel. The ways in which the Greeks perceived their gods in these contexts and their popularity among Greeks are evaluated in the next two sections.

2.5: Procedures, or, how to encounter a god

This brings us on to aspects of Greek temple medicine which I have placed under the collective rubric of ‘procedures.’

As I described earlier, the cures and advice supplied by Asklepios in Greece took place during incubation, the deliberate inducement of dreams in a temple. Incubation is subtly different from the simple occurrence of prophetic dreams, which may be dreamt anywhere, sought or unsought, and brought to a temple for interpretation only later and only if necessary. Incubation involves the systematic and planned attempt to induce a dream in a specific place, at a certain time, and often with a specific problem or question in mind. Only if it is a common and a recognised part of cult will there be provision for it in the architecture and organisation of the temples and the procedures and skills of the priest-administrators. The question is whether incubation was common or standard practice in Egyptian oracles in general and medical oracles in particular, before or after the arrival of the Greeks.

There are certainly examples from pharaonic Egypt of significant dreams from the gods, sometimes relating to infertility or health. For example the story of Petese narrates how the childless prophet of Horos-of-Re prayed to his god, followed the subsequent instructions, and in his dreams that night was told both that he would have
a son and how that son would die.\textsuperscript{35} But the only, fragile, evidence for deliberately solicited dreams from this period is a thirteenth century stela from Deir el-Medina, on which the royal craftsman Qenherkhepeshef refers to sleeping in a temple forecourt. The same person also owned a \textit{Book of Dreams}.\textsuperscript{36}

But the evidence as to whether incubation was part of Egyptian cult and in particular of healing cults before the Ptolemaic period is inconclusive. The most that can be securely established is that a ritual apparatus of oracular ‘dream-interpreters’ was a long-standing part of temple practice. These were most often the lector priests, who probably consulted dream books held in temple libraries. In such a situation the solicitation of dreams would not be uncommon. Secondly, priests sometimes dreamt in the actual temples. Both of these assertions are justified by the contents of the archive of Hor.\textsuperscript{37}

Hor was a second century priest of Isis who later came to Memphis and the ibis sanctuary at Saqqara, part of the Sarapieon complex. Among his numerous recorded dreams is the verso of text 18 (171), which commands deities and demons to “appear in a dream.” Text 13 (155) describes Hor supplicating the gods for two days, apparently somewhere in the ibis galleries of north Saqqara, before receiving an oracle in the form of a dream.\textsuperscript{38} The phraseology of these texts is similar both to an invocation of a ghost in the pharaonic period and to the third century CE London/Leiden papyrus.\textsuperscript{39} It also makes it clear that suitable spaces for incubation existed in Egyptian temples.\textsuperscript{40} It therefore seems probable that incubation existed in

\textsuperscript{35} Ryholt (1999) \textit{Carlsberg Papyri} 4 col. 8. 2-30 (probably 1000-500). The demotic verso of \textit{BM} 604 contains two stories about the magician Setne. In the second his childless wife sleeps in a temple, probably of Osiris, in hope of a dream. The writing dates to the Roman period, and so its story about a popular figure from the legendary past may show Greco-Roman influences, but not necessarily: Lichtheim III (1980) 138-151.

\textsuperscript{36} Quirke (1992) 136.

\textsuperscript{37} Ray (1976) and see esp. 131: “It is clear that the incident was deliberately provoked.”

\textsuperscript{38} Ryholt (1999) 131 n. 2.

\textsuperscript{39} Ptolemaic Egyptian temples included a pylon, courtyard, columnar halls, a hall for food offerings, smaller rooms probably used as sanctuaries and storerooms for cult equipment, roof chapels, underground crypts, the central sanctuary surrounded by a corridor, magazines, kitchens, animal shelters, workshops, scribes’ studies, administrative buildings, and dwellings for priests, other personnel, and visitors: Finnestad (1997) 189-90.
pharaonic Egypt as a part of oracular interpretation. This may often have involved answers to medical questions and appearances of the gods in dreams.91

Yet it remains extremely difficult to identify from the archaeology precisely where such activities took place and in what kind of structure. The Epidauros inscriptions place incubation in the ἄβατος but all identifications of the ἄβατος with any particular archaeological structure in Greek temples remain conjectural.92 Moreover the place of incubation in temples of Asklepios seems to have varied from site to site.93

In some Egyptian temples there are places in which pilgrims could sprinkle themselves with holy water for purificatory or possibly medical purposes – the two concepts are of course not necessarily exclusive of each other. The water had already flowed over statues (cippi) inscribed with spells and was thus impregnated with the virtue of the sacred hieroglyphs.94 Many scholars assume that the curative and purifying aspects of this procedure means that nearby rooms were used for incubation, and therefore that evidence of water implies the presence of the more elusive incubation. Water is often connected with medical cult practices, not only in the apotropaic qualities of Egyptian cippi, but also in bath installations at many sites in the eastern Mediterranean outside Egypt. It is interesting to note that just such a bath building, probably from the late Ptolemaic period, exists at Memphis, as do similar buildings at Sakha in the western delta and at Hermopolis Magna.95

There is however no conclusive evidence for the existence of purification rooms in any particular structure, let alone for their being invariably connected to

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91 This oracular form of religious medicine is very similar to some of the questions asked at the oracle of Zeus at Dodona in Epiros, where a common question was “how to be healed?”; Versnel (1981) 5.
92 The priests of the ἄβατος in Bernand (1969) no. 19 II. 3-4 are Egyptian priests in an Egyptian style temple. This does at least reveal that at Philae part of such a temple could be identified and translated as ἄβατος.
incubation. The one remaining archaeological example of a complex designed for the washing in or drinking of water made sacred by flowing over hieroglyphs is in the sanctuary of Dendera. Although most of the temple of Hathor and surrounding buildings are Ptolemaic or even in some cases Roman, the water complex dates to the earliest years of the former and possibly before.\(^96\) It has often been suggested that certain rooms belonging to much the same period which appear suitable for incubation were indeed used for this purpose, but this seems to me impossible to verify.\(^97\) Moreover the buildings known as *mammisi* may have offered an alternative location for those seeking dreams. No. 10 in the archive of Hor may have taken place in the *mammisi* of Isis.\(^98\) *Mammisi* were standardly small buildings attached to the main temple, celebrated the birth of the young child Horos, and were probably used to appeal to the gods for help regarding infertility or childbirth.

Thus the definite existence of incubation or any other medical practice involving purification cannot be demonstrated from evidence of temple structures. Dreams may have been experienced in several places depending on the status and identity of the pilgrim, their purpose, and the layout of the temple building itself.

Another means by which the procedures of healing gods in Egypt might be identified is the epigraphical and papyrological evidence.

Two texts from the archive of Hor refer to the same incident in which a highly cryptic dream-message from Isis to Hor baffles the “magicians” or dream-interpreters of different cults, until finally solved by “the magician of Imhotep, the son of Ptah, to whom they call (throughout) the entire two lands because of his magic-making.”\(^99\) Similarly a text of the Ptolemaic period claims to be a decree by the third dynasty pharaoh Djoser (here representing Ptolemy V Epiphanes) who consulted “the chief
lector-priest of Imhotep” over a famine. Thus Imhotep’s power appears to be a general oracular power rather than a specifically medical expertise in diagnosis and cure. The fact that it often takes the form of preserving or restoring health and fertility is due to the frequency and importance of these problems in the ancient world and to his reputation as a saving and gentle god rather than a chaotic or dangerous one. In the temple of his father Ptah in Thebes, for example, where Imhotep was also worshipped, he is described as: “Helpful god, coming to he who calls him, granting life to all men.”

Both Imhotep’s gentle image and his status as a deified mortal are similar to Asklepios. However Imhotep’s original field of expertise was much wider than Asklepios’, comprising the entirety of elite, i.e. written, knowledge in pharaonic Egypt, knowledge closely associated with the power and performance of heka (magic). As we shall see, even in medicine his power remains largely a mantic one: it consists of knowing the proper course of action or appeal in any situation problematic for a particular mortal.

There are two examples of Egyptians dreaming of Imhotep. The first is written on the funeral stela of Taimhotep, the wife of Psrenptah, who was the high priest of Ptah in Memphis at the end of the Ptolemaic period.

Taimhotep gave birth to three daughters, but no male child. She and her husband prayed to Imhotep, and he came to her husband in a dream, saying that in return for a great work on the site of his tomb he would give them a male child. The husband on awakening carried out Imhotep’s wishes and Taimhotep duly gave birth to a son on the Feast-Day of Imhotep, whom the boy was named after.

This account suggests a continuum between pharaonic and Ptolemaic period attitudes to illness and the gods among Egyptians. Much of the evidence cited earlier for dream interpretation in the pharaonic era concerned the problems of infertility and

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100 Lichtheim III (1980) 94-103.
101 For this and other hieroglyphic inscriptions to Imhotep see Laskowska-Kusztal (1984) 106-113.
childbirth. It has been suggested that the small temple of Imhotep at Philae dedicated by Epiphanes and Kleopatra I and apparently unused after his reign was in gratitude for Imhotep bringing about the birth of their first child, the future Ptolemy VI Philometer. There was a considerable gap between their marriage in 193 and the birth of Philometor in 186, the temple was apparently founded shortly after the latter event, and the words of the inscription perhaps also imply some connection:

“Βασιλεὺς Πτολεμαῖος καὶ βασίλισσα Κλεοπάτρα Θεοῖ. Ἐπιφανεῖς καὶ Πτολεμαῖος ὅ υιὸς Ἀκολεῖς [πατρ]” Of course infertility and childbirth also made up a proportion of all medical appeals and complaints in Greece, both in the temples and in secular medicine. Fourteen percent of the Asklepiean inscriptions from Epidaurus concern pregnancies that follow a visit to the sanctuary. Only the blind were more frequent visitors.

It is not clear whether or not Taimhotep’s dream occurred in Imhotep’s temple, or whether a dream was the expected form of the response. As noted above Egyptian cults rely at least as often upon the interpretation of unsought dreams as they do upon incubation. Taimhotep’s stela gives no real indication either way of whether incubation was routinely practised in Egyptian cults. It can be said that in both the content and manner of her dream there is nothing that is not pharaonic, and certainly nothing that might suggest Greek influence.

Incubation is certain in our second example, written in Greek in the Roman period. When the narrator’s mother fell ill, her friends went to seek help in the temple of Imhotep, and the god appeared to her in dreams and cured her with “simple remedies.” They sacrificed to him in thanks. Then the narrator fell ill, and both went to the temple. There the narrator fell asleep and had a dream identical to his mother’s waking vision. Both saw a figure of superhuman stature, clothed in shining raiment, carrying a book, who looked at the patient and then vanished. On awakening

104 Bernand (1969) no. 8.
105 P. Oxy. 11.1381 (second century CE).
immediately afterwards the patient’s fever was abated and he was shortly fully cured. The usual thanks were offered, but Imhotep was unsatisfied. He wished the narrator to write a Greek version of the ancient Egyptian text detailing his legend, which he did – a text to which this story is the explanatory preamble.106 This will make, it seems, the fame and glory of Imhotep available to a wider audience: “Every Greek tongue will tell thy story, and every Greek man will worship the son of Ptah, Imouthes (Imhotep).”

Although written in Greek for a Greek audience the god’s appearance “carrying a book” is Egyptian rather than Asklepiean in its iconography. Statues of Imhotep usually refer to his status as a scribe by showing him carrying a scroll. This rather suggests that to some eyes Imhotep is not simply Asklepios under a different name: the Egyptian god needs bilingual propaganda to extend his market range.

The best evidence for the encounters of Greek pilgrims with Egyptian healing cults comes from Upper Egypt and the sanctuary of Amenhotep and Imhotep-Asklepios at Deir el-Bahari. Amenhotep was like Imhotep a mortal architect subsequently deified.107 His funerary cult in the Thebaid area in Upper Egypt dated from around 1250 and again created a god famous for his oracular prowess and especially for his healing role.108 Evidence for Amenhotep’s cult serves to illuminate Imhotep’s, as Amenhotep is to some degree a local variant on Imhotep, and their cults are very similar. They often appear together in Upper Egypt under almost identical iconography and epithets, as in the temple of Ptah at Karnak, at Kasr el-Agouz, at Deir el-Medina, and at Deir el-Bahari; in a more widespread cult of Imhotep was worshipped alone at Ptolemais, Philae, Diospolis, and possibly Thebes.109

106 Ritner (1984) 354 correctly points out that the first person narrator of this incident is not the Egyptian Nekhantis mentioned as the author of the main text, and argues that the narrator is a Greek.
107 See Bataille (1951) xv-xvi.
108 The third century Egyptian historian Manetho calls him “τὸν σοφὸν καὶ μαντικὸν ἄνδρα”: Josephus Contra Apionem 1.236.2 = fr. 54 Manetho.
109 Bataille (1951) x.
Amenhotep’s sanctuary at Deir el-Bahari was sited in the pharaonic-period temple of Hatshepsut. This had been abandoned for around five generations until Amenhotep’s cult installed itself in two rooms and, probably, the upper court, sometime before 261/260. The first inscription recounting a healing by the god dates to this year, made by a Greek called Polyaratos: 110

In the reign of Ptolemy, son of Ptolemy, and of the son of Ptolemy?, year 25, month Khoiak, Polyaratos has consecrated this in witness of a miracle of Amenothes (Amenhotep). I had been the victim of a very serious and dangerous illness, which had lasted eight years. [I had muscles contracted? for a long time), across all my body...........and I was suffering extraordinary pains(?)]........and what is more...........and I had recourse to doctors and they were unable to make me well. But I had learnt from many people that the good works of Amenothes were numerous, that he was compassionate, and that numerous were those in despair who, thanks to him (?), had obtained healing.......being myself in despair I fled to the sanctuary of Amenothes as a suppliant and, Amenothes having helped me, and having been obviously taken care of by him and returned to health, I wished as a way to honour him, both Amenothes himself and the other gods associated with his altars and with his cult, to celebrate by writing their miraculous intervention in favour of those who present themselves in the sanctuary of Amenothes, struck by some illness,....in regard to which they know that ........obviously by the god who guides. 111

Polyaratos turned to the god after physicians had failed him, and this is therefore not a case of a individual’s preference for temple medicine over secular Greek medicine. This pattern fits that of Greeks elsewhere. 112

The Greek pilgrim perceived Amenhotep as a beneficent god specialising in healing. Amenhotep’s reputation must either already have been prevalent among Greeks in the area, or Polyaratos owed his information to Egyptian informants. In either case the information about this out of the way sanctuary must have been ultimately derived from Egyptians proselytising to Greeks on Amenhotep’s behalf.

110 Bataille (1938); translated here from the French.
111 The “god who guides” is insecure. Bataille (1938) 131 very cautiously suggests it should read “the liberating god.”
112 Parker (1983) 249.
The inscription indicates that Polyaratos was cured by a miraculous intervention after appealing to the god. This sounds like an overnight cure rather than a delayed improvement or priestly advice on remedies, though the latter in particular cannot be ruled out. Several more inscriptions at this site from the Ptolemaic period refer to cures and requests for help against sickness. Andromachos the Makedonian, the "ἐργαζόμενος μοσθόν" and author, at different times, of inscriptions 43 and 48, explains in his second missive to posterity that he arrived when ill at the sanctuary, or fell ill there, and was helped by the god "on the same day." On the other hand invocations on behalf of someone else like that of no. 86 ("I ask for my uncle swiftly to be healthy") suggest prayer rather than oracular or incubatory advice.

The iconography of the site, especially the hieroglyphics, indicates that an oracle was present. Whether this sometimes also involved incubation is unclear. The fact that several sufferers who praise Amenhotep for miraculous and swift interventions evidently remained on the site until they were cured suggests that they may at least have slept in or near the temple.

A similar situation is implied by the only evidence about Imhotep and Greek patients from Memphis, a fragmentary letter in which the author appears to refer to someone he knows who is ill and in the Memphite Asklepieion. Again the Greek sufferer goes to, and remains in, the temple of the god. This does not demonstrate incubation conclusively, but it counts against the possibility that pilgrims are only going to the temples to get their dreams interpreted by experts. It is much more likely that visits to the temple to appeal to the god resulted in cures and probably dreams experienced and deliberately sought in the temple. The clientele that the Kretan dream-interpreter hoped to attract from among Greek pilgrims who came to the Memphis Sarapieon

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113 Inscriptions in Bataille (1951). There were many similar inscriptions either from the Roman period or dateable only to the Greco-Roman era as a whole.
115 Occasional suggestions of 'sanatoria' near Deir el-Bahari or in the nearby Valley of the Kings are highly speculative and based on unproven assumptions about sanatoria characteristics: see above p. 96.
116 P. Petrie 1.30 (third century).
almost certainly experienced their dreams during on-site incubation, as their dreams could have been interpreted by private interpreters – rather than Egyptian priests – without an actual visit to the temple.

The cures of Sarapis recorded by Demetrios of Phaleron are probably earlier than the establishment of the Alexandrian Sarapieon. They might have taken place in Memphis, but the more likely location is Osiris’ temple at Canopos on the coast, not far from the site of Alexandria. Not only was this famous specifically for cures but Strabo mentions that there were “divine instructions issued there.” This implies that Sarapis healed both through direct miracles and in a more round-about way through advice given in the dreams, perhaps after interpretation by priests.

In a letter of the third century Zoilos of Aspendos, in Asia Minor, writes to Apollonios, a high ranking Egyptian official. Zoilos has recently been in Alexandria, where the following incident probably occurred:

As I was performing rites to the god Sarapis for your health and success with king Ptolemy, Sarapis repeatedly ordered me in my sleep to sail over to you and reveal to you his divine order, namely, that a temple and precinct be built and dedicated to him in the Greek quarter by the harbour, and also a priest appointed and sacrifices be offered on your behalf. When I asked that he release me from this task, he plunged me into severe illness and I was in grave danger. Then I prayed to him, promising that if he would cure me I would undertake the service and do as he recommended. I was speedily healed [...]. So you will do well, Apollonios, to follow the god’s orders, so that Sarapis may be merciful to you, rendering you much greater and more honoured in the eyes of the king as well as preserving you in bodily health [...].

Zoilos’ pious obedience to the god is not entirely selfless. Sarapis, as noted above, is a cult strongly associated with and supported by the Ptolemies, particularly at this early stage of the third century. The building of a sanctuary to Sarapis is a declaration of loyalty, like the inscriptions at Philae, and may advance his career. It is interesting,

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117 17.17.
118 PCZ 1.59034 (257). Translation Lewis (1976) 45.
given this non-medical motive, and the god’s non-medical request, that his appearance should nonetheless be in a medical context. It seems that representations of Sarapis already stress his beneficence, and in particular his medical aid. He is a god to whom one standardly sacrifices for the good health of oneself and others.

The author of another letter is searching for some simple (but apparently rare) foodstuffs prescribed to him “by the god.” This is probably a reference to Sarapis of the Memphis Sarapieon and would have involved an oracle or dream.\(^\text{119}\)

Some conclusions about procedures

The scarcity of the evidence makes it both difficult and risky to compare Greek and Egyptian perceptions of temple medicine. In what follows I shall concentrate mainly on Greek views of the gods as this comprises the majority of the evidence. I shall further cautiously suggest some interpretations and assumptions based upon the general background of Greek and Egyptian modes of divine healing.\(^\text{120}\)

In both Greece and Egypt entrance into a temple required standards of purity, though these varied widely. The Epidaurian Asklepieion in Greece required only that the pilgrim wash and offer a simple sacrifice.\(^\text{121}\) This was evidently a general requirement, as indicated by the presence of springs and wells at every known site of an Asklepieion.\(^\text{122}\) In contrast the proscriptions laid out in a Ptolemaic law for the Asklepieion at Ptolemais are considerably stricter, as are purity laws for most Greek cults.\(^\text{123}\) Egyptian temple rites about purity tend to be elaborate, and non-priests were

\(^\text{119}\) *PCZ* 3.59426 (third century). The author of *PSI* 4.413 (third century) is similarly looking for medical ingredients, but his prescription is from physicians.

\(^\text{120}\) One notable feature of both Greek medicine, at least in the classical and later periods, and Egyptian medicine is that they only rarely seem to invoke the notion of illness as a punishment sent by the gods for wrongdoing. Both employ the much broader notion of pollution, which often does not include the element of personal responsibility and moral enforcement: one can be polluted by accident, by necessity, as with menstruation and childbirth, and by other people through curses and spells. The absence of sin as an explanation contrasts strongly with the Greek settlers in Lydia and Phrygia: see Chaniotis (1995).

\(^\text{121}\) Lewis (1976) 35.


\(^\text{123}\) Baillet (1889); Edelstein (1945) II 149 n. 16.
only rarely allowed near the cult statue itself. In both cultures concepts of pollution, purification, disease and medicine are closely linked. Plato says that the cure or purification of bodies and souls by means of fumigations and the sprinkling of lustral water, whether by god, prophet or physician, is essentially the same procedure.

At the temples discussed in this chapter, with the possible exception of the newly built Alexandrian Sarapieon, the cult practices and purificatory rites would almost certainly have been Egyptian.

Once access to the god had been gained, the form of the appeal for assistance in infertility or illness would in both cultures have taken the form of oracular inquiry or prayer. The extent of the use of incubation, especially for solely medical purposes, remains largely a matter of supposition, but the use of dreams to guide healing was common to both cultures and some of these dreams could and did take place in temples. In the pharaonic period of Egyptian cult sleeping in a temple for the purpose of dreaming did probably occur. Certainly the evidence of the archive of Hor, the dream-cures described by Demetrios of Phaleron, and the Kretan dream-interpreter make it clear that incubation was planned for and practised on Egyptian temple sites in the Ptolemaic period.

Divine intervention for illness and infertility might take the form of a miraculous appearance and/or cure, the prescription of simple remedies, or non-medical instructions from the gods on how to win their help, avoid their anger, or recompense them properly. These methods and combinations of them appear not only in the

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125 Cratylus 405a-c.  
126 In the Hellenistic period such remedies seem as a rule to have been considerable less complex than the instructions of Sarapis received in dreams by Aelius Aristides in the second century CE, for example at Oratio 49.37 and 48.47 c.f. Artemidoros Onirocriticon 5.89. The often complicated instructions given to Aristides are largely a reflection of the contemporary medical emphasis on complex regimen. Moreover the Roman Sarapis has been further Hellenised and his abilities extended from his Ptolemaic and pharaonic origins.
Egyptian examples discussed above but also in the inscriptions from Epidaurus for Asklepios’ cult there.

The similarity of the cures carried out by Imhotep-Asklepios and Sarapis for both Greek and Egyptian sufferers testify to a similarity in Greek and Egyptian cultural expectations of both the healer and the divine. Part of the power of the healing gods came from divine oracular knowledge and the capacity of divinity to do the miraculous, linked to the conception of disease as being itself supernatural. This was expressed as an instantaneous cure. Part of it came from the procedures and assumptions of folk medicine and much of pharmaceutics among professionals. Hence the prescriptions of simple remedies. Both forms are often negotiated in both cultures by the reciprocal exchange of favours between god and pilgrim.

But there are ways in which Greek expectations, particularly of Imhotep-Asklepios, may have differed from Egyptian expectations.

In Egypt the number of priests who interpret dreams in the archive of Hor suggests an occupation in demand.\(^{127}\) It may have been more routine to consult the dream-interpreters in Egyptian cult than it seems to have been at Epidaurus, where the dreams were generally self-explanatory.

Where Greeks record their experiences of the god they seem more likely to refer to incubation or at least to explicit intervention and instructions for healing experienced in dreams, often on site. I therefore very tentatively suggest that deliberate incubation may have been a more standard procedure for Greeks seeking healing than for Egyptians, for whom the procedure was a variant on the widespread and ancient emphasis on the interpretation of oracles and uninduced dreams, and was not particularly linked to medicine.

This may also have affected the nature of the dream experienced. In the Egyptian examples above the god carries out a miraculous cure in return for a specific favour. The cure necessitates divine power but is not noticeably different in

\(^{127}\) See p. 91 and n. 99. The ὀνειροκρίτης was important in the Delos Sarapion.
procedure to a financial or military miracle. On the other hand Asklepios’ activities, at least in the classical and Hellenistic eras, seem to have concentrated almost exclusively on medical problems. He is identified with healing to a greater extent than any other Greek or Egyptian god. Thus Greeks expected distinctively medical prescriptions and actions from Imhotep-Asklepios, while for the Egyptians these may have been a rarer occurrence.128

Similarly I argued earlier that part of the Greek representation of Asklepios involved the dramatic procedure of traumatic and indeed internal surgery, a major part of ‘rational’ medicine. As the Egyptians certainly practised traumatic surgery, it may be that those injured dreamt of Imhotep removing arrow-heads in much the same manner as Askepios does in E423.12, 30 and 32 of the Epidauros inscriptions. But the existence in Greek medicine of a surgical tradition for non-traumatic conditions would have found no parallel among Egyptian preconceptions, and this may have reduced the frequency of surgical expectations and dreams among Egyptians. Although Imhotep appears in the anonymous narrator’s dream his intervention is limited to a look, contrasting sharply with the physical activity of Asklepios imagined by the Epidauros pilgrims. For example at E423.27 a man dreamt that Asklepios held him down, operated on his abdomen and removed an abscess, and stitched him up. One would then assume that this type of imagery would be more prevalent among Greek pilgrims, perhaps especially first generation immigrants. They were accustomed not only to secular Greek methods of healing but to having these reflected in Asklepios’ behaviour.

It should however be noted not only that the evidence of Egyptian perceptions is far too limited to reach any definite conclusion about them, but also that even in Greece the use of the procedures of contemporary physicians was characteristic only of Asklepios, not of Greek healing gods in general. There is no evidence for any such behaviour on the part of Apollo: a god whose medical expertise is a facet of his

128 One text of Hor’s may have involved divine medical instructions. Text 28 boasts that “Isis made a remedy (pekhret) for the queen.” These instructions were either arrived at through an oracular dream or inspired by the goddess: Ray (1976) 135 c.f. Text 32 and p.104.
prophetic and purificatory knowledge does not resort to actual medical procedures. It may be that in the alien and exotic context of an Egyptian or Egyptianised temple to Asklepios-Imhotep, the expectations of Greek pilgrims were correspondingly affected.

Expectations of other gods would also have been influenced by their attributes and reputation. Artemidoros’ *Onirocriticon* associates Sarapis’ appearance in a dream with the coming of death. This may be partly a development of the Roman period, when the god’s Osirian and chthonic aspects are more evident than they are in the early Hellenistic period. But if the origin of this was Sarapis’ image in the Hellenistic period it reveals a god who could be perceived in terms of a god of prophecy and, in particular, of the foreknowledge of death and illness, rather than a god who would employ technical expertise to heal.

The cultural context of the local environment would have been a factor in the perception of the god, particularly if the pilgrims lived locally. Part of the purpose of the Epidaurian inscriptions themselves must have been to prepare pilgrims to have similar experiences.

The attributes strongly identified with Sarapis in Alexandria appear to have been more Hellenised than in Memphis. Certain features of the Egyptian cult of Osiris-Apis, such as the animal iconography and worship, were lacking from his cult in the new capital, though it is hard to say what impact this had on the nature of his cult or his clientele. Furthermore Alexandria was a city dominated by Greek culture and Greek versions of Egyptian culture, and contained several high-status medical innovators and innovations. The Alexandrian Sarapieon therefore seems considerably more likely to have experienced pilgrims dreaming of internal operations than its counterpart in Memphis.

129 Especially 4.80, 5.92, 5.93, 5.26, 5.94.
Thus the question of temple practices and procedures both influenced and depended on those pilgrims who sought their aid. Ethnicity and cultural affiliations influenced the expectations of pilgrims, just as it influenced which gods they sought out in the first place. The behaviour of pilgrims was also affected by economic, social, geographical, and even political context.

2.6: Pilgrims and popularity
The presence of the Kretan dream-interpreter advertising in Greek at the Memphis Sarapieon would certainly seem to signify that Greeks – including those who spoke only Greek – made up a not inconsiderable proportion of the Sarapieon’s clients, on a scale to make it worth a freelance dream interpreter’s while.

Moreover Sarapis was not, of course, the only healing deity resident in Memphis. Indeed the number and placing of anatomical casts on the site indicate that Thoth joined Imhotep-Asklepios, Sarapis, Isis, and the most important god in Memphis, Imhotep’s father Ptah, as deities to whom people journeyed in search of health and healing. Those who gained replies or cures to medical matters dedicated ex votos in gratitude. Large numbers of these, dating from the Ptolemaic era, have been found in the area behind the temple terrace of the Sacred Animal Necropolis and also in the Upper Baboon Galleries.130 Therefore we do definitely know that large numbers of pilgrims came to Memphis in search of help or protection in matters of their health, and that in their thank-offerings they employed a method (the ex votos) common to both Asklepiean and Egyptian cult.131

The popularity of Sarapis depended largely on the god’s connections with the Ptolemies, and also on the previous version of the cult at Memphis. Zoilos’ letter cited the consequent approval of the king as an incitement to building a temple to Sarapis ὃπως ἄν εὐλογήσῃ σοι ὑπάρχων ὃ Σάραπις πολλῷ σε μέζῳ παρά τῷ

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Dedications to Sarapis on behalf of the king and queen are common in the extant papyri, while petitions from the inhabitants of Memphis to the Ptolemies often included prayers to Sarapis for the Ptolemies’ health. More specifically Sarapis and Isis were identified as the divine counterparts of the ruling Ptolemaic pair. They are the sole divinities to be named with the king and queen in the oaths recorded in the papyri and sworn by both Greeks and Egyptians, and often appeared as a pair in dedications addressed simultaneously to the ruling couple, in a proportion unequalled by any other deity.

The connection between the worship of Sarapis and Isis and the court meant that some Egyptians also paid some attention to the god in this Hellenised form, in addition to those Hellenised Egyptians who adopted Hellenic attitudes and gods. But Egyptian connections with Sarapis remained far fewer than those of the Greeks. Hellenistic period documents in Egypt were often sworn in the names of Osiris and Isis rather than Sarapis and Isis. This usage, very rare outside Egypt, preserved the association with the Ptolemies but used the Egyptian form of the cult rather than the Hellenised one.

Sarapis signifies Hellenes in an Egyptian context, not Hellenised Egyptians. The actual extent of his popularity even among Greeks remains a matter of some debate, but it is clear that his attractiveness reached a peak relatively early in the Ptolemaic period and then declined somewhat as the political imperative for his existence lessened and the Ptolemies’ active patronage of the cult waned. Onomastic evidence shows numerous Sarapions in the second generation of Greek immigrants, but not the increase in this number that there would have been if sons had continued to be named for the god as well as for their fathers and grandfathers. In contrast,
Isis and Horos were popular names in the Hellenic population throughout the Ptolemaic period.

It is particularly difficult to determine Sarapis’ standing as a healing god. This problem is closely related to that of the strength of strictly Greek versions of the Asklepios cult in Egypt, rather than to the Egyptian buildings and ritual of Imhotep-Asklepios.

Crucial to both is the letter, cited above on p. 138 which refers to instructions of “the god.” The god in question is identified by the papyrus’ editor C.C. Edgar (1928) as either Sarapis or Asklepios, and he favours Sarapis at Memphis. If this is correct it would mean that in Ptolemaic Egypt the term “the god” in a healing context has superseded its more usual referent Asklepios, who was the most popular healing god in the countries of the Hellenistic world.

In support of this there is surprisingly little evidence to point to any widespread cult in Egypt of Asklepios as Asklepios. Most notably of all there is little sign of his presence in Alexandria, either on his own account or as Imhotep-Asklepios. The “Great Asklepieon” referred to the ancient Egyptian cult in its ancestral home of Memphis. There Imhotep-Asklepios’ importance and success among both the Egyptian and Greek inhabitants is demonstrated by the popularity of the names Imouthes, Peteimouthes, Asklepiades and Asklepias.

But although signs of Greek cults of Asklepios are rare, they are not totally absent. In 257, while at Boubastos in the Delta, Zenon received a letter of recommendation from one “Philonides, priest of Asklepios.” There is no hint of Imhotep and a Greek priest of a local temple to Imhotep seems less likely than a

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139 PCZ 3.59426 (third century).
140 The only other possible candidate is Apollo, but medical prescriptions by “the god” count against this identification.
141 The only example I know of is a small statue base of the early Ptolemaic period: Ασκληπιάς (e.g.) και Ασκληπιάς (e.g.) See Fraser (1972) II 352 n. 148.
142 Thompson (1988) 209. One wonders how many of the children called Imhotep or Asklepiades in Memphis were the result of prayers for conception to that god: see Taimhotep’s son Imhotep above.
143 P. Zen. Pestm. 42 (257).
shrine of Asklepios geared to a Greek community. The Delta was a region of heavy Greek immigration.

Secondly, the Greek τόπος of Ptolemais in Upper Egypt contained a sanctuary to Asklepios which dated back to the third century. The inscription that records its foundation also carries a variant on the traditional Erythraean hymn to Asklepios, which makes rather more of the holy waters of the Nile and the fame of Egypt than the original version but contains no mention of Imhotep. This suggests a Greek Asklepios, complete with his family of medical attributes, just as at Philae an Egyptian Imhotep appears together with his Egyptian family.

The presence in Upper Egypt of an important temple to Asklepios contrasts with the apparent absence of a Greek Asklepios in Alexandria. I cautiously suggest that Asklepios’ cult in Egypt, in its Greek form, was relatively small scale. This was because it had to compete in Egypt with the already widespread and established Imhotep, not to mention the well-connected Sarapis. Unlike the latter Asklepios was not patronised by and associated with the Ptolemies, and so the popularity of Asklepios in Egypt may have an inverse relationship with the presence and popularity of Sarapis. The cult of Asklepios was chiefly a matter of small local temples in areas and towns of concentrated Greek colonisation, while in Ptolemais it probably also reflects the assertion of cultural identity by a relatively isolated Greek population.

The changes and continuities in Asklepieia outside Egypt are not the concern of this chapter. It remains totally unclear to what extent any such changes influenced cults in Egypt of Asklepios as Asklepios. As alterations in the god’s characteristic behaviour tended to reflect contemporary developments in Greek medicine, Asklepiea in Egypt may have been little affected. In Ptolemais, for example, Asklepios was distant from the intellectual innovative Πτολεμαίος of Alexandria. No notable intellectuals

144 In CE 97 a temple to Asklepios and Hygieia was build on the site of this sanctuary.
145 Baillet (1889), who thinks that the presence of Hygieia at Ptolemais supports the contention as to Asklepios’ Greek nature here, but this is not conclusive. Hygieia was also cited by Greek pilgrims at the Egyptian sanctuary of Deir el-Bahari, see n. 149 below.
and physicians are recorded for the southern city, away from the patronage of the court.

Much of what has been said about Sarapis applies also to his wife Isis, particularly in regard to the Ptolemaic connection and a Hellenisation of her cult. Isis was reinvented as a sort of pan-oriental goddess of mysterious Eastern origin and power, but of universal beneficence. A late Ptolemaic hymn series to Isis inscribed on a Fayum temple is attributed to a priest named Isodoros. One hymn associates Isis with explicitly foreign goddesses such as Astarte, Leto, Demeter and Aphrodite.\textsuperscript{146} The universalisation of Isis that took place in Greek perception suggests that her Hellenised self diverged from the Egyptian goddess who appears in the dreams of Hor, though to the Greeks she remained an Egyptian goddess.

The evidence so far considered shows clearly that many Greeks readily accepted and utilised Egyptian temples and practices, perhaps in preference to traditional Greek style shrines in Egypt that were inevitably of lesser size, antiquity and reputation than the main Egyptian sites.\textsuperscript{147} Moreover the attraction of Egyptian formats to Greeks was not limited to dual-identity gods, or even to readily syncretised gods like Isis. Many immigrants also appealed to deities who lacked a corresponding Greek identity.

One such god was Amenhotep at Deir el-Bahari. Although Asklepios-Imhotep was also present there and although the two cults were very similar, Amenhotep was at Deir el-Bahari the more important god, due to a greater popularity in the region where his cult originated.\textsuperscript{148} Greek proscynemes to both gods and to Hygieia (as Asklepios-Imhotep’s wife) exist at the site, but there are far more directed to Amenhotep than to Imhotep.\textsuperscript{149} Amenhotep established his reputation as a healer

\begin{footnotes}
\textsuperscript{147} Pausanias 1.18.4: the Memphite Sarapieon is the most ancient in the world. See also 2.27.6.
\textsuperscript{148} Bataille (1951) x, based on onomastic evidence.
\textsuperscript{149} Of the Greek inscriptions from the Ptolemaic and Roman periods eighteen are proscynemes addressed to Amenothes, nine to both Amenothes and Asklepios (Imhotep), and two to Asklepios (Imhotep) alone. Two inscriptions also mention Hygieia.
\end{footnotes}
among the immigrants under his own name, albeit transliterated into Greek as Amenoth. A third century book of maxims attributed to him, the 'Αμενώ ου ἱροθήκας, found at Deir el-Bahari, is of Greek origin and derives from traditions of the Seven Sages. Evidently his indigenous and Theban aspect – Egyptians sometimes identified him as the author of the nationalistic text *The Oracle of the Potter* – did not discourage many local Greeks. Only three of the signed texts suggest authors from beyond Thebes, and even those are probably temporary residents in Diospolis or Memnonia.\(^{150}\)

Admittedly it is always difficult to distinguish ‘tourists’, Greeks who come to important Egyptian temples out of curiosity or a combined architectural and historical awe, from more ‘genuine’ pilgrims. Yet some of Amenhotep’s visitors are certainly among the latter, for example nos. 36, 74, and 48.\(^{151}\) The pilgrims include both Greeks and Egyptians, though the former predominate. The extant inscriptions must represent a small proportion of the actual number of visitors, since they do not include effaced inscriptions, illiterate visitors, and most Egyptian visitors. Few of the latter signed walls before the Roman era and indeed only three demotic prosynemes are known from the entire Ptolemaic period.\(^{152}\)

The pilgrims at Deir el-Bahari were apparently of relatively low social status compared to the high status politicians and officials who tended to gain access to the remote site of Philae. Those who thought their occupations worthy of note include an “ἐργαζόμενος μισθών” and “Σωλωσ ὁ ιατρός.”\(^{153}\) The doctor of no. 65 is of uncertain date – unfortunately it is rarely possible to distinguish between Ptolemaic and Roman period inscriptions.

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\(^{150}\) Bataille (1951) x.

\(^{151}\) Prosyynesmes indicate religious feeling. The tourist trade around ancient Egyptian monuments does not really seem to take off until the Roman period. Most of the Greek inscriptions in the Valley of the Kings and the Memnonia date from after the Ptolemaic period.

\(^{152}\) Bataille (1951) xvi.

\(^{153}\) No. 43 and the same person at no. 48 (Ptolemaic); no. 16 (third or second century).
The cult of Amenhotep was not the only Egyptian god to attract Greeks in search of healing. A letter of 132 from the priests of the crocodile god Sochnopaeos and Isis Snephorses and associated gods, at Sochnopaei Nesos, to the very high-ranking 
strategos Apollonios, mentions his salvation from sickness by those gods.\textsuperscript{154} Philadelphos himself is said to have appealed to the Theban god Khons for relief from sickness.\textsuperscript{155}

All of this is relevant to the implications of the use of Greek names and the Greek language in the founding inscriptions of the temples at Philae and elsewhere. Is it the case that the Greek names imply that the gods in question are thought of in Greek ways? Or is it rather simply a matter of linguistic necessity due to only a tiny minority of Greeks speaking demotic, let alone being able to read hieroglyphs?\textsuperscript{156} I would argue that the above evidence indicates that at least some members of the immigrant, largely self-sufficient minority of Greeks in Ptolemaic Egypt did not stop at identifying Egyptian gods with their own, but adopted specifically Egyptian deities, characteristics, and cultic practices in preference to Greek ones.

Where dual identifications did exist, the relevant attributes – such as healing – sometimes belonged only to one identity and culture, but attributes seem to have flowed from one identity to another. Pharmaceutical innovations attributed to Memphis several centuries later by Galen are said to derive from the temple of Ptah, the site’s most important cult.\textsuperscript{157} Galen uses the name of Ptah’s equivalent Hephaistos, not a god noted in Greece for his pharmaceutical interests. Similarly Isis’ reputation for medical expertise among the immigrants was not diminished by her

\textsuperscript{154} P. Amh. 35 (132). Isidoros’ hymn 3.30, 33 (Vanderlip 1972) links Isis to two regional cults of Sobek.

\textsuperscript{155} Bataille (1951) xvi. Khons’ appearances in the Ebers medical papyrus (p. 19 n. 64) suggest that appeals to this Theban god worked on the Sakhmet model of turning away wrath.

\textsuperscript{156} The reactions of many Greeks to Egyptian temples would have been affected not only by their inability to read the hieroglyphs, which most Egyptians were also unable to do, but probably also by a lack of comprehension as to the actual role of the hieroglyphs. That they nonetheless found them impressive is demonstrated by the attempts of several visitors to the temple of Amenhotep at Deir el-Bahari to draw their own: Bataille (1951) xxix.

\textsuperscript{157} De compositione medicamentorum per genera 5.2 (13.778 Kühn).
identification as Aphrodite. Conversely Sarapis’ healing aspect was a largely Hellenic variant on Osiris’ cult.

There is no reason to think that the penetration of Egyptian cults by Greeks was matched by a corresponding interest of most Egyptians in Greek-style temples and rituals. Of course, as usual it is sometimes impossible to guess the degree of Hellenisation involved in the use of a Greek name by people either of dual ancestry or ambitious to succeed in a culture dominated by Greek language and cultural expectations.

The Egyptian elements in Alexandria’s appearance, such as the sphinxes and obelisks removed from the deserted pharaonic sanctuary of Heliopolis and the massive, pharaonic-style statues of its rulers, represented the co-optation of Egyptian motifs and reputation by and for the Hellenic world.\textsuperscript{158} Egypt had already had an identity and nature of its own in the minds of most Greeks even before the conquest of Alexander. Moreover in many contexts this was a high status identity, a byword for age, stability and secret wisdom. From Homer onwards Egypt had represented one of the first versions of Western culture’s notion of the mysterious East. It came to stand for a kind of power and knowledge subtly other from that familiar to the Greeks, and to be the exemplar of ancient civilization.\textsuperscript{159}

Alexandria’s principal temples were Greek or syncretic in cult, and almost exclusively Greek in appeal. In the Egyptian sector of the city, Egyptian temples would have served their community in much the same way as they had always done and as Egyptian temples outside Alexandria were still doing. In particular lower status, less Hellenised Egyptians had no incentive to visit the foreign temples, and as remarked above Sarapis was not particularly popular among Egyptians. Conversely most Alexandrian interest in Egyptian cult probably centred round the Sarapieon and its associated sanctuaries, or the famous Egyptian temples of Memphis – there is an aspect of philorientalism to much of Greek interest in Egyptian cults.

\textsuperscript{158} Empereur (1998) 75, 76.
\textsuperscript{159} See chapter four.
The social status of the pilgrims to the major sanctuaries has so far been touched on only briefly, and is now examined in more detail.

According to Lewis (1986) 71-2 the costs of visiting important Egyptian sanctuaries included an entrance fee to the sanctuary, a purification fee, an incubation fee, a fee for dream interpretation if a dream was experienced, the costs of drugs if these were advised, and food and souvenirs available from sellers on routes between the temples. Given the difficulty in demonstrating the practice of incubation I am not convinced that the existence of all these expenses is proven. But private operators like the Kretan dream interpreter would undoubtedly have charged for their services, and the need for translation would have forced many Greeks to take it up.

It is nonetheless certain that the costs of temple medicine did not render the practice exclusive to the rich and leisureed. All the evidence indicates that in the cult of Asklepios expenses beyond a simple offering to the god were dependent on social pressures and thereby proportionate to the pilgrim’s wealth. A mime of Herondas set in the temple of Asklepios on Kos suggests that its average visitors were owners of one or more slaves, but were certainly not noticeably wealthy or well-educated. The cult was popular among women, and suppliants at the Athenian city Asklepion were of variable and often low social status, although after the state established control a drachma was probably charged on each occasion. Admittedly visiting a major sanctuary involved the time and sometimes expenditure of travel, an important loss to those whose living depended on their ability to work, but any remotely serious injury or disease would be even more disabling. It was noted above that the large numbers of anatomical ex votos found at Memphis indicate an equally large number of visitors to the shrines, probably for healing.

However the less well-off of both cultures were probably fairly infrequent visitors to the principal sanctuaries of Egypt. This applied particularly to those who made a

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160 Herondas Mimiambi 4. Two women apologise to the god for sacrificing a cock rather than an ox.
living from farming the land or who did not live close by. Instead their interactions with the gods primarily involved local temples and household altars. This explains the local origins of the low-status Greek visitors to Deir el-Bahari, and perhaps also suggests a role for Philonides and his little-known temple to Asklepios.

A typical example of the kind of local shrine that most people in the countryside would have depended on can be found in the records of Kerkeosiris in the second century, preserved in the archive of the village scribe Menkhes. Among the village’s fifteen Egyptian shrines were two to Isis, both relatively unimportant as neither owned any land. 162

Such small local shrines would have been by far the commonest loci for appeals to the gods by people of low status and income, including appeals for healing and continued health. Their supplications would be likely to involve small offerings, but the existence or extent of incubation cannot be guessed at.

In addition to village temples there were many domestic shrines or altars, both to Isis and Imhotep, erected in private homes, a personal and permanent link to the god and his protection. Sometimes such shrines were hired out to the sick or those in search of oracular guidance. 163

Any dreams that resulted, or that arrived unsolicited, would be interpreted cheaply by the recipient, folk experts, or possibly, if available, by the local part-time priests. An early Egyptian dream book explains the symbolic meaning of dream incidents. For example, “If a man sees himself in dream looking out of a window, it is good; the hearing of his cry by his god.” 164 This might suggest a do-it-yourself approach to dream interpretation, but given the general illiteracy of most of the Egyptian population such texts were more likely to be the property of dream-interpreters themselves than available to the laymen. There may however have been lower status, less expensive dream interpreters outside in the lesser temples or outside the temples altogether. Even in the Memphian Sarapieon Ptolemaios son of Glaukias,

162 P. Tebt. 1.88 (115-114). Crawford (1971) 88 makes the total thirteen shrines.
163 Hurry (1928) 104.
the religious recluse, seems to rely on his own dream interpretations. His archive also reveals the importance of dreams as a guide to action and belief in a religious and largely Egyptian community.

To sum up, for Egyptians in Ptolemaic Egypt temple medicine continued much as before. Since there was no political repression of Egyptian gods or temples, and no economic changes sufficient to have enforced large scale changes or cutbacks in practice, Egyptian shrines would have continued to exist in the countryside and towns according to which gods and associated resources were available.

For Greeks in Egypt the temple medicine of the Egyptian cults provided alternatives, enhanced by their mythic reputation as centres of ancient and arcane learning, to gods in more familiar guises. The degree to which they resorted to the major sanctuaries would mainly depend, as with temple medicine anywhere, on economic and geographic constraints. Local cults would have received more custom, and the need for temple medicine might have accelerated the process of cultural assimilation outside the three Greek cities, with their separated populations and access for the Greeks to their own cultural resources. The village of Kerkeosiris in the year 115-114, with a total population of around fifteen hundred, had a total of fifteen shrines to nine Egyptian gods. These included three shrines to Thoth, two of which were described in a contemporary demotic papyrus as shrines of Hermes, and a crocodile god under a Greek name. At least two Greek shrines, to Zeus and the Dioskuri, are also known to have existed. In the Fayum the Dioskuri were sometimes identified as the twin form of the crocodile god Sobek. Kerkeosiris illustrates how religious differences and religious assimilation could exist simultaneously.

165 He records his dreams in e.g. UPZ 1.77 (161-158) and 78 (159) c.f. 79 (159). See Lewis (1976) 48-50.
2.7: Interactions

The relatively wealthy Greek immigrants provided a new and no doubt lucrative market for the Egyptian temples, which was also a means to greater social and political status and security. I argued earlier (pp. 73-4) that Egyptian priests of the major temples at Memphis and Thebes were willing to corroborate and play upon Greek preconceptions of Egypt’s pre-eminence and antiquity. ‘Priests’ in this context probably means lector priests, the temples’ scholars and recorders. At Memphis in particular, and to a lesser extent elsewhere, expatriate Greeks would have resulted in many such priests who were able to speak Greek and were familiar with much of Greek culture even before the Hellenistic age. Herodotos’ informants come from precisely this background.167

The advent of Greek rule would have increased the advantages of this pre-existing tendency as the onus was on Egyptians to adapt in certain areas, particularly in that of language. Bilingual documents, the norm in Soter’s era, were largely replaced by Greek ones in the administration of Philadelphos.168 On the other hand, high-ranking Egyptian priests could utilise Greek preconceptions and expectations in order to reinforce the status of their own culture, institutions and officials – i.e. themselves.169

Even before the Ptolemaic period there was no bar to Greeks working in Egyptian cults, as Ariston’s case revealed. And the Ptolemaic period itself saw a few high-ranking Greek priests, or possibly Hellenised Egyptians, in certain cults. Recluses like Ptolemaios were also present in Egyptian sanctuaries, even though ethnic tensions persisted.170 But by and large Greek workers in Egyptian temples remained

167 Herodotos 2. 3: ἡκονσα δὲ καὶ ἄλλα ἐν Μέμφι ἐλθὼν ἐς λόγους τοῦ Ἱεραίτου. καὶ δὴ καὶ ἐς Ἡλίου πόλιν ὁτῶν τούτων ἐνέκεκ ἐτρακόμης. ἐθέλων εἰδέναι εἰ συμβήσοντα τοῦ λόγοις τοῦ Ἴερα ἐν Μέμφι. οἱ γὰρ Ἡλιοκολιτά λέγοντα Αἴγυπτιον εἶναι λογιστέται.


169 Manetho, the high priest from Heliopolis, wrote a history of Egypt in the language of its conquerors in an attempt to Egyptianise Hellenes by Hellenising Egypt.

170 UPZ 7 (163): Ptolemaios’ letter of complaint says he was assaulted because he was a Greek.

* Ῥημας τε καὶ ἐς
an anomaly, and those that did exist seem essentially to have led fully Egyptianised professional lives.

I suggested above that incubation, especially for medical concerns, may have been commoner in Greek culture, and that the kinds of dreams experienced by Greek pilgrims may have included surgical experiences unfamiliar to any priestly interpreters. It seems likely enough that the expectations of Greek pilgrims were subtly different from Egyptian ones in regard to basic preconceptions about the nature of the body, the causes of disease, and which drugs were appropriate. Given that there was also some degree of competition both between temples and with other forms of medicine for this somewhat fickle clientele, Egyptian priests may have felt moved to assimilate some Greek medicine. The Greek medical text found on the Memphis necropolis might be relevant to this suggestion (see p. 87). Thompson (1988) 208 suggests it indicates that priests used medical knowledge gained from such treatises to treat the god’s patients. Unfortunately, this text has not yet been published and so it is not clear whether it is theoretical, procedural or some kind of pharmaceutical handbook.

Some measure of adaptation does seem to have taken place in those areas of temple medicine in which the customs of both ethnicities were to some degree co-extensive. A demotic medical text copied from a Ptolemaic original contains many drugs of Mediterranean origin not extant in earlier Egyptian medical papyri. This suggests that some Greek drugs were taken up by Egyptian healers, a group which almost certainly included the dream interpreters and drug advisers of the temples. There may also have been a tradition of drug expertise in the Egyptian temples to a greater degree than that of the Asklepiea of the Greek world, as Galen’s use of a prescription from the temple of Ptah at Memphis suggests (above p. 106). Egyptian temples, unlike Greek ones, are centres of learning and temple medicine in Egypt was thus less reliant than the Asklepiea on secular medicine to provide the template for its practices and advice. In Egypt it is largely the other way around.

171 P. Vienna 6257 (second century CE). See 22 n. 67 and especially 62 n. 183.
2.8: Conclusion

Identity

Temple medicine in Egypt and temple medicine in Greek culture were sufficiently similar in their motivations and procedures for healing involving the gods to be a matter of common and inclusive concerns and opportunities. The religious pluralism of Greek and Egyptian society was combined with Greek ideals of Egypt and the affinities in Greek and Egyptian religious and medical practices. This gave a certain authority to the long-established gods and priests of Egypt's sanctuaries, sufficient to encourage a preference for the rituals, architecture, and usually the personnel of Egyptian cult. Many Greeks seem to have viewed the Egyptian aspect of godhead as being in Egypt more powerful than the Greek, or at least more appropriate. Gods who corresponded to some degree to familiar Greek deities may have been routinely known to Greeks under their Greek name, but this seems to imply simple linguistic preference rather than religious choice. Such identifications were neither exact nor necessary. The perception of power as expressed and instantiated in local cult seems to have been sufficient guarantor of a general divinity, whatever its precise local form.

More prosaic factors for the apparent popularity of Egyptian cults among Greeks include the difficulty that newly-established Greek-style cults and temples would have faced competing with famous and impressive sites such as Memphis, and the attraction towards the amazing and exotic implicit in much of the Greek attitude to Egypt, especially among first generation immigrants. It should also be remembered that the nature of the evidence has forced a concentration on the major sanctuaries, where cults of Egyptian form are dominant.

Hellenised gods such as Sarapis and Isis are included in the above observations, as the Greeks perceived them as Egyptian. Their 'success' among Greeks was however limited before the Roman period and due largely to their patronage by and identification with the Ptolemy. Their close relationship with the ruling family seems to represent the Ptolemy's dual Hellenic-Egyptian identity, but
beyond this political spin on religious identity Hellenisation in the field of religious experience was often limited to internal preconceptions of Egypt and of temple medicine.

Thus the nature of the encounter between pilgrims, particularly Greek pilgrims, and gods in an Egyptian context is crucial to temple medicine in Ptolemaic Egypt, but it is also the least reported and least susceptible to generalisations. The resort to the gods for healing was marked by nuances of individual and contingent circumstance. The individual’s perception of the god, the illness, and its severity and cause combined with the economic, social and political forces of the city or region which had formed the represented expression of the god in his local form. The combination created an event unique to that individual in that temple: an event which unfortunately most of them failed to record in any detail.

Essentially the encounter involved a dream, often deliberately sought for by incubation and/or prayer. The god responded with prophetic instructions or a miraculous cure. Interpretation of the instructions or the dream by experts was sometimes required. Since the culturally derived expectations of the interpreters may not have been an exact match to those of pilgrims of a different ethnicity or cultural tradition, the kind of dreams may have varied between pilgrim ethnicities to an extent not explained by individual and circumstantial variation. In turn this may have slightly influenced the interpretation of dreams by the temple priests. However the differences between a god’s appearances in dreams were not sufficient to create radically different expectations, dependent on cultural preconceptions, of what a healing god did. The gods themselves remained ethnically inclusive entities.

Comparing Greek and Egyptian temple medicine
It may be an illusion created by the preservation of one kind of evidence rather than another, but the context of temple medicine in Egypt seems to be one of a general oracular framework of beneficent advice and assistance, rather than of a specifically
medical knowledge. The reputation of certain gods in healing is thus a consequence of their ‘personality’ rather than a specific expertise. Where expertise is involved it is often a preconception based on their mythic role, as with Isis; or related to a general pre-eminence in knowledge and prophecy, as with Thoth. The important point here is that even when such expertise in pharmaceutics or medicine is attributed to a particular deity, this does not seem to entail anything distinctive about the incubatory or visionary encounter with that deity. The god, whichever god it is, offers an instantaneous cure, simple remedies or advice on how to gain their favour. Nothing is particularly specific to a certain deity or even to a certain kind of knowledge, with the arguable exception of the pharmaceutical advice which almost certainly depended on the priestly interpretations and would not have differed much from that of folk medicine.

Thus there seems no parallel in Egyptian medicine to the way in which Asklepios represents a technical expertise in Greece. If some Greek pilgrims dreamt of surgical imagery, it had no obvious connection with the presentation and interpretations of Imhotep’s cult, nor of any other Greek, Egyptian or syncretic god except Asklepios. Such technical and specific knowledge on the part of a particular god is one mode of divine healing. Another is the application to illness and death of prophetic knowledge and the power to intervene for good or ill. In some measure these two modes are in competition with, or opposed to, or exist as alternatives to each other. In mainland Greece, both conceptions existed in the arena of religious medicine. But in the fluid world of divine identity in Ptolemaic Egypt, the god remains a god rather than a physician.
THREE: ELITE MEDICINE IN ALEXANDRIA

3.1: Introduction

This chapter is about Greek elite medicine of a kind that originated in the fifth century. It was characterised by an explicit definition of its subject-matter as φύσις (nature) to the exclusion of all explanations which did not obey consistent, impersonal laws of cause and effect, and which could not be accounted for solely in these terms. This so-called ‘rational’ medicine thus specifically excludes all forms of divine or arbitrary, personal explanation of the kind that in modern times is usually known as ‘magic’ (see chapter one). By 323 and the death of Alexander this kind of medicine was already about two centuries old.

The Hellenistic period saw a brief but spectacular flourish in the use and degree of skill of anatomical investigation. This had an impact on both methodological and theoretical debates, provoking irreconcilable and competitive differences between both individuals and groups of individuals. Hence it was in the Hellenistic period that the emergence of recognised medical ἀλήθες (‘schools’ or ‘sects’) took place among elite physicians in Alexandria. These were groups of physicians explicitly and polemically separated from each other by doctrinal or methodological divergence. This chapter will examine how and why this happened, concentrating on the anatomists Erasistratos and Herophilos, and the Empiricist, Herophilean and Erasistratean ἀλήθες.¹

It will also look at the question of Egyptian influence on elite Greek medicine and vice versa. In particular I shall consider four areas of interest. Firstly whether the nature of Greek colonisation and government in the Near East and particularly in Egypt affected elite medicine. This includes the role of royal patronage and the

¹ A third anatomist, Eudemos, is cited by later authors as a contemporary of Herophilos and another early pioneer in sophisticated anatomical investigation: e.g. Galen In Hippocratis Aphorismos commentarius 6.1 (18/1.7 Kühn) = T14 von Staden (1989) and 62-3. Aside from this he remains mysterious. There is still debate over whether or not Erasistratos was based for all, some or none of his career in Alexandria. It will be argued on pp. 126-7 that he spent at least some time there.
reasons for the sudden acceptability of human dissection in the early years of Ptolemaic rule. Secondly the possible Egyptian influences detected by some scholars on the interests and work of elite Alexandrian physicians, such as Herophilos’ emphasis on the importance of the pulse as a diagnostic tool. Thirdly whether the perceived technical and engineering expertise of the Egyptians, visible in its monumental structures, had any impact on the ‘scientists’ drawn to the Ptolemaic court. Fourthly any impact that elite Hellenistic medicine may have had on Egyptian practitioners, with particular regard to the identity and role of the Egyptian physician Ninyas.

Thus historical circumstances comprising the social context of the elite physicians of Alexandria will form 3.2, the intellectual context of Hellenistic medicine and philosophy 3.3, and the cultural context of a Greek colony in Egypt 3.4. All these contributed to the emergence of distinctive methods and theories in this particular time and place.

3.2: THE SOCIAL CONTEXT
3.2.1: Third century Alexandria
The anatomical findings of Herophilos and Erasistratos, their physiological and pathological theories, and the emergence of the medical αἱρεσίας took place in a geographical, political and cultural context that was sharply differentiated from that of their predecessors.

Alexander had laid out the foundations of the city named after him. In the finished creation, his tomb was a dominant feature both of the architectural landscape and the interior, mental one of the city’s inhabitants. The Ptolemies maintained the image and ideology of the Makedonian conqueror as a means of legitimising their rule, as Alexandria was primarily a Greek city in social and cultural terms. Its political structure in the third century was that of a democratic πόλεις under the final authority of the king. The population of Alexandria was made up out of the citizen
body, a small but significant group of Greeks with patronymics from outside Egypt which included many of Alexandria’s intellectual elite, a large number of non-citizen Greeks, Egyptians, an increasing Jewish sector, and other ethnic minorities.²

Furthermore Alexandria’s invention as a cultural centre of the Hellenistic world was due largely to deliberate patronage on the part of the Ptolemies, most notably expressed in the institutions of the Museion and the Library. There is considerable evidence that the existence of the Library stimulated literary interest in medicine and encouraged the development of certain forms of medical debate. Alexandrian literary scholars established what is now called the Hippocratic Corpus in the Hellenistic period, probably for the first time.³ The creation of a canon of medical texts in written form fostered both the establishment of lineages of authority and argument, and the tendency to assert independence by explicit disagreement. The Alexandrian physician Herophilos seems to have explicitly opposed ‘Hippokrates’ on certain points, and probably wrote a work against the Hippocratic text Prognosticon. His book πρὸς τὰς κοινὰς δόξας seems to have served to establish his own opinions by criticising those of previous theorists.⁴ The generations following Erasistratos and Herophilos saw an increasing tendency towards exegesis and philological debate among physicians.⁵

Early Ptolemaic patronage used associations and tendencies already present in Alexander’s time, either deliberately or as a matter of historical contingency. Many of these were connections with the Peripatetic philosophical school of Aristotle, whose family was from Makedonia and who was himself Alexander’s tutor. Alexander’s army had contained geographical surveyors, and later ancient sources claimed that it had acquired geographical, botanical and zoological information that

² Fraser (1972) I 94-100; 38. The constitution almost certainly underwent considerable change in the second or first century.
³ The Corpus is actually a group of texts by numerous different authors, collected under the name ‘Hippokrates.’ Additional, later texts were added in the Roman era.
⁴ Soranos Gynaecia 1.27.2 (CMG 4, 17.23-4) = T30 von Staden (1989). Subsequent references of the form T-number are all from von Staden (1989).
⁵ This topic has been explored in depth by von Staden (1989) 452-457 and (1999) 160ff.
often had an impact on Greek knowledge and thinking in such areas. Thus the Makedonian conqueror was personally associated with those forms of learning and discovery which characterised Peripatetic investigation. His regent in Greece, Antipater, was the chief executor of Aristotle’s will and had appointed the Athenian Demetrios of Phaleron, a former student of Theophrastos’, as the effective ruler of Athens between 317 and 306. Demetrios was subsequently a very important official in Ptolemy I Soter’s Alexandria, where he was probably influential in the creation of the Museion and the Library. Demetrios fell out of favour with Ptolemy II Philadelphos, but this did not end Alexandria’s links with the Peripatos. Strato of Lampsakos, called ὁ φωικός because of his concentration on the mechanical principles of the natural world, was Philadelphos’ tutor before he returned to Athens to be Theophrastos’ successor as head of the school.

Such pre-existing connections are frequently, and no doubt correctly, viewed as a large factor in Alexandria becoming the centre for much of what would be now called ‘scientific’ thought and research. This feature can of course be over-emphasised. The relative concentration on the investigation and manipulation of the natural world among Alexandrian intellectuals is no doubt partly accidental in its origins and subsequently self-reinforcing. It does not say anything in particular about Ptolemaic or Alexandrian intellectual values or preoccupations, as such investigators into nature had cultural value across the Hellenistic world. Notable ‘scientists’ were also present for at least part of their careers at other Hellenistic courts and cities. Moreover the majority of the intellectuals that royal patronage sought to attract were literary figures, and Alexandria certainly had its fair share of these. Similarly the relative

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6 See Pliny NH 8.44.  
7 Diogenes Laertios 5.11-16.  
8 Diogenes Laertios 5.58.  
9 E.g. Archimedes in Syrakuse, Dionysos the Alexandrian and the astronomer Hipparkhos of Nikaea in Rhodes, and Apollonios of Perge in Ephesos, where he remained in contact with Pergamon, like Rhodes a centre for mathematicians. Smyrna later became famous for its school of Erasistratean physicians, and Laodikea-ad Lykom for its school of Herophilean doctors: Von Staden (1996) n.1. Also Eratosthenes of Kyrene, who was working in Athens when invited to Alexandria by Euergetes I.
absence of philosophers from Alexandria was no more a deliberate policy than the concentration of scientists. The Ptolemies invited well-known philosophers to Alexandria, and some did make visits.¹⁰

Nonetheless it would be a very large coincidence if Alexandria had come to contain the majority of the Hellenistic period’s principal investigators into the natural cosmos solely as a matter of chance. None of the ethically inclined Hellenistic philosophical schools had a base in Alexandria until the neo-Pyrrhonists at the very end of the Ptolemaic period. Only the Peripatos was influential in both Athens and Alexandria,¹¹ and the Aristotelian emphasis on empirical inquiry into physics and medicine became a notable feature of Alexandrian culture.

There were long-standing associations between elite physicians and philosophy. Aristotle, himself from a family of physicians, said:¹²

The more subtle and inquisitive doctors speak about nature and claim to derive their principles from it, while the more accomplished investigators of nature generally end by a study of the principles of medicine.

The surviving fragments of Herophilos and Erasistratos reveal that both used sophisticated, philosophical-style arguments in issues of epistemology and causation (see 3.3), while the biographical tradition also places them in the same intellectual milieu as philosophers. The logician Diodoros Kronos was in Alexandria ca. 275-250. This not only provided the poet Kallimakhos with subject matter, but also a circumstantially plausible setting for the probably apocryphal anecdote of Diodoros’ meeting with Herophilos.¹³ The physician is said to have used Diodoros’ own

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¹⁰ Philosophers who visited the Ptolemaic court included the logician Diodoros Kronos, the Stoic Sphaeros, and the Kyrenaics Hegesias and Theodoros “the atheist.” The Epicurean Kolotes dedicated a work to Philadelphos.
¹¹ Von Staden (1989) 97.
¹² De respiratione 480b26ff c.f. De sensu 436a17-b2.
¹³ Sextus Empiricus PH 2.245.
arguments against motion to prove to the philosopher that either his shoulder was not in fact dislocated or there was something wrong with his arguments.

According to report Erasistratos studied with Theophrastos.\textsuperscript{14} Many scholars have thought that his physiology was influenced by the theories of Strato (see p. 144 and n. 81). Such anecdotes and associations reveal the common intellectual world of the Hellenistic elite, a relatively small pool of individuals, most of whom were known to each other personally or at least by repute. These individuals were similar in education, social status and modes of thought. Kallimakhos' and Theokritos' poems present a world in which physical and philosophical knowledge and inquiry, including that of medicine, was part of educated discourse among the local cultural elite. Kallimakhos satirises Diodoros' logic, while both poets refer to physicians known to them by name and moving in the same circles: the spheres of the Museion, the Library and the court were not discrete but overlapping. Thus the Ptolemies themselves were part of this small and personal intellectual community. For example Philadelphos was taught by Strato, Philopator is said to have tricked the Stoic Sphaeros with wax pomegranates in a debate over the cognitive impression, and Berenike provided nomenclaturic inspiration for the astronomer Konon.\textsuperscript{15}

3.2.2: The anatomists and the Ptolemies

Practitioners of elite medicine were also members of the well-educated upper Greek social strata almost by definition, as another remark of Aristotle suggests: “λατρώς δ' ὧ τε δημοιουργός καὶ ὃ ἀρχιτεκτονικός καὶ τράτος ὃ πεπαιδευμένος περὶ τὴν τέχνην[…].”\textsuperscript{16} There is nothing to connect any physicians directly with either the Museion or the Library, and it is probably the case that Herophilos and Erasistratos were not the objects of Ptolemaic patronage through that particular mechanism. But as part of the intellectual, cultural, and to some extent the social

\textsuperscript{14} Diogenes Laertios 5.57, c.f. Galen \textit{An in arteriis} 7 (4.729 Kühn): “[the Erasistrateans say] ὡς θεοφράστῳ συνεγέντο.”

\textsuperscript{15} Above n. 8; Diogenes Laertios 7.177 and Athenaeos 354e; Kallimachos \textit{Koma Berenikes} (fr. 110 Pfeiffer).

\textsuperscript{16} \textit{Politica} 1282a3-4.
elite, and in particular as the most famous and up-to-date medics around, they would also have been known to the king(s).

The physicians of the court were similarly members of the intelligentsia, as shown by the acrimonious public accusations of plagiarism levelled at Philopator’s physician, the Herophilean Andreas, by the Librarian, geographer, and literary critic Eratosthenes. The son of Erasistratos’ own teacher Khrysippos was apparently personal physician to one of the Ptolemies. While no tradition claims such a position for Herophilos, Roman sources cite an anecdote that places Erasistratos in the Seleukid court at Antiokh, triggering a controversy over whether he practised in Antiokh, Alexandria or both.

The story in question goes as follows. Antiokhos, the son of King Seleukos I Nikator, was wasting away from a mysterious disease. His father called in a physician who was able to deduce that the cause of Antiokhos’ suffering was his love for his stepmother Stratonike. The physician then told the king in such a manner as to ensure a happy ending in which Seleukos allowed his son to marry Stratonike.

This physician is usually Erasistratos. It is very similar to the legend of Hippokrates and Perdikkas of Makedonia, which is in fact probably based on the Seleukid story. The historicity of the tale is difficult to establish, although Antiokhos did indeed marry his stepmother Stratonike and receive half the kingdom

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18 Diogenes Laertios 7.186 c.f. Scholia in Theocritum 17.128, although here the younger Khrysippos is said to be from Rhodes, not Knidos.
20 Erasistratos: Valerius Maximus Factorum et dictionum memorabilium libri novem 5.7.3. ext. 1; Plutarch Vita Demetrius 38; Appian Historia romana 11.10; Lucian De historia conscribenda 35; Pliny NH 29.3; Julian Mispogon. 347; Suda. s.v. Erasistratos no. 2896. Valerius Maximus mentions the astrologer Leptines as an alternative candidate; while Pliny’s first allusion to the story, 7.123, features Erasistratos’ father Kleombrotos. References from Pinault (1997). OGIS 220 (third century) names Antiokhos I’s physician as Metrodoros, the name of a physician said to be Erasistratos’ ancestor: see n. 30.
while his father was still alive, an element included in the story by Plutarch and Appian.\textsuperscript{22}

However Pinault’s view is that the story serves largely to present a model-in-action of the clever physician, and this seems to explain many of the story’s features, as well as its reuse for Hippokrates and, on his own behalf, by Galen.\textsuperscript{23} It therefore seems probable that the story is a romantic explanation of events surrounding actual history, rather than a factual record.\textsuperscript{24} The interest here lies in the assumption, dating from the first century CE at the latest, that Erasistratos was a suitable candidate for the role of the Seleukid court physician.

Even if the story is correct in placing Erasistratos in Antiokh, this does not exclude him from having also lived in Alexandria. Elite physicians were a highly mobile group, like other intellectuals and indeed ordinary itinerant doctors of the later classical and Hellenistic ages.\textsuperscript{25} Erasistratos himself is located at other times in Athens, learning from philosophers, and perhaps in Knidos, the home of his teacher Khrysippos.\textsuperscript{26}

Various references suggest – albeit never conclusively – that Erasistratos had family and other relationships in both capitals. His brother Kleophantos and the son of his teacher may both have worked in Alexandria.\textsuperscript{27} In later generations the Erasistratean Apollophonae, himself from Seleukia, was at the court of Antiokhos III,

\textsuperscript{22} Von Staden (1989) 47 argued that the date of the story, ca. 293, agrees with other evidence about Erasistratos’s life, which he dated to ca. 330-255/250. Eusebios and Jerome put Erasistratos’ \textit{floruit} at 258-7, but Von Staden points out that the former at least is an unreliable witness. However in a later article (1997) he has altered his opinion on Erasistratos’ dates, now estimated at ca. 315-240. This would make Erasistratos rather a young physician in 293.

\textsuperscript{23} Pinault (1992) 77. See Galen \textit{Prognosticon} 5.6 (CMG 5.8.1, 100.6).

\textsuperscript{24} Mastrocinque (1995) 144 suggests it was forged for political reasons.

\textsuperscript{25} Demokedes’ career as reported by Herodotos 3.125-137 is an early example of the trade in prestigious physicians. In the Hellenistic era city-states requested public physicians from Kos (see chapter one). The movements of an Apollonios of Perge or an Arkhimedes, and the very fact that most third century Alexandrian intellectuals are from elsewhere in Greece, testify to the mobility of elite thinkers and skilled specialists.

\textsuperscript{26} For Erasistratos’ apprenticeship with Khrysippos see Diogenes Laertios 7.186, Pliny \textit{NH} 29.5, Galen \textit{e.g.} \textit{De venae sectione adversus Erasistratum} 7 (11.171 Kühn).

\textsuperscript{27} Galen \textit{In Hippocrates Epidemiarum 3 commentarius} 2.3 (CMG 5.10.2.1, 77.20) and Rufus \textit{De renum et vesicae morbis} 4.1 (CMG 3.1, 128.55); for the Khrysippoi of Knidos see n. 18.
while Apollonios of Memphis, a pupil of Erasistratos’ medical associate Strato, is said to have worked in Alexandria.28 A variant on the lovesickness story identifies the physician not as Erasistratos but as his father Kleombrotos.29

It seems perfectly possible that Erasistratos, scion of a famous and widespread medical family and with intellectual and possibly even genealogical connections to the Peripatos, worked in both Antiokh and Alexandria.30 That he cannot be conclusively placed in either is perhaps due to this mobility.

Two reports connect Erasistratos directly to the Ptolemies. The first is by Caelius Aurelianus: “Erasistratos...promises king Ptolemy an emollient plaster.”31

The second, which is also the only explicit evidence for a connection between the Ptolemies and Herophilos, dates from the Roman period. The first century CE medical encyclopaedist Celsus reports in his preface that “kings” had supplied Herophilos and Erasistratos with criminals from the prisons, and that dissection and vivisection had been carried out upon these individuals.

longeque optime fecisse Herophilum et Erasistratum, qui nocentes homines, a regibus ex carcere acceptos, vivos indiderint, considerarintque etiamnum spiritu remanente ea, quae natura ante clausisset, eorumque positum, colorem, figuram, magnitudinem, ordinem, duritiam, mollitiem, laevorem, contactum, processus deinde singularum et recessus, et sive quid inseritur alteri, sive quid partem alterius in se recipit....Celsus 1 praef. 23.6-25.1.

The easiest assumption is that the “kings” in question are the Ptolemies, since the sources are confident that Herophilos worked in Alexandria. Lloyd (1975) argues that it is improbable that both the Ptolemies and the Seleukids were generous in this fashion, though a case could perhaps be made for it as another example of rivalry

28 Caelius Aurelianus TP 5.2.50 (CML 6.1, 2.884) with Polybios 5.56, 5.58; Ps.-Galen Introductio seu medicus 10 (14.699-700 Kühn). Pace Fraser 1 (1972) 347, who argues that no Erasistratean can be located in Alexandria.
30 Above n. 20.
31 According to Sextus M 1.258, “Pythia, the daughter of Aristotle, was married... to Metrodoros the doctor, a student of Khrysippos of Knidos and teacher of Erasistratos.” See Mastrocinque (1995).
between the Successor kingdoms. If the plural refers neither to two dynasties, nor
reflects a simple temporal uncertainty on the part of Celsus, it may suggest that this
patronage continued through the change of kings from Soter to Philadelphos in 282/3.

The claim that Herophilos and Erasistratos carried out human vivisection has attracted
some controversy. The general consensus now is that Celsus, usually taken to be a
relatively reliable source, is almost certainly also accurate here. His account is
supported by the considerable amount of circumstantial detail involved, as when he
cites the later arguments between schools and individuals as to whether such
practices, in particular vivisection, were justified in either scientific or moral terms.32

The practice of human dissection and vivisection in third century Alexandria
is particularly interesting in view of the fact that it was unparalleled in the ancient
world. Human dissection on any scale had been and would be unpopular, was
generally thought unnecessary, and tended, lacking a suitable supply of corpses, to be
impractical on any useful scale.33 Human vivisection is unknown outside this
instance.

An explanation is required for this brief and limited variation in Greek attitudes
towards invading the sanctity of the dead – or, in the case of vivisected criminals,
effectively killing the living. Von Staden (1989) 29-30 suggests that the Ptolemies,
officials and doctors involved presumed that dissection did not appear impious to a
people who cut up their dead, and that this supposed Egyptian acceptance of
dissection helped to justify its practice by Greeks.34 By the later Ptolemaic period the
Egyptian way of death had become popular among the Greek population of Egypt and

32 The opposing view is represented by Scarborough (1976).
33 The works of Galen and Celsus suggest that even dissection of animals was not a universal teaching
practice.
34 An objection is that any Egyptian priest or official could have corrected the view that mumification
entailed approval of dissection. There is evidence for Egyptian involvement at a high level in
Ptolemaic self-presentation, for example in the case of Sarapis (see chapter two). Yet Manetho, the
Egyptian principally involved in the formation of the Sarapis cult and the author of a history of Egypt
in Greek, does not seem to have been read by Greek authors in the early Ptolemaic period: Von Staden
(1989) 25. His access to the Ptolemies may thus have been limited, transient and specific.
indeed of Alexandria, though this was not yet so to any large extent in the period of the anatomists.\textsuperscript{35}

Further evidence comes from the Ptolemaic adoption of brother-sister marriage. All Greek sources agree on this being an Egyptian custom, and it seems safe to presume that without this precedent the Ptolemies would not have conceived of or been able to justify their breaking of Greek incest taboos.\textsuperscript{36} However it is now thought that full brother-sister marriage was not practised among Egyptians of the pre-Greek period, certainly not on any scale.\textsuperscript{37} While brother-sister marriage was a common practice of the pharaohs, probably to preserve dynastic integrity, the only securely documented cases are between half-siblings.\textsuperscript{38} So it seems that the city immigrants could easily make invalid assumptions about major aspects of Egyptian society, based on their own culture's uncorrected perceptions of Egypt. Von Staden may then be correct in suggesting that a similar process took place in the Greek perception of Egyptian cultural practices involving the dead.

Yet the comparison between dissecton and Ptolemaic incest is not particularly successful. Ptolemaic use of full brother-sister marriage is only a small step away from its pharaonic precedent of the marriage of half-siblings, and can also appeal to the mythological incest of Osiris and Isis, not to mention Zeus and Hera. It is therefore arguable to what extent it counts as a misinterpretation of pharaonic practice at all. For both customs the existence of possibly misinterpreted Egyptian precedents seems an inadequate explanation for such a drastic shift in Greek attitudes, even on the assumption that this was restricted to a small proportion of the social elite. Nor does a precedent for human dissection serve as a justification for vivisection. Additional sources of power for social change must be sought.

\textsuperscript{35} Riad (1996) 36.
\textsuperscript{36} Diodoros Sikulos 1.27.1 c.f. Philo \textit{De specialibus legibus} 3.23-4.
\textsuperscript{37} Bagnall and Frier (1994) 129-30. Most of the secondary literature on this topic refers to the whole Greco-Roman period and concentrates on the Roman evidence. It can be found in Bagnall and Frier (1994) 127 n. 62.
\textsuperscript{38} A. Lloyd (2000) 408-9.
I argue that human dissection and vivisection took place in early Ptolemaic Alexandria largely because of two circumstances. Firstly Erasistratos and Herophilos belonged to a cultural context in which dissection was widely perceived by medical thinkers to be an appropriate methodology, especially given the Peripatetic tradition of much of Alexandrian thought. Secondly and crucially, attributing social changes to their possible precedents and justifications leaves out the Ptolemaic factor itself. In both anatomical investigation and brother-sister marriage, the kings are directly involved, either instigating the practice themselves, as in Philadelphos’ marriage to Arsinoe, or making it possible.

The new monarchic states were attractive to elite physicians as intellectual centres, and they also offered opportunities in the shape of royal patronage and official resources.\(^{39}\) This distinguished the landscape of possibilities open to the Alexandrian physicians from that of their predecessors and contemporaries in Greek city-states like Kos, Karystos, and Athens. The resources in question are not only material resources, in this case corpses, but also legal and political status. It may indeed be the case that the kings’ involvement in the whole process stopped at the granting of permission or even consisted merely of turning a blind eye. The physicians may have made all the actual arrangements with mortuaries or prison guards. But even if only silently supported by the power of the state, this was something not available to physicians elsewhere. “Public physicians” who received material support from the governing bodies of city-states were themselves usually alien residents among other Greeks.\(^{40}\) Moreover the governing bodies in question would not have had either the extent or the arbitrariness of Ptolemaic power, or its tendency to patronise science specialists, or a non-Greek criminal population of significant size.

Thus the event of human dissection and vivisection in third century Alexandria should be placed in the context of the exercise of absolute monarchic

\(^{39}\) For instance the writer on war technology Philo of Byzantion, fl. ca. 200, says that ambitious kings subsidised τεχνητα: Belopoeica 50.24-6 (108 Marsden).

\(^{40}\) See chapter one.
power. Furthermore it is probable that the criminals so vivisected were not Greek. As such their destruction would not have been seen as threatening the status and rights consequent on Greek ethnicity or the relationship between the Ptolemies as kings and their subject-citizens. It would not have been something that might happen to Greeks, especially not to the rich and powerful Greek-Makedonian elite.

To sum up, physicians such as Erasistratos and Herophilos who subscribed to the methodological principle of the usefulness of dissection were in Alexandria elite members of a ruling ethnicity with (limited) access to an arbitrary, royal, and divine power that patronised their form of investigation: the Ptolem.

3.3: THE INTELLECTUAL CONTEXT
3.3.1: Pre-Hellenistic epistemology and methodology
The Hippocratic Corpus already contains evidence of explicit methodological diversity and debate. Such emphasis on appropriate methodology, as a means of justifying theoretical claims, was part of a broader concern within Greek intellectual culture over the status of 'knowledge' and the criteria of truth. Thus the investigations of many of the φυσιολόγοι or Pre-Socratic philosophers into anatomy, physiology and pathology were both driven and justified by their epistemology.

The development of such epistemological and methodological questions served to mark off the 'naturalistic' form of medicine from other forms of healing. It provided a model in which methods and modes of explanation rather than therapeutics or results could be appealed to for authority. Thus the Hippocratic author of De morbo sacro restricts the sphere of medicine to natural causes and effects by eliminating the claims to truth of other kinds of explanation. The new medicine claimed that only naturalistic explanations were adequate to explain, predict, and to some extent control disease, even if the actual definitions of and criteria for what counted as a 'natural' cause varied.
This also had the effect of turning an epistemological spotlight on the physicians themselves. Once the demarcation between this kind of medicine and traditional forms of healing was established, the value attributed to naturalistic medicine depended on the authority of its theories and the means of discovery they were based on. Theoretical speculation and methodological argument acquired a new importance.

One rhetorical/methodological strategy was to assert both the power of reason to deduce from empirical events to hidden causes and mechanisms, and the usefulness of doing so. Anaxagoras provides the definition for this approach: "οὐδὲν γὰρ τῶν ἀδέλφων τὰ φαινόμενα." The phrase was echoed in the fourth century by the physician Diokles of Karystos:

Diokles says, ὁδέλεφς ἄδηλων τὰ φαινόμενα. There are [things] on the basis of whose appearance one can see that fever has occurred in consequence of them, [such as] wounds, inflammations, and swollen glands. (Fr. 56b van der Eijk).

This approach conflicted with a tendency towards diagnostic and therapeutic caution within the Greek medical τέχνη. It was an attitude closely connected with the scepticism of much Greek thought regarding the reliability of empirical knowledge and the scope of rational knowledge, an extremely influential dichotomy in Greek philosophy ever since Parmenides. His opposition of reason and the way of truth to the senses and the way of seeming explicitly represented the latter as deceptive.

In medicine the claims of some authors as to the reliability and power of medicine were undermined by the fact that the more confident theorists were evidently no more successful in medical practice than their more cautious counterparts. Nor was there

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much agreement between theorists of any kind on what the observable phenomena said about their hidden causes. As a consequence a crucial part of competition between physicians centred on improving the justifications upon which any one physician’s theories were based. At the same time a ‘sceptical’ tendency became embedded in medical epistemology as in other aspects of Greek thought, though its extent and expression varied between one physician and another.

Many medical authors highlighted the difficulty and complexity of diagnosis and treatment, and advised caution in making claims for the physician’s ability to interpret and influence nature. Thus one Hippocratic author says:

καὶν ἐγὼ τοῦτον τὸν ἴηρὸν ἵσχυρὸς ἐπαινέομι τὸν σμικρὰ ἀμαρτάνομα, τὸ δὲ ἀτρεκὲς ὀλγάκις ἐστι κατιδεῖν.

That physician who makes only small mistakes would win my hearty praise. Perfectly exact truth is rarely to be seen. 42

This practical aphorism is sometimes generalised as a more formal methodological criterion. The Hippocratic text *De diaeta ἐμπὲρ ἐν ὁμορίσ ἀκριτες*1-2, for instance, criticises the lost treatise “Κηλίδια γνώμαι” for being too simplistic. 43 This move, both descriptive and defensive, represents medicine as being too complex for demonstrations of the certainty available to mathematical inquiry, and asserts that the doctor requires a different kind of method. It attempts in this way to avoid evidently untrue claims for medical reliability without downgrading the status of the discipline and its practitioners.

The opposition of scepticism to theories of natural causes was already a common *topos* in the fifth century, but the epistemological basis for caution about the possible extent of expertise in a τέχνη did not become subject to sophisticated philosophical analysis until the end of the fourth. A fragment on medical method in relation to

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42 *De prisca medicina* 9 (CMG 1.1, 41,23-4).
43 2,224,1ff Littré.
dietetics from the fourth century physician Diokles of Karystos suggests that a corresponding development of epistemological argument to justify therapeutic methodology took place among medical writers at this time.

(i) Those, then, who suppose that [substances] that have similar flavours or smells or [degrees of] hotness or some other [quality] of this kind all have the same powers, are mistaken; for it can be shown that from [substances] that are similar in these respects, many dissimilar [effects] result; (ii) and indeed, one should also not suppose that every [substance] that is laxative or promotes urine or has some other power is like that for the reason that it is hot or cold or salt, seeing that not all [substances] that are sweet or pungent or salt or those having any other [quality] of this kind have the same powers; (iii) rather must one think that the whole nature is the cause of whatever normally results from each of them; for in this way one will least fail to hit the truth.

(iv) Those who believe that with every single [substance] one should state a cause why each one of such [substances] is nutritious or laxative or promotes urine or has some other similar power, apparently do not know, first, that for the use [of these substances] something like that is not often necessary, (v) and further, that many of the [things] that are [the case] in some way look like some sort of starting-points by [their] nature, so that they do not admit of the [kind of] account that deals with [their] cause. (vi) In addition, they sometimes make mistakes when, while accepting [things] that are not known or are disputed or implausible, they think that they state the case sufficiently.

(vii) Therefore, one should not pay attention to those who state causes in this way or to those who believe that one should state a cause for all [things]; rather, one should give credence to the [things] that have been well grasped on the basis of experience over a long time. (viii) One should look for a cause [only] of the [things] admitting one, whenever it is by this that what is said turns out to be better known or more reliable.\footnote{Diokles fr. 176 (van der Eijk) = Galen De alimentorum facultatibus 1.1.3-6 (CMG 5.4.2, 202.14-204.2). The divisions are those of Hankinson (1988a) 295-6.}

This fragment reveals that the epistemological concerns of the Hippocratic and Pre-Socratic authors are still problematic in the fourth century. Diokles’ analysis is complex and detailed. In particular it contains an elaborate compromise between a pragmatic but reasoned scepticism about the possible extent of medical knowledge,
and the attempt to extend that knowledge. The emphasis is on the avoidance of unjustified causal explanation. This is so both for practical reasons, as it is not always necessary to know the cause in order to treat the case (iv), and on epistemological grounds. It is impossible to give a causal account of certain things that “look like some things—like starting points” (v), and causal accounts based on unreliable evidence and assumptions should also be avoided (vi). As a general method it is better to rely on things worked out through long empirical experience (vii).

In spite of this Diokles was not averse to those causal accounts of disease that he considered well founded. Sections (iii) and (vi) specify some of the criteria needed for the kind of cause that would have relatively secure status: it should take into the account the “whole nature” and require good evidence and, confirming this, wide agreement. He is reported to have written a treatise on anatomy, which again suggests he used theoretical explanations of disease and cure based partly upon an anatomical and physiological system.  

(Viii) seems to provide what Diokles thinks the role of causes in medicine ought to be: to make one’s general account more reliable, and thus more convincing. Thus Diokles’ fragment exemplifies the point that the refinement of epistemological argument was driven by the controversial status of all current theories, methods and practices, and the resultant competitiveness of their justifications.

This common preoccupation of Greek thought in the classical and later periods maintained much of the circulation of ideas and arguments between philosophy and medicine. There is for example some evidence that Diokles was influenced by Aristotle, his approximate contemporary and the scion of a distinguished medical family. The notion of “starting-points” may owe something to Aristotle, who had

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45 I do not use ‘scepticism’ here in the sense of having a formal, explicit and coherent set of epistemological arguments on which Diokles’ entire approach is based. It is however stronger than simple caution based on experience, as he gives reasons based on general methodological and epistemological principles as to why theory is sometimes inappropriate.

46 Galen De anatomicis administrationibus 2.1 (2.282 Kühn).

47 There is now a rough consensus that Diokles fl. ca. 325. Some scholars argue that the influence was the other way around. I have here followed Hankinson (1998a) 295.
approved of physicians who based their theories upon indemonstrable first principles (ἀπαρχαί) derived from the study of nature. I note also that (i), with its suggested demonstration of dissimilar things being generated by similar things, again highlights the language and assumptions of justification and proof.

In this section I have tried to show that certain problems in medical epistemology preoccupied thinkers about medicine from the Hippocratics onwards, in particular claims for the plausibility and reliability of experience and reasoning. The competitive nature of both intellectual discourse and medical practice fostered an increased complexity and subtlety in such arguments, while maintaining the highly individualised nature of each physician’s approach.

3.3.2: Early Hellenistic epistemology and methodology

Herophilos

Herophilos probably lived ca. 330/320-260/250. He moved from his native town of Khalkedon, near the Black Sea, to Egypt sometime after Khalkedon’s alliance with Soter in 315. At some point he is said to have served a medical apprenticeship with Praxagoras of Kos. It is possible that this was in Alexandria, but since no source specifically places Praxagoras in Egypt at any stage of his career, it seems more likely that Herophilos spent this time in Kos. He may therefore have been active in Egypt ca. 300/290-270.

“When someone asked the physician Herophilos, ‘Who would be a perfect physician?’ Herophilos said, ‘He who is capable of knowing the possible from the

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48 The major work on Herophilos is of course that of Von Staden (1989). What follows will inevitably be heavily indebted to his collection, editing and analysis of the fragments of Herophilos and his school.

impossible." As this anecdote suggests, Herophilus followed the pragmatic approach to the limitations of medical knowledge evident in many earlier texts.

His clinical caution was justified by a limited epistemological scepticism about theoretical knowledge and the role of causal explanation. Although a couple of texts assert that he relied entirely on empirical experience (ἐμπειρία), these reports are heavily interpreted and/or polemical reappraisals of his practice. They are also directly contradicted by other reports on his methodology and particularly by the causal reasoning Herophilus evidently employed in physiology and pathology.

However he certainly placed considerable value on empirical observation. Galen says that he “gave an account [sc. of the pulse] of observation (τήρησιν) and experience (ἐμπειρία), rather than teaching a rational (λογική) method.” Presumably Herophilus derived all or most of his pulse theory in the same way as he did the classification of the gazelle-like pulse type that he observed in a eunuch, that is, from clinical experience.

Any apparent contradiction between this scepticism about the epistemological status of theory and the use of causal explanations can be resolved by a closer examination of his ‘sceptical’ arguments. Galen reports one of these:

Whether or not cause exists is by nature undiscoverable, but it is on the basis of a supposition that I think that cooling, heating, and being replenished occur [sc. as causes of certain physical states].

Thus for Herophilus causal explanations cannot be proven. They are always “ex suppositione.” They are however necessary, because:

50 Johannes Stobaeus Ecl. 4.38.9 (5.901 Hense) = T51.
51 Galen De experientia medica 13.6 (109-110 Walzer) = T52. This text, known only by an Arabic translation of the lost treatise, claims that Herophilus made experience all-important, but not that Herophilus himself said that experience was all-important.
52 For explicit statements on method see T55, T57. Also note Johannes Stobaeus Ecl. 1.19.1 (1.162 Wachsmuth) = T142: “Herophilus [says] that one kind of motion is perceptible by reason, the other by the senses.”
53 Galen De praesagitione ex pulsibus 2.3 (9.278 Kühn) = T176 II. 2-4.
54 Marcellinus De pulsibus 31 = T170.
56 Ibid 13.162 (CMG Supple. 2, 42.3) = T58.
For Herophilos does not consider anatomical descriptions fit to produce any
general preconception (πρόληψιν) for the purpose of [formulating] doctrines
(δόγματα), just on the basis of saying “this part has its natural origin in that
one” (πεφυκέναι ἐκ), as some people of poor repute do. For [Herophilos
thinks] the faculties that control us are discovered on the basis of other things
that become apparent (φανομένων) not simply on the basis of the act of
looking at the parts (ἀπλῶς τῆς θέας).\textsuperscript{57}

Herophilos, at least as Galen interprets him, seems to envisage that a combination of
anatomical phenomena and empirical evidence, probably from clinical examples,
enable the investigator to develop ‘general preconceptions,’ from which theoretical
dogmata can be deduced. Inferential deduction is necessary, that is, proceeding “on
the basis of” certain φανομένα to the discovery of, for example, the non-evident
dύναμεις “that control us.” The fact that non-anatomical phenomena are required for
this process might just mean that he felt that anatomical descriptions were insufficient
for forming theories. It might also perhaps imply he was unsure about the
epistemological status of “looking at the parts.” The Empiricists, a generation later,
did not regard anatomical findings as empirical because of the mode of their
discovery: this may have been a modification of Herophilos’ view.

So empirical experience, probably including anatomical phenomena, provides
the basis for theoretical inference and is the only certain part of the process.\textsuperscript{58} One
dictum of his is said to have been, “Let the φανομένα be described πρῶτα even if
they are not πρῶτα.”\textsuperscript{59} This certainly asserts that empirical observation is
methodologically crucial, but its exact meaning is not entirely uncontroversial as
πρῶτα can be translated either “first” or “as primary.” Von Staden’s preferred
translation, “Let the φανομένα be described first even if they are not primary,”
suggests that Herophilos is simply saying that any inquiry has to start from the

\textsuperscript{57} Galen De foetuum formatione 5 (4.678-9 Kühn) = T57.
\textsuperscript{58} A similar concern with what counts as reliable knowledge can be glimpsed in the report that while
arguing against the Hippocratic text Prognosticon he tried to separate prognosis and prediction in terms
of the certain and the uncertain: Galen In Hippocratis prorrheticum 1 commentarius 1 praeft. (CMG
5.9.2, 3.5-6) = T262.
\textsuperscript{59} Anonymus Londinensis 21.18-32 = T50a; c.f. T50b.
appearances, rather than, for example, proceed by deduction from a pre-existing hypothesis. Tieleman (1996) 22 similarly views the appearances as starting-points.

Hankinson prefers to translate τρότα consistently as "primary." On this reading Herophilos is admitting that there is a nature of things, a definite and objective reality, in which appearances sometimes do represent a principle and sometimes not. These are not necessarily mutually exclusive interpretations: the difference is arguably that between an emphasis on methodology and an emphasis on epistemology.

Although it is not clear whether "dogmata" in the above quotation refers to theoretical arguments only or also to clinical judgements, the usefulness of theory to therapy is stated explicitly elsewhere:

Herophilos throughout prescribes that the physician should know what, and of what kind, and how great the cause of the disease is, and by what it most becomes prevalent, so that he can also make his treatment fitting for each [disease].

Given that such theoretical causes can only be provisional, Herophilos may have restricted such analysis to what was necessary or useful to clinical practice. Galen criticised him for refusing to pronounce on the nature of the primary bodies. Moreover Herophilos accepted a major role for individual variation in constitution and physiology: a conclusion derived from clinical experience and which required a flexible and empirical approach, based on such clinical experience, to diagnosis and treatment. Thus he used clinical examples to support therapeutic and diagnostic claims, for example that menstruation is harmful to some and helpful to others.

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60 (1990) 213f.
62 Galen De compositione medicamentorum secundum locos 3.1 (12.619 Kühn) = T59b, c.f. ibid. 3.1 (12.613 Kühn) = T250 for the differentiation of headaches on the basis of causes and the presumably consequent differences between the headaches' natures and treatments.
63 De methodo medendi 7.2 (10.461-2 Kühn).
64 Soranos Gynaecia 1.27.2-3 (CMG 4, 17.27-9) = T203.
Unlike Erasistratos he also accepted the notion of degrees of health, a concept which invited attacks based on the Sorites paradox, but which tends to emerge from and be relevant to clinical experience.\textsuperscript{65}

To conclude, Herophilos’ provisional theories of physiology and pathology could do much to elucidate clinical experience, and to subsume variation under relatively reliable general principles, but they were not sufficient to reliably explain all individual variation. Where the theory was insecure or the φαυνόμενα did not meet the theoretical requirements, the φαυνόμενα were ideally supposed to be given credence over the theory. The apparent inconsistency of which Galen accuses him is in fact largely due to confused later interpretation of a methodology that is sensitive to epistemological insecurity.

Herophilos’ epistemology, like that of Diokles’, demonstrates the continuity of Greek medical thought, both in its close relation with philosophy, and in the emphasis on the need to justify theoretical speculation, the validity and use of which is seen as problematic. Simultaneously it illustrates the competitive individualism of medical practice in taking a distinctive route through this familiar terrain. A physician’s personal take on medical issues, his epistemological arguments and physiological systems, serves to position him in the intellectual world in which he works and upon which he relies for patients and perhaps for other forms of patronage. They present his claim to authority in a certain intellectual milieu. Herophilos’ places him at the sceptical-cautious end of the medical spectrum.

Erasistratos

Erasistratos, from the city of Iulis on Keos, was a younger near-contemporary of Herophilos, though estimates and evidence on his exact dates vary.\textsuperscript{66}

\textsuperscript{65} Caelius Aurelianus \textit{Medicinae responsiones: De salutaribus praeeptibus} 10 (\textit{Anecdota Graeca et Grecolatina} ed. V. Rose vol. 2 (Berlin, 1870 repr. 1963) 197) = T207.

\textsuperscript{66} Reports of his family and professional connections are on pp. 124-7.
There is evidence from the first century CE that Erasistratos’ method involved starting with the observation (παρατήρησις) of appearances (φαινόμενα). The physician proceeded to a comprehension of hidden causes visible only to reason (τὰ λόγω θεωρήματα). Cases of individual afflictions are comprehensible as a class (κατὰ γένος), and knowledge of such generic causes is important for clinical decisions.

The observations that suggested and confirmed theory were not only those presented to Erasistratos in the normal course of events. In the extant sources on ancient medicine Erasistratos is repeatedly characterised as utilising ‘experimentation’, a known but relatively rare procedure in most forms of ancient science including medicine. Erasistratos’ use of it perhaps demonstrates the influence of Alexandria’s mechanists and physical theorists.

In the following list I have used the term ‘hypothesis’ to signify the idea or argument allegedly discovered or demonstrated by the ‘experiment’ in each case. It should not be taken to mean that the experiment was deliberately carried out to test a specific hypothesis, or that this was Erasistratos’ terminology.

**hypothesis:** (probably) that the arteries dilate because they are filled and not vice versa. **experiment** (cautiously reconstructed from Galen’s description of his own

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67 Ps.-Dioskorides (51 Sprengel) and Anonymus Londinensis 21.23-6. The Anonymus Londinensis papyrus was probably written in the first century CE and was found in Egypt, though it did not necessarily originate there. It comprises three distinct sections, of which the second section is a doxography on doctors and medically-inclined philosophers of the fourth and fifth centuries. This section circulated in the second century CE under the name of Aristotle, though then believed to have been written by his student Meno. All that can be reliably ascertained is that the material is indeed from a Peripatetic context. For the sake of convenience this section will henceforth be referred to as the ‘Menoeina.’ To complicate matters, this work has not been merely reproduced by the author of the Anonymus Londinensis, but at times reinterpreted for his own purposes. The third section is on Hellenistic physicians: see Manetti (1999).

68 For the term ‘experiment’ in the context of ancient medicine see von Staden (1975) 180 and Lloyd (1991) 70-3.

69 See especially Philo Belopoeica 50.27 (p.108 Marsden): “πολλὰ δὲ καὶ διὰ τῆς πείρας εὑρίσκεται.”

70 Anonymus Londinensis 33.44: καὶ Ἑρασίστρατος πειράται κατασκευάζειν τὸ προτεθέν.
experiment): insert tube into an exposed artery and observe that the pulse continues in the artery below the tube.\textsuperscript{71}

\textbf{hypothesis:} continuous emanations of finer bodily elements from the entire body occur without an external cause. \textbf{experiment:} weigh a bird and its excreta without feeding it over a period of time in order to establish if there is any difference between the bird's starting weight and the combined totals of the starved bird and its excreta at the end.\textsuperscript{72}

\textbf{hypothesis:} the nerves conduct both senses and motion; the sensory and motor nerves are distinct and both originate in the dura mater, cerebrum or cerebellum. \textbf{experiment:} Erasistratos carried out incisions in the spinal cord to locate the correspondences between parts of the cord and various kinds of paralysis.\textsuperscript{73}

\textbf{hypothesis:} void exists. \textbf{experiment:} submerge a tube in water, empty out the air in it, and observe the contiguous portion of water immediately moving into the space from which the air had been removed.\textsuperscript{74}

\textbf{hypothesis:} the liver is the part affected in dropsy. \textbf{experiment:} dissection.\textsuperscript{75}

In three of these 'experiments' the test is in fact limited to proving one out of at best two alternatives, when more than two are conceivable. In each case the outcome of the experiment would have been affected by Erasistratos' expectations. Galen, who preferred the opposite hypothesis in case 1, got the opposite result when he carried out the experiment. It is also unclear whether the experiments were actually carried out, or whether they were rhetorically proposed as prospective verifications.\textsuperscript{76} Yet it is important that Erasistratos appealed so often to at least the possibility of testing.

\textsuperscript{71} Galen \textit{De anatomicis administrationibus} 7.16 (2.646-8 Kühn).
\textsuperscript{72} Anonymus Londinensis 33.44-51.
\textsuperscript{73} Galen \textit{De placitis Hippocratis et Platonis} 3.32 (CMG 5.4.1.2, 446.22).
\textsuperscript{74} Galen \textit{De naturalibus facultatibus} 2.1 (\textit{Scripta Minora} 3.154-5). It is not certain that Erasistratos performed this experiment, see n. 81.
\textsuperscript{75} Caelius Aurelianus \textit{TP} 3.111 (CML 6.1.2, 744.33ff).
\textsuperscript{76} The astronomer Ptolemaios in the second century CE corrected the results of his optical experiments to fit the expected theory: see Lloyd (1973) 135.
The interpretation of such observations was carried out from a teleological perspective. According to Galen, Erasistratos said that nature does nothing in vain ("μιὰ την"), and according to Plutarch that nature "οὐδέν...ἐξουσία ῥωπικόν." Galen’s claim that such remarks equate to a rhetorical cover-up of Erasistratos’ true non-teleological position is a polemical exaggeration or misinterpretation.

As several commentators have argued, Erasistratos’ teleology is in fact a limited and mechanistic one. According to Galen, “Erasistratos... thinks that all parts of the body are both well placed and well shaped by nature”, i.e. that their conformation is such that they are able to function usefully and in appropriate relation to other parts. This does not necessarily mean that Erasistratos assumes every part must be perfectly fitted to a purpose, that there are no accidental by-products that are themselves functionless, or that in every case any such purpose will be identifiable by the physician. Thus Galen’s complaint that Erasistratos failed to explain the functions of the spleen, omentum, renal arteries, and yellow bile does not contradict the suggestion that Erasistratos’ teleology consisted of a general assumption that the parts of the body were in normal circumstances well suited to keeping the body functioning.

For Erasistratos the point of teleology seems to have been the design rather than the designer. Teleology was chiefly important as a useful heuristic tool in interpreting anatomical structure, rather than as a philosophical or theological principle. It justified analysing the finished product in terms of how it might contribute to beneficial physiological processes, helping Erasistratos to develop a general theory based on the anatomical and physiological phenomena.

Such causal explanation, as the text cited above argued, was not only possible but also vital to medical practice. Although he does allow a role for empirical experience in

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77 Galen De naturalibus facultatibus 2.4 (Scripta Minora 3.167) c.f. De usu partibus 7.8 (1.390 Helmreich); Plutarch De amore prolis 2.495c.111.
78 De naturalibus facultatibus 2.3 (Scripta Minora 3.159.26-160.1).
79 De atra bile 7.3 (CMG 5.4.1.1, 85.11); De naturalibus facultatibus 2.4 (Scripta Minora 3.167-8).
minor complaints, Erasistratos laid greater emphasis on seeing by reason. All empirical evidence is subsumed under theory and used to justify that theory or at least to be explained (away) by it. The discovery of the hidden explains a host of apparently individualised and often chaotic phenomena in terms of a very few generic substances and processes. This clarification of the nature of disease ideally makes its diagnosis, prognosis and treatment less provisional and error-prone, enabling the improvement of clinical practice.

For this purpose only a self-sufficient model of physiology-pathology, invulnerable to clinical anomaly and epistemologically secure, would be adequate. In addition to observation, test, and active investigation into the \( \phi \alpha \nu \omega \mu \epsilon \nu \alpha \) of the body, Erasistratos' theoretical construct utilised principles and models of physical behaviour developed in other domains of expertise. The role of void in the theories of the Peripatetic Strato are often thought to have influenced him, either directly or through the mechanists' models of pneumatic and hydraulic behaviour.\(^{31}\) Certainly according to both Strato and Erasistratos massed void is prevented by the principle of \( \pi \rho \omicron \varsigma \ \tau \delta \ \kappa \epsilon \nu \omicron \omicron \mu \epsilon \nu \omicron \ \acute {a} \kappa \omicron \lambda \omicron \omicron \omicron \omicron \alpha \). Known since medieval times as \textit{horror vacui}. Scholars have

\(^{30}\) Galen \textit{De sectis} 5 (Scripta Minora 3.10).

\(^{31}\) This line of interpretation began with Diels' argument that the preface to Hero of Alexandria's \textit{Pneumática} was ultimately derived from Strato, via the third century mechanists Ktesibios of Alexandria and Philo of Byzantion. This is itself no longer a tenable theory in its entirety, and Berryman (1997) has gone so far as to argue that all these figures had different approaches to the same problematic phenomenon of motion into empty spaces. Moreover in spite of frequent claims that Erasistratos had a Stratonesque theory of interstitial void existing in between particles of matter, all that can be securely said is that according to Galen he denied the existence of massed, continuous void: \textit{De usu respirationis} 2 (4.474 Kühn). Indeed this polemical text, which presents Erasistratos as in dialogue with "opponents," implies that Erasistratos also denied the possibility of interstitial void. See Furley and Wilkie (1984) 32-5; Vallance (1990) 62ff. But von Staden (1996) 92 and n. 47 asserts that Galen's description of an experiment which demonstrates the existence of void was carried out by Erasistratos: \textit{De naturalibus facultatibus} 2.1 (Scripta Minora 3.154-5). He points out the similarity of this experiment to that carried out by early Alexandrian mechanists and cited in Peripatetic writers, c.f. Gottschalk (1965) 129. But the actual text does not seem to me to definitely indicate that Erasistratos carried out this experiment, which might have been added by Galen in order to illustrate the criticism of Erasistratos, or more probably by Asklepiades of Bithynia whose argument Galen is describing.

Von Staden (1997) further accepts that the suggestion that Erasistratos was directly influenced by Strato is a plausible one. In support of this Tybjerg (2000) agrees with Vegetti (1995) and Von Staden (1996) that philosophy, medicine and mechanics were connected disciplines in the third century.
argued that much of Erasistratos’ physiology was analogous to, and based upon, the technology being developed in Alexandria at that time by the mechanists (see n. 166).

To sum up, Erasistratos’ epistemological approach to medicine assumed knowledge was achievable. He used observation and an often aggressive approach to investigation to suggest and confirm theory. This is far from being a particularly empirical approach, as his understanding was motivated and directed by a systematic set of expectations about the nature of the universe and the kinds of structures within it. His extant fragments suggest a physician far more confident than Herophilos in the epistemological worth of theory and its capacity to explain both physiology and pathology for all clinical cases. Erasistratos’ recognition of the difficulty of this enterprise serves also as a rhetorical assertion as to the brilliance of whoever succeeds in it:

γίνεται δὲ καὶ περὶ τὰς ζητήσεις ὑμῶν. ὦ μὲν γὰρ άσυνήθεις τὸ παράπαν τοῦ ζητήσαν ἐν ταῖς πρώταις κειμέναι τῆς διανοίας τοῦλανται καὶ ἀποκοτούνται καὶ εὐθέως αὔφιστανται τοῦ ζητεῖν κοπιῶντες τῇ διανοίᾳ καὶ ἔξαδυναντοῦντες οὐχ ἠττον ὁσοὶ πρὸς ἰσόμοις ἀσυνήθεις ὅντες προσέρχονται. ὥ δὲ συνήθης τῷ ζητεῖν πάντη διανοοῦμενὸς τε καὶ ζητῶν τῇ διανοίᾳ καὶ μεταφέρομενος ἐπὶ πολλοὺς τόπους οὐκ αὔφισταται τῆς ζητήσεως, οὐκ ὅτι ἐν μέρει ἡμέρας ἀλλ’ οὐδὲ ἐν παντὶ βίῳ ἀναπαύων τὴν ζητήσαν. καὶ μεταφέρων ἐπὶ ἀλλὰς ἐννοιας τὴν διάνοιαν, οὐκ ἀλλοτρίας μὲν τοῦ ζητομένου, προβάλλει ἐώς ἐπὶ τὸ προκείμενον ἔλθειν.

Those who are completely unused to inquiry are, in the first exercise of their mind, blinded and dazed and straightway leave off the inquiry from mental fatigue and an incapacity that is no less than that of those who enter races without being used to them. But the man who is used to inquiry tries every possible loophole as he conducts his search and turns in every direction and so far from giving up the inquiry in the space of a day, does not cease his search throughout his life. Directing his attention to one idea after another that is germane to what is being investigated, he presses on until he arrives at his goal.\footnote{Galen De consuetudinibus (115.13-116.2 Dietz).}
Dissection and theory

For both Herophilos and Erasistratos the appearances included anatomical ones. Dissection was used to confirm theories, or at least to justify them:

First then, as Herophilos says, tearing open bodies, which the Greeks called dissection (ἀνατομή), is a witness to this. For the internal parts of the seminal vessels which are also at a more remote distance [sc. from the genitalia] appear full of blood, whereas the ones that follow next are changed very much compared to the aforementioned ones, and the lower, more accessible ones have the colour of seed. This proves (quo probatur) that [...] \(^{10}\)

The possibility of using dissection as a means of discovery and mode of justification for naturalistic explanations appeared in both the philosophical and the medical literature as early as the late fifth or early fourth century. \(^{84}\) It did not come into regular use until Aristotle in the mid fourth century, as it is not an unproblematic technique. Even setting aside cultural and emotional objections to its practice, it is not immediately and obviously revelatory. Simply because internal anatomical structures and substances are unfamiliar it takes long and repeated acquaintance to actually perceive them with any clarity. Then again this need for long practice is related to the observer's developing awareness of what he expects to see - and thus runs the risk of the observer observing only what he expects.

Nonetheless the fragments of the fourth century physicians Diokles of Karystos and Praxagoras of Kos indicate that dissection was in use among elite physicians in the generations contemporaneous with and subsequent to Aristotle. Although for many it remained a technique invoked more often in rhetoric than in actuality, nonetheless it seems that by the late fourth and third centuries anatomical

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\(^{10}\) Vindician (?) Fragmentum Bruxellenses de semine 1 = TL91 II. 7-12.

\(^{84}\) See Lloyd (1979) 156-9 for a summary of dissection before the fourth century. Note that the Hippocratic text De cordis actually dates from the third century.
findings were an increasingly privileged class of empirical phenomena, providing evidence of physiological and pathological processes.\textsuperscript{45}

One reason for this is that, as argued above, physicians competed to justify their theories about the mechanisms and structures of the body. The theoretical domain open to both physicians and other investigators into nature comprised a relatively small number of concepts about the substances and processes involved in physiology and pathology. Terms like χῦμοι (humours), περισσώματα (residues of food), and πνεύμα (breath), however broad their referents, were in use throughout Greek medicine of the classical, Hellenistic and Roman periods. Similarly general theoretical processes and states were imbalance, invasion, blockage, degeneration, the movement of internal substances around the body, external environmental triggers, inflammation, and purge. All these concepts differed from author to author in their nature, number and exact role in disease aetiology. There was no agreed definition of any beyond some similarities in their roles: περισσώματα, for instance, implies products derived from the digestive process that were probably pathological or potentially so. Such broad concepts could be expressed and combined in a variety of ways to produce distinctive theories.

Nonetheless the shared and general nature of the terms involved was a factor in the intense competition to justify one version over another. Theoretical Greek medicine was dominated by major disagreements over a few questions, the answers to which usually involved variants on this relatively limited number of physiological and pathological terms, concepts and models. Given that clinical results and much of clinical practice differed little from one physician to another, much of this competition was methodological. It forced innovation and development not just in

\textsuperscript{45} A practical motivation for dissection and the acquisition of anatomical knowledge is supplied by the widespread practise of venesection and other surgical techniques. All dissection in the Hippocratic corpus is directly related to treatment. Authors of the later Hellenistic and Roman periods also emphasise the usefulness of dissection in surgery as its role in medicine declined sharply. E.g. the Herophilean Hegetor, Hg. 3 (von Staden, 1989, 514); Galen De anatomicis administrationibus 2.2 (2.286-7 Kühn).
the epistemological arguments for a certain approach, but also in the nature of the evidence upon which theoretical constructs were based and by which they were justified.

In this situation theoretical speculation and anatomical discovery had a reciprocal relationship. Theoretical competitiveness and controversy often directed the goals of dissection and the interpretation of its findings. Conversely anatomical evidence, sometimes gained from dissection, supplied information that enabled the physician to be more selective about the available theoretical alternatives to certain controversial questions about the structure of the body and its processes, and to explain them in greater detail. This was particularly so in questions where anatomical investigation was geared to eliminating one alternative over another. This point can be illustrated by two notable discoveries by the Alexandrian anatomists in the third century.

The discovery of the heart valves made the Aristotelian theory of a unidirectional flow away from the heart and through all the vessels impossible. This had an impact on the long-standing debate over the roles and movements of πνεύμα and blood in the vessels and heart. Although there were widely variant answers to this question, the questions themselves formed a rough consensus which was itself partially based upon the use of dissection.

The second example is the whereabouts and nature of the ἱγέμονικόν. Crucial to the issue of the location of the mind were the means by which perception and the will were believed to travel through the body, and vice versa. There was a long lineage of debate within Greek philosophy and medicine over whether this command centre was the head or the heart. Plato for example opted for the former, Aristotle and Diokles for the latter. All assumed that the physiology is relevant to the psychology. Most recently Praxagoras, placing both the psyche and the origin of the nerves in the heart, claimed that the arteries narrowed into ‘νεῦρα.’ This claim was in

Furley and Wilkie (1984) 27. The valves were discovered by Herophilos according to von Staden (1996) 178. Furley and Wilkie (1984) 26 suggest that Erasistratos may have discovered the valves. See p. 152 and n. 98.
fact an anatomical elaboration of Aristotle’s assertion that the heart is the source of the νεύρα, though to Galen’s and the modern eye it reveals rather the limitations of Praxagoras’ use of dissection.87

The observations of the Alexandrian anatomists seem to have been too detailed to allow these various misconceptions to stand. They were able to demonstrate that the nervous system was distinct from both the venal and arterial systems, was centred in the brain not the heart, and were even able to distinguish between the motor and sensory nerves.88 This was the clearest anatomical evidence so far that the sensory and motor functions originated in the head, not the heart.

The discoveries of the nerves and of the heart valves were consequences of the greatly extended use of anatomical investigation in third century Alexandria. The Alexandrian anatomists, perhaps influenced by the research tradition of the Peripatos, were systematic about their investigations into many of the workings of the human body. They employed dissection and vivisection as an important additional mode of discovery and justification, particularly in clarifying questions of anatomical arrangement which related to certain philosophical-physiological questions, notably those concerning the workings of the perceptual and/or vascular system, breathing, and reproduction. Yet although dissection’s appeal and authority had increased it was not widely applied to or thought necessary for most pathological theory or therapeutic practice. The theories of the anatomists will be explored in more detail below, but I would like to note certain aspects of their approach here.

Herophilus’ physiology is justified partly in terms of his anatomical findings, but what can be reconstructed of his pathology and therapeutic approach is not notably

87 Galen De placitis Hippocratis et Platonis 1.6.14-19 (CMG 5.4.1.2, 80.23ff.). Νεύρα could mean not only nerves but also tendons and muscles, a class described by Herophilus as the “νευρόλογος” von Staden (1989) 256.
88 For details see p. 152 and n. 97.
dependent upon anatomical investigation. Even his emphasis upon the diagnostic uses of the pulse, while it might employ a causal explanation derived from anatomical investigation, does not necessitate or derive from dissection.

Erasistratos does extend his anatomical findings into a general and innovative physiological-pathological explanation that he seems to have applied consistently to therapy. Yet he also bases his system on concepts familiar from previous medical and philosophical thought and from other contemporary disciplines, often to explain (away) anatomical and physiological phenomena.

Thus the clarification of anatomy had little impact on physiological theories. These remained highly individualised, and anatomical findings did not as a rule supersede or overturn previously authoritative arguments and explanations, or necessarily relate closely to controversial views. Indeed even the discovery of the nerves and the demonstration that the ἡγεμόνικόν was located in the brain, though it caused a considerable stir, was not universally accepted. Thus dissection was of limited use in the establishment of any kind of consensus about physiological theory or therapeutic practice.

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89 In the extant sources there are no references to Herophilos employing surgery as a therapeutic technique, apart perhaps from in gynaecology: Tertullian (T65) mentions a "foetus-slayer." It would be surprising if Herophilos did not employ surgery, at least in traditional operations such as reductions and cutting for stone. If so he presumably made use of anatomical knowledge and expertise gained through dissection and vivisection.


91 For example the Stoic Khrysippos continued to place the ἡγεμόνικόν in the heart some fifty years after the discovery of the nerves: Tieleman (1996) 138ff. This was not on the grounds that the anatomists' observations were incorrect, but because Stoic epistemology does not privilege this kind of evidence above other kinds, such as that of the poets.
3.3.3: Consensus and divergence

A description of what is known or can be plausibly reconstructed about the physiology and pathology of Herophilos and Erasistratos shows how their different interpretations of similar evidence are generally opposed to or exclusive of each other. It is the situation thus created in Hellenistic Alexandria, it will be argued later, that enabled the medical αἱρέσις to emerge.

Herophilos and Erasistratos are alike in their use of dissection, not just in virtue of the fact that they both employed it but in their actual practices. They are both said to have used vivisection on living criminals. They are the first physicians to have carried out a systematic programme of dissection involving humans, though the bulk of their work must have been carried out on animals.\(^92\) Both engaged in comparative anatomy.\(^93\) Both are said to have carried out post mortems for the pathological purpose of discovering how the individual died, rather than for acquiring evidence on general human anatomy and physiology.\(^94\)

The detail and exactitude of their findings were unprecedented. Galen complains about the inadequacies of dissection in the pre-Hellenistic period:

\[\text{Diokles, Praxagoras, Phylotimos and nearly all the other ancient physicians...studied anatomy in a rather general way and not with exactness (διόσχερέστερον γάρ πως καὶ οὐκ ἀκρίβως περὶ τὰ ἀνατομικὰ ἔσχον).}\(^95\)

In contrast Herophilos is specifically said to have measured the human intestines, and the measurement of one section provided its name both in antiquity and today: the

\(^{92}\) There is some indication that Herophilos' conclusions about certain features and organs, including much or all neuroanatomy, were primarily or entirely based on artiodactyls like the ox and the pig: von Staden (1989) 158-9.


\(^{94}\) One report is the sole evidence for such post mortem examinations by both Herophilos and Erasistratos: Vindician Gynaecia preface (vel. 2) cod. L = T64a. See von Staden (1989) 143 for reasons as to why his account, while unsupported, is plausible.

\(^{95}\) Galen De uteri dissectione 9.5 (CMG 5.2.1, 48.24-50.1).
duodenum is twelve fingers long (δώδεκαδέκτυλον). Herophilos probably distinguished between the motor and sensory nerves, and he gave the first detailed anatomical description of the former. Erasistratos also made this distinction. The details of Herophilos' opinions on the heart valves are unclear, but Galen's comments suggest a limited knowledge which was later improved upon by Erasistratos.

These examples illustrate how dissection did enable a rough but authoritative consensus to be established within elite medical circles on the structures of the body. And as noted above, where theoretical issues depended very closely on the demonstration of which of a few anatomical alternatives was to be preferred, dissection provided strong evidence in favour of one. The similarities between the two Alexandrian anatomists tend therefore to be concentrated in the domain of anatomy itself.

Their physiological and pathological theories are on the other hand sharply divergent in almost every aspect. Nonetheless some of the same broad concepts are involved in both, though often playing different roles in different locations.

Both retain the idea of πνεῦμα's presence in the body and utilise it to explain certain faculties. Herophilos' views are particularly difficult to extract from the fragmentary evidence, but it seems that "pneumatic motion" was closely involved in his definition of a living being, while πνεῦμα in a different context may have carried sensation and perception as sensory πνεῦμα. The functions of πνεῦμα in Erasistratos' account also included the perceptible faculties, and at least some of the body's activities such as digestion.

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96 Galen De venarum arteriarumque dissectione 1 (2.780-1 Kühn) = T96, c.f. T97a-b, 98ab, 99 and esp. 100a-b. See Brunschwig and Lloyd (2000) 239.
97 Rufus De anatomia partium hominis 71-5 = T81.
98 De plactis Hippocratis et Platonis 1.10.4 (CMG 5.4.1.2, 97) = T119.
99 Ps.-Plutarch Moralia 907c-d = T202b, c.f. T202a,c and see T145b.
100 Ps.-Galen Introductio 9 (14.697 Kühn); De experientia medica 11 (103 Walzer).
The cause and function of the pulse had been an issue in medicine and philosophy for some time.\textsuperscript{101} As with the vein-artery distinction itself, the terms of the debate had recently been slightly altered, by Praxagoras’ observation that pulsation is a phenomenon of the arteries only.\textsuperscript{102}

According to Herophilos the heart transmits the δύναμις to dilate and contract to the arteries through their coats.\textsuperscript{103} When they dilate they draw in a substance, perhaps a mixture of πνεῦμα and blood, presumably from the heart or from wherever else is possible.\textsuperscript{104}

There were four δύναμεις that govern living things.\textsuperscript{105} Three of these must have been the natural ability of the heart and lungs to dilate and contract, along with the capacity of the “nerve-like things,” presumably tendons and muscles, to cause motion. The fourth may have been something to do with the conversion of food into nutriment, or its further transformation into flesh; or perhaps it was innate to the sensory nerves.

While Herophilos’ physiological system relies on these natural powers, Erasistratos argued for a more mechanical model. This depended on πρὸς τὸ κενοῖμενον ἀκολούθον, the principle of physics which stated that whenever (some kind of) void exists in a body it pulls in the nearest movable substance.\textsuperscript{106} In particular it enabled Erasistratos to argue that the heart acts as a pump with intake and out-take valves. It expands like a “smith’s bellows” to draw matter in.\textsuperscript{107} The resultant increased pressure in the heart turns the valves of the outgoing vessels from closed to open. With the intake valves closed the heart then contracts, forcing the matter out and through the vascular system. On this model the cause of the arterial pulse is the filling of the arteries at each diastole by the substance within them.

\textsuperscript{101} See e.g. Aristotle Parva Naturalia 479a30ff.
\textsuperscript{102} Galen De placitis Hippocratis et Platonis 6.7.3 (CMG 5.4.1.2, 406.5-6).
\textsuperscript{103} Galen De pulsuum differentiation 4.2 (8.702-3 Kühn) = T155.
\textsuperscript{104} Ibid. 4.6 (8.733 Kühn) = T144.
\textsuperscript{105} Ibid. 2.3 (8.869-72 Kühn) = T184.
\textsuperscript{106} See n. 81.
\textsuperscript{107} Galen An in arteriis natura sanguis contineatur 7 (4.731 Kühn).
Herophilos and Erasistratos also adopted different positions on long-standing questions concerning the roles and locations of blood and πνεύμα in the vessels of the body. In particular they disagreed on the more recent corollary to this argument suggested by a systematic distinction between arteries and veins and Praxagoras’ claim that πνεύμα and blood were likewise separated. Neither dissection nor any other mode of argument proved conclusive on this point.

Anonymus Londinensis implies that the arteries contained blood as well as pneuma for Herophilos. But for Erasistratos the left ventricle of the heart and the arteries contain only πνεύμα. The right side and the veins contain only blood. The veins and the arteries are connected by the ἀναστομώσεις, tiny and therefore invisible valves at the extreme ends of veins and arteries. These connections are normally closed.

Erasistratos’ physiology depended almost entirely upon the principle of πρὸς τὸ κενοῦμενον ἀκολουθία. It was invoked to explain, inter alia, appetite, digestion, nourishment, the secretion of bile, blood flow, the secretion of urine, and respiration. Indeed all processes within the body on every scale could be accounted for by a combination of πρὸς τὸ κενοῦμενον ἀκολουθία together with nutriment, πνεύμα and the three kinds of tissues that are visible to the eye: vein, artery and nerve. Visible nerves were themselves composed of imperceptibly small versions of these three tissues. They carried out the same functions of nourishment, motor agency and sensory agency respectively, on the microscopic scale as on the macroscopic.

109 De venae sectione adversus Erasistratum 3 (11.153 Kühn).
110 For references see von Staden (1975) 93 n. 32.
111 Galen De naturalibus faculatibus 2.6 (Scripta Minora 3.175-6).
The same physical mechanism was behind the process of \( \pi \rho \varepsilon \mu \pi \tau \omega \varsigma \), which according to Erasistratos was the cause of all diseases.\(^{112}\) The following account is reconstructed from Galen’s testimony. It is difficult to tell the extent to which Galen may have distorted Erasistratos’ account, but the explanation given below is compatible with other indications of Erasistratos’ thought.

Too much food produces a πληθώρα of blood. This causes the veins to become distended, and forces open the \( \acute{\alpha} \nu \alpha \sigma \tau \omicron \mu \omega \varsigma \epsilon \iota \varsigma \). The blood then overflows into the arteries. This process, the transference or falling of the blood into the arteries, is called \( \pi \rho \varepsilon \mu \pi \tau \omega \varsigma \). Although the following stages are not as clear as they might be, the most plausible reconstruction of the text has the invasive blood seeping towards the heart. This compresses and pushes back the πυεύμα, forcing the heart to try harder and producing the symptom of a racing heart, before it succeeds in reversing the flow of the invasive blood and pushing it into, or keeping it penned in, the extremities (arterioles) of the arteries. Here the compressed blood causes inflammation. Fever, a concomitant of disease and not a disease itself, is subsequent to the inflammation.\(^{113}\)

This comprehensive physiological-pathological theory relied heavily upon deduction and analogy from the visible to the invisible. Erasistratos had deduced the existence of the \( \acute{\alpha} \nu \alpha \sigma \tau \omicron \mu \omega \varsigma \) in similar fashion, perhaps as the only way to account for the observable presence of blood in the arteries and elsewhere during pathological experiences. Even πρὸς τὸ κενοὺμενον \( \acute{\alpha} \kappa \alpha \lambda \omicron \omicron \omicron \alpha \) itself is essentially an invisible process, deduced by analogy with mechanical behaviour outside the body, and dependent upon a highly controvertible interpretation of the phenomena. One obvious problem with the claim that only πυεύμα flows through the arteries is the commonplace observation that arteries bleed when cut, suggesting they contain blood.

\(^{112}\) Ps.-Galen Introductio 13 (14.728 Kühn).
\(^{113}\) The relevant texts are Galen De antidotos 2.11.12, De venae sect. 3, An in arteriis 5 (14.174-6, 11.153-5, 4.718 Kühn). I have followed the interpretation of Hankinson (1998b) 258-263.
Erasistratos or his successors accounted for this apparent anomaly with the argument that πνεῦμα in the artery in question is pulled out into the atmosphere leaving a void behind it. This void pulls in blood from the veins through the ἀναστομώσεις, which though normally closed are opened by the pressures involved. Unsurprisingly it remained a heavily disputed view, not least by Galen.\textsuperscript{114}

Again, for Erasistratos the particular nature and symptoms of each disease are the localised aspects of an overarching single causative process. His one-theory-fits-all approach to bodily mechanism, health, and disease subsumed many empirical variations as methodologically unimportant. In the light of this it is interesting to consider his assertion that alterations in external temperature do not constitute causes of disease because they are not invariably followed by disease and do not persist at the time of illness.\textsuperscript{115} This is why overeating and the resultant πληθώρα of digested blood are not strictly causes of disease. Even though πληθώρα is the trigger of παρέμπτωσις, it is not the cause of the παρέμπτωσις because it is not inevitably followed by παρέμπτωσις.

The physician, for instance, can intervene with purgatives to drain the πληθώρα before παρέμπτωσις occurs, exemplifying Erasistratos’ remark above (p. 135) on the clinical relevance of understanding the underlying nature of disease. Erasistratos is also reported to have said that the cause as well as the symptoms of disease should be treated. Together these reports suggest an explanation as to why he withheld the status of cause from such non-sufficient antecedent conditions. The difficulty is that if the πληθώρα is treated quickly enough, or if it diminishes on its own, before παρέμπτωσις has occurred, there will be no symptoms of disease and indeed no disease state at all. Therefore, the πληθώρα cannot be said to be the cause of disease state F, since as F never occurred it could hardly have been caused.

Alternatively, παρέμπτωσις takes place. At this stage, though, removal of the πληθώρα will not effect removal of the disease state and its symptoms. Erasistratos

\textsuperscript{114} Especially in An in arteris natura sanguis contineatur.
\textsuperscript{115} See Galen De causis procatarcticos 13.162ff esp. 167 (CMG Supple. 2, 41.28ff).
appears to have thought that if a cause can be removed without removing the effect of the cause, it cannot be a genuine cause. That is, he rejects the notion of transitive cause.116 There is nothing about the nature of πληθώρα that makes παρέμπτωσις or disease an inevitable consequence, while παρέμπτωσις accounts fully for disease and is therefore its sufficient cause.

For Erasistratos, it seems, the cause is the disease which instantiates it, visible only through its associated signs or symptoms. That is, the disease is the current state of things in that part of nature that constitutes the body, just as health is the alternative state. There are only two states for the body to be in which are important for its clinical status: either blood is in the arteries or it is not, either a person is diseased or he is not. This explains why, unlike Herophilos, Erasistratos did not believe in quantitative degrees of health or sickness.

I have gone into such detail on Erasistratos’ causal theory, and here rather than earlier, in order to point out that his epistemological approach is both innovative and closely related to his physio-pathological theory. This is not to say that Erasistratos was innovative in every aspect. On the contrary his separation of blood and πνεῦμα into the veins and arteries respectively was a developed version of Praxagoras’ doctrine. Another Erasistratean idea with a history in Greek medicine is that of breathing through tiny passages in the skin.117 Erasistratos individualised its form and radically extended it to include pores throughout the body. Πνεῦμα, having circulated throughout the body, passes out through those ἀραὶματα that are in the skin.118

The argument is that Erasistratos’ approach and theory were interdependent and that his system as a whole is ambitious, integrated, complete and relatively

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116 Hankinson (1998a?) 305.
117 Plato *Timaeus* 791b1–c9; (probably) Anonymus Londinensis 20.42.7 on Philistion; Frede (1987) 27 argues that such theories began with Alkmaeon.
118 Anonymus Londinensis 23.20–3. In fact, Anonymus claims that more pneuma is exhaled than inhaled. This happens because although some pneuma is expended in the body, some part of the body also adds to the exhaled pneuma. The theory may be connected to the exhalations theory which Erasistratos tested with his bird experiment (see p. 142), but it is difficult to grasp exactly what was thought to be occurring here.
internally consistent. It is also highly controversial and very different in many aspects from other theories, including those of Herophilos, rendering it exclusive. This effect is exaggerated by the co-dependence of its concepts, notably the prevalence of πρὸς τὸ κενόμενον ἀκολουθία, which made it difficult to adopt any one part of Erasistratos' conception of how the body worked without also adopting the rest of it.

Herophilos' theory of disease also envisages a basic constituent of normal physiology as causing the disruption of normal processes when triggered by certain factors. But the constituent itself, and the way in which it affects the body, is entirely different.

Several references provide conclusive evidence that Herophilos had a theory of humours, and that this played the principal role in both his physiology and pathology.195 Humoural theory is of course an idea that dates back to the earliest medical theorists, though Herophilos' explanations would undoubtedly have presented an individualised version of their nature, number, causes and effects. In other respects he diverged from traditional accounts altogether. The notion of a natural δύναμις to explain respiration was distinctive in not involving the heart and the functions of cooling or heating. His theory of voluntary motion is also highly innovative.

Unfortunately the lack of evidence means that the role of the humours in Herophilos' pathology is extremely obscure. Only bits and pieces are known of Herophilos' causal explanations of particular affections, let alone how these relate to any normative physiological theory. A very slight hint comes from Sextus' claim that in cases of fever "flushing, a prominence of the blood vessels, a moist skin, higher temperature, vehemence of the pulses and the rest of the signs" would have been interpreted by Herophilos as a sign of "good blood." This suggests that 'bad blood',

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195 Ps.-Galen Introductio seu medicus 9 (14.698-9 Kühn) = T130 c.f. T132, T205a-c, T133, T223b. Celsus I praef. 14-5 (CML I, 19) = T133 has "moistures" (ὑγρόν, ὑγρότης) rather than humours (χύμοι), but Von Staden (1989) 245-6 points out that these two terms are probably used interchangeably.
perhaps having become bile or phlegm, may have played a role in Herophilos’ pathology.\textsuperscript{120}

Humours are not responsible for all disease. Herophilos is prepared to point to an unseen cause to explain at least one kind of mysterious phenomenon: a sudden death, which “nulla ex manifesta causa venientem,” is due to paralysis of the heart.\textsuperscript{121} Fever, too, can occur with no antecedent cause.\textsuperscript{122} In general Herophilos seems to relate disease to proximate causes in a method dependent on clinical correspondences between certain events, a method reminiscent of empiricism (see 3.3.4). Caelius Aurelianus says that Asklepiades, “like a follower of Herophilos, thinks that indigestion and spoiled food are what must be examined” in looking for the cause of cardiac disorders.\textsuperscript{123} The extraction of a tooth is mentioned as a cause of death.\textsuperscript{124}

Insofar as we can say anything about Herophilos’ pathological theories, it would appear that he used a number of concepts and different explanations for different kinds of problems. His causal analyses did not explain all empirical events in terms of an over-riding single theory of disease, as Erasistratos’ did.

Third century Alexandria, then, saw in the work of Herophilos and Erasistratos often innovative and very different physiological and pathological theories of detail and complexity which were grounded upon and justified by a particular mode of evidence, i.e. dissection, to an unprecedented extent. Ptolemaic Alexandria also saw the emergence of three medical sects: the Empiricists, the Herophileans, and the Erasistrateans.\textsuperscript{125} Two of these were explicitly represented as the continuation of these two anatomists’ work. Another was apparently founded as a reaction against and in

\begin{itemize}
\item \textsuperscript{120} Sextus Empiricus \textit{M} 8.219-20 = T225.
\item \textsuperscript{121} Caelius Aurelianus \textit{TP} 2.1.15 (\textit{CML} 6.1.1, 552.18-19) = T212.
\item \textsuperscript{122} Ps.-Galen \textit{De historia philosophia} 39 (19.343 Külh) = T217: “\textit{Hpóδωστος φησι}” (sic).
\item \textsuperscript{123} Caelius Aurelianus \textit{CP} 2.39.225 (\textit{CML} 6.1.1, 282.5ff.) = T214.
\item \textsuperscript{124} Caelius Aurelianus \textit{TP} 2.4.84 (\textit{CML} 6.1.1, 594.17-18) = T218.
\item \textsuperscript{125} The “\textit{Pneumatist òδρεστος}”, sometimes thought to have become established in the first century, is in fact difficult to define and may well have been a construction of later authors: Lloyd (personal communication). For this reason the discussion concentrates on the three main traditions: the Empiricists, Herophileans and Erasistrateans.
\end{itemize}
explicit opposition to Herophilos as a causal theorist. These items cannot be unrelated.

3.3.4: The medical ἀφρεσίς

The Empiricists

The Empiricist ἀφρεσίς was founded in the third century, probably by Herophilos’ former apprentice Philinos of Kos. The longevity of the school, which lasted until about CE 500, suggests that its distinctive alternative to non-Empiricist medicine was a popular one. Many of the elite physicians known to have lived in Alexandria can be identified as Empiricists: Apollonios ὁ βυζαντινός ἐπικληθεῖς, Diodoros, Zopyros, Herakleides of Tarenton, Ptolemaios of Kyrene, Sarpedon (probably), and Sarapion of Alexandria. Apollonios of Kition seems to have been closely associated with the court of Auletes.

The Empiricists were distinguished from other doctors by their methodology, which represented a rejection of the tradition of medicine as a form of natural philosophy. According to the latter view therapeutic knowledge was at least partially dependent on an understanding of hidden causes. Instead the Empiricists argued that empirical experience, ἐμπειρία, was sufficient for medical knowledge, i.e. for successful therapeutic practice. They insisted on the therapeutic purpose of medicine, its identity as a τέχνη, arguing that “ἀλλὰ μὴ διαλεκτικὴς δείσθαι μὴ δείμαν τέχνη.”

Theoretical knowledge is undiscoverable and if discoverable, irrelevant to the performance of medicine or any other τέχνη.

126 Most of the evidence about the Empiricists comes from later Roman sources, especially Galen. They portray a school of considerable epistemological subtlety and with much in common with the Pyrrhonian sceptics of the first century and later. However Galen remarks that Empiricism was “greatly strengthened” by Menodotus and Sextus Empiricus in the second century CE. So features and arguments known to apply to the Empiricists of the Roman period may not be equally characteristic of Hellenistic Empiricists, especially those of the third and second centuries.

127 Sarapion, another ex-pupil of Herophilos, is also a candidate for the status of founder: Celsus I praef. 10.

128 See Apollonios of Kition In Hippocratis de articulis commentarius 1.1, 2.1, 3.1 (CMG 11.1.1, 10, 38, 64).

129 Galen De sectis 5 (Scripta Minora 3.1.9-10).
This applied not only to causes, to physiological accounts of health and disease, but even to internal organs. The latter do not count as observable \( \varphi \alpha \nu \omicron \mu \varepsilon \nu \varphi \) because the only way of observing internal structures and processes within the body is to interfere with it, either by dissection or vivisection. Since the anatomists could not demonstrate that the very act of interference would not change what was normally concealed, anatomical \( \varphi \alpha \nu \omicron \mu \varepsilon \nu \varphi \) were not necessarily raw nature.

The positive part of the early Empiricist approach was to declare experience sufficient for medical practice, in that it was as least as successful as practice based on alleged theoretical knowledge. Experience teaches the physician that certain things tend to happen after certain other things. The physician bases his diagnosis, prognosis and therapy according to whether these are beneficial or harmful. Empiricists did acknowledge ways in which new correlations and therapies could be discovered, but these methods of discovery were not systematic and would have been quite rare occurrences. If an improvement seems to follow, the physician will employ the therapy again in similar circumstances.\(^{130}\)

Empiricism as a medical sect took an element of methodology common to all ancient physicians, the predictive value of the experience of what tended to happen, and turned it into an exclusive principle. By explicitly designating as epistemologically insecure all explanations that involved things not directly evident to the senses, the Empiricists deliberately limited the domain of the physician to allegedly uninterpreted appearances. Their move required the abolition of deductive reasoning as a tool of therapeutics, even though they admitted that it will occasionally produce beneficial results by chance.

For the Empiricists experience provides a route, almost a path of least resistance, through the medical arena. Since the guide and test of therapy is constituted solely by events, the art of medicine is what not to do: aetiology is

\(^{130}\) The above outline of Empiricism is based on that of Frede (1987).
forbidden and treacherous territory. The physician neither investigates nor experiments, not only in regard to the causes of diseases but also to their cures.

Empiricism is evidently not an approach that puts a premium on innovation, and seems to have assumed that there was not much opportunity or necessity for progress to be made in medicine. Not only were there perhaps no new diseases, a common trope in Hellenistic thought, there were few or no new ways of treating them. The full awareness of current diseases and therapies that is to be gained from clinical experience was therefore enough to produce a physician who was both maximally and sufficiently competent.

The question is why and how the Empiricist αἱρετικός came to exist. The phenomenon of an αἱρετικός has no clear precedent in the history of Greek medicine. That is not to say that explicit and self-conscious medical lineages and associations did not exist in pre-Hellenistic Greece. The ‘Asklepiads’ seem to have been an early cult association and medicine, like other τεχνικοί, tended to be a family profession. The number of physicians identified by ancient authors as Erasistratos’ blood relatives testify to this characteristic existing even among elite physicians of the Hellenistic age. Medicine also had an established form of connection between expert and learners in the form of the teacher-apprentice relationship of a τεχνική. Apprentices of the same physician would often have been relatively similar both in their approach to methodology and in their doctrines.

The emergence of the medical αἱρετικός in the generation after Herophilos and Erasistratos is a departure from these kinds of individual and temporary relationship, though it remains difficult to establish precisely what was entailed by identification as a member of an αἱρετικός. In what follows I shall attempt to trace the process by which these groupings emerged.

131 See e.g. Plutarch Questiones conviviales 8.9.
The observational findings of Erasistratos and Herophilos do not seem to have been widely disputed by their contemporaries or successors. Indeed many of the sceptical responses to anatomical findings assume that the actual observations are correct. The Empiricist objection to dissection is the fact that it alters, or might alter, the structures and processes it is attempting to observe, not that the end observations are liable to misperception.

The dispute is over the meaning of the anatomical observations. The variable ways in which anatomical work could be interpreted goes some way towards explaining why dissection was often identified as a mode of reasoning, not of observation. Although anatomy is derived from the observation of empirical phenomena, it seems always to have been associated in Greek thought with a theoretical conception of the body. Herophilos and Erasistratos used anatomical appearances to postulate unseen processes and substances, and the Empiricists threw out dissection because in their view it was a part of useless causal speculation. Even for non-Empiricists anatomical knowledge, based on dissection, either of the individual dead or of general characteristics, was of no direct relevance to the diagnosis and treatment of a specific living individual. Medical writers from the Hippocratic authors to Galen agreed that chaotic empirical variations between individuals were a feature of medicine that made it difficult and dangerous to theorise.\(^{132}\) The usefulness of dissection depended on the claim that anatomical generalities and the physiological mechanisms based on them could be abstracted and generalised into a single coherent theory which held across this phenomenal noise.

Therefore the problem for the anatomists was that the relative success of dissection as an authoritative mode of discovery which could establish a reasonable consensus only went so far as the anatomical structures themselves. The deductions based on such observations achieved no such agreement, remaining controversial and capable of

\(^{132}\) Note the multitude of factors recorded in the *Epidemiae*, e.g. 3.67 Littré and see Galen *De metodo medendi* 3.7 (10,206 Kühn). The analysis of Erasistratos given above suggests he was a possible exception to this rule.
violently different interpretations. This fact was brought into sharp relief by the investigations of the Alexandrian anatomists.

The account of Herophilos' and Erasistratos' theories given above was a very summary one. Nonetheless it was sufficient to demonstrate how different were many of their physiological and pathological theories, and even their epistemological assumptions. For example both anatomists described the heart and its vessels comprehensively and largely accurately. But according to Erasistratos it was a pump that used separate vessels for blood and \( \pi \nu \epsilon \omicron \mu \alpha \); and according to Herophilos it was activated by a \( \delta \omicron \nu \alpha \mu \varsigma \) and the blood and \( \pi \nu \epsilon \omicron \mu \alpha \) were combined in the same vessels.

This is in spite of the fact that both these physicians employed the technique of dissection, explicitly appealed to both observation and deduction as methodologically authoritative, worked in the same city separated by only a few decades, and in cases of strict observation appear to have reached roughly similar conclusions.\(^{133}\)

Thus the differences in the anatomists' interpretations of the body and disease severely undermined dissection's claims to be an authoritative mode of discovery and justification for theory and therapy. Herophilos' epistemology represents one strategy for dealing with this lack of demonstrable truth: it comprises a version of the long-standing tradition of balancing epistemological scepticism and technical caution with the authority of being able to provide an explanation. Erasistratos' is at the other end of the spectrum, and arguably has more in common with philosophical ambition than medical tradition, but it is a recognisable variation nonetheless.

The radical move came as a qualitative shift, though it may have grown out of Herophilos' emphasis on the non-demonstrable nature of medical theory. Philinos' invention of Empiricism explicitly rejected causal explanations wholesale, and specifically included dissection in this. It may very well have been the very success

\(^{133}\) Some differences of opinion among practitioners of dissection were much grosser, a particularly notable example being Aristotle's belief that the heart had three ventricles rather than two.
of dissection as practised by Herophilos that set up the conditions for the Empiricists' rejection of it and of all causal explanation. The most authoritative evidence available at the time, discovered by acknowledged experts, had failed to demonstrate the truth of one theory over another: dissection was not a reliable guide to knowledge and there were no other candidates available.

Philinos' empiricism on its own would represent an interesting move in the ongoing medical arguments over methodology, but one limited to a single individual. It did not however remain Philinos' empiricism. A novel medical method was transformed almost instantly into a novel medical institution: the Empiricist αἱρεσις. Philinos' defection from the Herophilean approach to methodologically distinctive Empiricism rapidly proved a popular image to imitate. It had the virtue of being new, and in its earlier days at least the image of being practical, rejecting the complexities and quarrels of the rest of elite medicine as irrelevant.134

Moreover, the Empirist approach consisted solely of epistemological argument and the accompanying methodology. It did not specify either what might be called the technical aspects of medicine, i.e. what treatments to use and how to diagnose disease; nor, unlike the philosophical schools, did it involve physical and ethical beliefs. It consisted of a set of individuals who had adopted a shared fashionable innovation in methodology. The first medical αἱρεσις, and the one with the greatest degree of internal consensus, was the one which required the least doctrinal agreement among its 'members.'

The creation of Empiricism's identity as an αἱρεσις began with polemical attacks on individuals who employed other, rival methods. Thus Philinos of Kos attacked non-Empiricist physicians, writing a six-book treatise against a contemporary Herophilean, Bakkheios of Tanagra. There is no evidence that this was not an attack by one individual upon another, in the usual form of Greek medical debate. But it

134 This was an image not dissimilar to that of the Methodists a few centuries later, who captured similar ground as the Empiricists’ need to protect themselves against philosophical arguments of inconsistency forced them into a defensive epistemological complexity.
was a short step from criticising individuals who used non-Empiricist methods to criticising non-Empiricist methods full stop, and thus to identifying non-Empiricists as a group. That this was the next move is suggested by the title of the Empiricist Sarapion's Πρὸς τὰς ἀφέσεις, written not long after Philinos' work. The term ἀφέσεις does not seem to have been applied to such intellectual groupings before it was adopted for the medical ones. Sarapion's title is its first known application to this purpose and his work identified non-Empiricist figures as members of rival groups rather than as individuals. Thus Sarapion presented non-Empiricist medicine as a set of (incorrect) choices between doctrinal options, while Empiricism was not in fact itself a ἀφέσεις between equally bad alternatives and guesses, but a way of doing medicine without commitment or decision one way or the other.

Ἀφέσεις, on this reading, began its technical life as an insult, but by the first century at the latest – and probably before – it was a means of self-identification. Thus the Empiricist Heraklides of Tarenton wrote a book περὶ τῆς ἐμπειρίας ἀφέσεως, and this apologetic tendency was echoed by the Herophileans, as will be seen below.

The Herophileans and the Erasistrateans

Herophileans were, like Empiricists, a successful group of physicians, and remained a constant presence in Alexandria from about CE 300 to CE 50. Their numbers and links with the Ptolemies rival those of the Empiricists, which perhaps goes some way to explaining the intense rivalry between physicians from these ἀφέσεις. Known Herophileans are Bakkheios of Tanagra, Hegetor, Herakleides of Epythraea, Kallimakhos, Khrysermos, Apollonios Mys, and the court physicians Andreas and Dioskorides Phakas. The fact that both Herophileans and Empiricists attended the

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137 Galen De libris propriis 9 (Scripta Minora 2.115).
Ptolemies implies that the kings, and the intellectual public in general, did not regard
the two methodological approaches as exclusive. Both represented elite medicine.

It is again not entirely clear at what stage certain physicians began to be identified or
to identify themselves as followers of Herophilos. The term ἀρέσεις in Sarapion’s
pomological attack in the third century presumably referred inter alia to Herophileans.
They are not however known to have defined themselves as a distinct group before
the first century, when no less than three Herophileans write treatises περὶ τῆς
Ἡροφίλου ἀρέσεως. In the third century, however, Herophilos’ former student
Bakkheios of Tanagra wrote ἐν τοῖς Ἀποιμμονεύμασιν Ἡροφίλου τε καὶ τῶν
ἀπὸ τῆς οἰκίας αὐτοῦ. The description of the first generation of Herophileans as
those “from the house of Herophilos” suggests the transient and informal nature of the
relationship between an expert and his apprentices.

All the early medical ἀρέσεις should be seen as loosely identified sets of individuals
for the first two hundred or so years of their existence. While philosophers had for
some time formed groups of doctrinally similar individuals, schools like the
Academy, Lykeon, Stoa and Garden required a deliberate act of foundation and were
strongly associated with a place. The medical sects not only took longer to become
established, but even then followed a slightly different pattern. Only the emigration
of some Herophileans to Asia Minor in the first century seems to have involved the
foundation of a formal institution and a cult association. Similarly, the Erasistratean
Hikesios provided a centre for like-minded physicians at Smyrna at the beginning of
the first century.

Nonetheless, the self-referential character of historiographic works by
Herophileans from Bakkheios onwards suggests that the notion of an identifiable

138 Galen De pulsuum differentiis 4.10 (8.746 Kühn).
139 Ba. 78 (von Staden, 1989, 500).
141 Cadoux (1938) 150-1.
group of physicians, whose epistemological and theoretical positions were close to those of Herophilos, is present and explicit as early as the generation of his former students. Given this, reports of polemical disputes between various Empiricists and Herophileans to some extent represent disputes between representatives of opposing methodological tendencies.

Yet it appears that neither Herophileans nor Erasistrateans were routinely identified by that term for some centuries. It is notable that reports of such conflict in the Hellenistic period retain a strong element of individual conflict. The Empiricist Heraklides of Tarenton attacked Herophilos on the pulse, and Philinos of Kos criticised Bakkheios’ Hippocratic lexicon. This contrasts with the tendency of Galen and other Roman authors to represent medical disputes as conflicts between entire αἰρετεῖς, between Erasistrateans, Herophileans, and Empiricists. Only occasionally do they name important individuals or examples.\(^{142}\)

The Erasistrateans appear to be a slightly different case to the Herophileans, and perhaps at first constituted even less of an identifiable group. Von Staden remarks on the absence of treatises by and on the members of the Erasistratean αἰρετεῖς. References to any exegetical works by Erasistrateans in later authors are also lacking, although the numerous Hippocratic commentaries and lexica by Herophileans and Empiricists are cited.\(^{143}\) On the other hand polemical interaction is said to have taken place not only between Erasistratos himself and members of other αἰρετεῖς but also between other αἰρετεῖς and Erasistrateans.\(^{144}\) Galen refers to Erasistratos’ criticisms of Empiricism, while Erasistrateans attacked Bakkheios of Tanagra on the subject of the pulse, presumably in a contemporary debate.\(^{145}\) Apollonios of Memphis was probably the first Erasistratean to define the pulse, in what looks like a reaction to the Herophilean emphasis on this topic. Of course attributions by later authors do not

\(^{142}\) The extreme version of this is Galen’s artificial collapse of all non-Empiricists and Methodists into the “Dogmatists.”

\(^{143}\) (1999) 186-7.

\(^{144}\) See e.g. *De sectis 5* (Scripta Minora 3.1.9).

\(^{145}\) *Ibid*; *De pulsuum differentiis* 4 (8.733 Kühn).
necessarily mean that these physicians were in fact identified at the time as Erasistrateans, and again the known interactions are specifically related to individuals rather than ἀπεσείς. But there is no reason to suppose that physicians with views broadly similar to those of Erasistratos were not identified as his followers, in the same way that followers of Herophilos were. That such physicians existed in the third century is suggested not only by the report of their opposition to Bakkheios, but also by Galen’s explicit citation of Erasistrateans: “οὐ μὲν δὴ πλησίου Ἴρασιστράτου τῶν χρόνων γενόμενοι [...]”\(^1\)

The Erasistrateans may have differed from the other two ἀπεσείς of the Hellenistic period in being rather more scattered. Seven such physicians are known. Apollophanes of Seleukia, who became personal physician to Antiokhos III; Erasistratos’ apprentice Strato; Strato’s apprentice Apollonios of Memphis; Khrysippos; Hikesios the founder of the Erasistratean school at Smyrna; and possibly Xenophon.\(^2\) If Erasistratos did spend a relatively limited part of his career in Alexandria, it would not be surprising to find his ex-apprentices and followers spread more thinly and widely, without the geographical locus that seemed to be essential for the formation of an ἀπεσείς.

In this case the explanation for the absence of ἀπεσείς literature among the Erasistrateans is that the term ‘Erasistratean’ refers to Erasistratos’ scattered ex-apprentices, who to some extent followed his teachings and theories but did not perhaps feel any need to identify themselves as members of a group. Later authors used the term ‘Erasistratean’ for these physicians as they used it for contemporary followers of Erasistratos. These later Erasistrateans did form a recognisable and

\(^{1}\)De naturalibus facultatibus 1.17 (Scripta Minora 3.150-1). Erasistratos’ student Strato is said to have written ἐπὶ τῆς οἰκίας Ἴρασιστράτου: De venae sectione adversus Erasistrateos Romæ degentes 2 (11.197 Kühn). As with Bakkheios (p. 167) this might refer to either an intellectual association or a literal location, or both.

\(^{2}\)See n. 28 (see also chapter four); Diogenes Laertios 5.61; PP 16577; Diogenes Laertios 7.186; PP 16611; PP 16625 and Galen De anatomicis administrationibus 8.10 (14.699 Kühn). There is no reason to suppose that the Ptolemaic court physician Khrysippos, the son of Erasistratos’ teacher, was himself an Erasistratean. According to Galen ‘Khrysipeans’ and ‘Erasistrateans’ disagreed: De venae sectione adversus Erasistratum 2 (11.151 Kühn).
possibly more doctrinally coherent group, probably from around the time that Hikesios founded the Erasistratean school in first century Smyrna. This might also explain why the early Empiricists, while they target Erasistratos, do not do the same for ‘Erasistrateans.’

The question then remains as to why many of the former apprentices – however they described themselves – of Herophilos and Erasistratos were the first physicians who retained to a large degree the views of their teacher, and who practised medicine dependent upon that particular set of theories and arguments.

Part of the answer is that the creation of Empiricism as a medical identity applicable to a group of disparate individuals, quite possibly employing variant therapies, provided a model for a similar grouping, albeit one in this case doctrinally as well as methodologically based. This may have combined with the Empiricists’ polemical description of their opponents as grouped into various doctrinal sets to trigger a defensive reaction on the part of former apprentices of Herophilos, soon to be identified as Herophileans. Yet self-defence is not, I argue, the whole story.

I have drawn attention to the fact that there were similarities, albeit usually very broad ones, between elements of Herophilos’ and Erasistratos’ theories and those of their predecessors and presumably their contemporaries in theoretical medicine. In the Hellenistic period medical theory still revolved around a small number of problems and utilised some or all of a small group of roughly similar concepts.

My argument is not about dubious doxographic lineages or influence. Both Herophilos and Erasistratos could be said to have been ‘influenced’ by Herophilos’ teacher Praxagoras, for instance, but both also more often differed from him. Rather the argument is that after Herophilos and Erasistratos such a pick-and-mix approach to medical theory became much more difficult.

\[\text{148 Von Staden (1999) 186-7.}\]
Dissection provided a relatively large amount of anatomical evidence about the structures of the body. This combined with the competitive nature of ancient medicine to produce increasingly elaborate and systematic theories of physiology and pathology, exemplified by those of Herophilos and Erasistratos. The interdependence of elements within the physiological systems of these physicians made it more difficult to extract elements from widely differing theoretical systems and combine and adapt them to produce a sharply different new system.

Thus although no two theoretical positions were the same even in the later Hellenistic period, the differences between some theories were far more marked than between others. In particular two theoretical positions of the early Hellenistic period, those occupied by the most famous and anatomically justified theorists of the time, became exclusive alternatives. Then, in response to the Empiricist attack on causal explanation in general came the formation of the Herophilean school by his former apprentices. This move would have gained them both the recognition of association with a famous physician and guaranteed an initial doctrinal similarity, one which favoured Herophilean explanations over Erasistratean ones. A similar process must have produced the Erasistratean δρεσις, whenever this acquired an acknowledged status.

Such a development would parallel the increased emphasis on the figure of ‘Hippokrates’ and his writings, as a selective approach to previous theories gave partial way to an acceptance of authority figures. It did not require particularly close adherence to the doctrines of the ‘founder’ or agreement between members of the δρεσις. The Herophilean δρεσις itself is marked by a series of dynamic and diverse reinterpretations and revisions of Herophilos’ thought by competitive individuals.\(^{14}\) Similarly interpretation, improvement, and disagreement with the ‘founder’ and each other was widespread among later Erasistrateans.\(^{15}\) But such treatises by Herophileans on their own δρεσις serve largely to criticise their

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14. See e.g. von Staden (1999) 166-76.
15. Galen De naturalibus facultatibus 2.6 (Scripta Minora 3.171-5); Soranos Gynaecia 3.2 (CMG 4, 94-5).
Herophilean predecessors and position themselves as the improved version of Herophileanism. They remain broadly more similar to each other than to the members of the other ἀφεσείς.

3.4: THE CULTURAL CONTEXT

3.4.1: The Egyptian effect?

Evidence for any Egyptian influence on naturalistic medicine is slight and dubious. It is however true that aspects of elite Alexandrian medical practice, insofar as this can be reconstructed from the fragments, differ from previous Greek practice.

The most obvious example is the use of more Egyptian ingredients and drugs, animal, vegetable and mineral, than are included in Hippocratic drug remedies. For example Herophilos’ work περὶ ὁφθαλμῶν recommended for blindness an ointment made out of gum, the dung of a land-crocodile, vitriolic copper, the bile of a hyena, and the usual cure-all, honey.

It is in pharmaceutics that elite Greek medicine is least distinguishable from Greek ἀρτοι of lower status, varying only in the rarity, expense and sometimes the number of its ingredients. The popularity of exotica is itself an explanation for the wider use of Egyptian ingredients in the prescriptions of Greek physicians, as is the ease of using locally accessible drugs.

The possible influence of Egyptian drug lore on Greek medicine in general was examined in chapter one, and as noted there (p. 55) pre-Hellenistic ‘rational’ medicine included many substances whose reputation was derived from folk tradition. Elite doctors continued to use such ingredients but explicitly rejected supernatural explanations of pharmaceutical powers in favour of naturalistic explanations. At the very least empirical observation of their benefits was asserted and a naturalistic explanation for this assumed to exist. Thus the explanations behind Greek and

152 T260.
Egyptian uses of the same ingredient were not necessarily the same, particularly in the case of elite Greek physicians. Herophilos’ use of ingredients from Egyptian medical practice in his own therapies therefore implies nothing about any theoretical commitment.

Crude parallels can be observed between certain Greek and Egyptian pathogenic theories. As described in chapter one, Egyptian physicians seem to have had a concept of food which, when not properly digested and not evacuated, forms the pathogenic substance wekhedu and is carried about the body by hollow vessels (metu).\textsuperscript{153} Many Greek physiological and pathological explanations included a role for undigested or improperly digested food, which degenerates into pathogenic substances (περισσώματα), or is itself pathogenic when present in excessive amounts.\textsuperscript{154} Blood, the product of food, played the latter role in Erasistratos’ pathology. Similarly, Mansfield (1980) argues that a therapy belonging to the Κυδία, γνώμα parallels the Egyptian emphasis on purgation.\textsuperscript{155}

The similarity is not very close, even between the reconstructed version of the pharaonic Egyptian accounts of wekhedu and Hippocratic period notions of περισσώματα. Certainly the theories of Herophilos and Erasistratos bear little resemblance to the former. I therefore do not wish to suggest any influence of Egyptian concepts on theoretical Greek medicine, either in the pre-Hellenistic period or for Herophilos. Parallels of this kind may easily have been arrived at independently, and therefore do not even demonstrate influence, let alone its path of transmission. Overall it seems risky to presume that Egyptian medical accounts had any effect on elite Greek physicians of any period, and especially that instances of such an effect can be reconstructed from the evidence available.\textsuperscript{156}

\textsuperscript{153} See chapter one.
\textsuperscript{154} Anonymus Londinensis 4.31-14.6.
\textsuperscript{155} De diaeta in morbis acutis 1 (2.227 Littré).
\textsuperscript{156} Pace Ritner (2000) 115, whose assertions about Greek medicine should be treated with caution.
But I am not concerned with influences or with whether there really is a close parallel between Greek and Egyptian pathological accounts. This is a different matter from what practitioners and patients in the Hellenistic period itself may have perceived as similarities. Any such belief on the part of Greeks might have encouraged the adoption of traditional Egyptian drugs.

This highly speculative suggestion depends of course on assuming both that Herophilos, for instance, knew anything of Egyptian explanations of disease, and that he would have perceived the *wekhedu* story as having elements in common with his own notions of humours and residues. There is one, fragile, suggestion that an elite practitioner might have perceived just this similarity. At Anonymus Londinensis 9.37ff., in an irritatingly lacunose text, the physician Ninyas is said to hold a theory in which certain diseases are caused by heat acting on unabsorbed residues to generate *περισσώματα*. The unexpected aspect is that this practitioner has an Egyptian name, but he appears in a doxography of elite Greek physicians of the pre-Hellenistic period. The passage in question is as follows:

ο δὲ Ἀιγύπτιος Νινύας ἰδίως λέγει τὰ μὲν συγγενικὰ γίνεσθαι πάθη, τὰ δὲ ἀλλότρια καὶ τὰ μὲν συγγενικὰ ἐμφυτὰ τῶν σώματι εἶναι. ὕπο δὲ ἄλλης αἰτίας συμφύσασθαι τὰς νόσους τρόπω τοιοῦτω. ὅταν γὰρ ἡ τροχή ληθείσα μὴ ἀναδοθῇ τῷ σώματι, ἀλλ' ἐνεπείγει, ἢ θερμότης ἢ ἐν ἡμῖν οὖσα περισσώματα ἐξ αὐτῆς ἀπογεννᾶ[...]. ca. 26 lines missing.

Ninyas the Egyptian is peculiar in dividing affections into congenital and non-congenital, and the congenital are innate in bodies. Diseases are produced by another cause, in the following way. For whenever nourishment that has been taken has not been absorbed by the body, but remains blocked (?), the heat in us generates residues out of this nourishment. (Translation Jones, slightly adapted).

One might assume that Ninyas is a completely Hellenised physician, were it not for the fact that he predates the period of Greek rule that made Hellenisation useful, and

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157 That residues were involved in Herophilos’ pathology is suggested by Caelius Aurelianus’ report that Herophileans viewed indigestion and spoiled food as triggering cardiac disorders: see p. 159.
that he is known by an Egyptian name. On the risky assumption that this suggestion of a retained ethnic identity includes a knowledge of and respect for Egyptian medicine, Ninyas could be considered to have held a theory of residues explicitly and knowingly compatible with, and derived from, both Greek and Egyptian aetiology. This is impossible to prove and very probably an over-interpretation of the surprising circumstances of his appearance. (See further below).

All of this illustrates a general problem with identifying Egyptian influences on the elite Greek medical theorists. Parallels between pharaonic Egyptian medicine and long-standing elements of Greek medicine do not, among other difficulties, reveal anything about any Egyptian effect on physicians of Ptolemaic Alexandria in particular.\textsuperscript{158} Any plausible attempt to suggest such an effect must fulfil four criteria. Firstly it must identify distinctive characteristics of Alexandrian medicine. Secondly these must be similar to aspects of Egyptian culture. Thirdly they must be accessible to the Greek physicians without assuming any special knowledge of Egyptian culture and medicine. Fourthly an equally or more plausible explanation that does not involve Egyptian culture must be lacking.

Herophilos’ interest in exact measurement, e.g. of the pulse and of internal organs (above p. 151-2) has sometimes been linked to an Egyptian rhetoric of medical quantification. The pharaonic medical texts refer to “counting” the pulse.\textsuperscript{159} The hundreds of extant pharaonic drug recipes also give exact measurements, though this may be more a rhetorical presentation or an ideal than actual practice.\textsuperscript{160} Third century Alexandrian pharmacology institutes such quantification for the first time in

\textsuperscript{158} Such as the often remarked on identical method of the Hippocratic text De mulierum affectibus 3.214 (8.417 Littre) and the Egyptian Papryus Carlsberg 8.4 (ca. 1314-1085): See Iversen (1939). The former uses garlic, the latter an onion in a technique of birth prognosis.

\textsuperscript{159} Ebers 854a (85 Bardinet); Edwin Smith case I (Breasted).

\textsuperscript{160} Lloyd (1989) 257 opposed by Ritner (2000) 116 n. 57, who cites “consistent use of complex volumetric notation.” Egyptian recipes standardly measure in volumes, but almost always as a fraction of the recipe. As in Greek pharmacology, extant writings do not generally include the amount of the drug to be given to the patient.
Greek medical practice. Galen remarks that Erasistratos’ instructions on treatment were enormously detailed and specific. But it is very uncertain just how much the Greek physicians knew of Egyptian diagnostic preoccupations.

Von Staden points out that there is arguably more interest in measurement in Hellenistic science overall, not just in medicine. Aristarkhos calculated the distance from the earth to the sun; Eratosthenes the circumference of the world; Philo of Byzantion described the repeated use of experiment by artillery engineers trying to calculate the best bore diameter. Such a tendency may have been due to any number of factors and combinations thereof. Among them might have been the expansion of the known world under Alexander the Great, suggesting its conquest by measurement; the rise in technological and ballistic interest, with their associated requirements for accurate measurement; the scientific emphasis of Alexandria, including mathematics and astronomy at a high pitch of complexity and detail; and the Egyptian effect, either directly or through the increased interest in mechanics. Thus measurement and quantification fulfils the first three of our criteria – to varying extents – but arguably not the fourth. An Egyptian effect is most plausible in the introduction of the idea of exactness into drug lore.

It has also been suggested that Herophilos’ innovative interest in the clinical relevance of the pulse owes something to an Egyptian technique of “counting” or taking the pulse. It is possible that observation of local Egyptian practice or information from Greek-speaking Egyptian physicians, priests or other acquaintances may have made Herophilos aware of the Egyptian practice, though I cannot reach an estimate as to the probability of this. But it does seem far more likely that the principal factors in developing Herophilos’ interest in the pulse are his anatomical work and the continuing and developing interest in the functions of the pulse and

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162 De venae sectione adversus Erasistratum 1 (11.147 Kühn).
arteries in Greek medicine, especially after Praxagoras’ observations on the subject.\textsuperscript{163} There is no noticeable similarity between Egyptian theories on disturbances in the heart and Herophilean theories on the same. Therefore the suggestion of an Egyptian effect here probably does not meet the third criterion of easily accessible knowledge, and certainly not the fourth criterion of the lack of a plausible influence from Greek culture.

Herophilos wrote one of the first Greek treatises that dealt solely with ophthalmology, and it remained a major interest of the Herophileans. Perhaps this owed something to the preoccupation of Egyptian medical papyri with eye problems, which make up a large proportion of remedies in the pharaonic period papyri.\textsuperscript{164} Yet Herophilos’ concern with ophthalmology may have been stimulated not by Egyptian medicine but by Egyptian disease: the desert sand, climate, and prevalence of trachoma infections made eye problems commonplace.\textsuperscript{165}

A more indirect path for some kind of Egyptian effect is via the mechanical and engineering aspects of Alexandrian intellectual life. The works of the Alexandrian mechanists and pneumatists, and the physical and explanatory principles on which they were based, have been convincingly proposed as a major influence on - even as a direct model for - Erasistratos’ mechanical theories.\textsuperscript{166} And the physical landscape in and around Alexandria can be seen in Herophilos’ innovative anatomical nomenclature, particularly in his comparison of the Pharos to a bony process, producing the term “pharoid process,” also described as the styloid process.\textsuperscript{167}

A less central but still noticeable aspect of Herophilos’ medical practice is his use of a machine, a portable water-clock, as a pulse-counter. The clock contained a

\textsuperscript{163} His thinking on pulse rhythms was also heavily influenced by Greek music theory: see von Staden (1989) 278-9.

\textsuperscript{164} 336-441 in the Ebers alone.


\textsuperscript{166} Vegetti (1995); von Staden (1996).

\textsuperscript{167} De anatomicis administrationibus 10.7 = T92.
specified amount for the natural pulses of each age range among Herophilos’ patients, and could thus serve as a normative baseline against which the patients’ own pulse could be measured.\footnote{Marcellinus 	extit{De pulsibus} 11 = T182.} It is not at all clear how Herophilos’ pulse counter worked, but given its attestation by a generally reliable source there seems no particular reason to discard it, even if the information is too imprecise and scanty to allow either its exact function or its mechanism to be reconstructed. It must however have been more complex than a simple counter of elapsed time.

Water-clocks, \textit{kλεψυδρα}, were familiar in Greece from before the Hellenistic period.\footnote{Aristophanes \textit{Acharnians} 692. Klepsydra are used as an analogy by Empedokles: fr. 100 Diels-Kranz.} However the examples known were simple devices like an egg-timer. In pharaonic Egypt, in contrast, more sophisticated water-clocks that were not limited to marking elapsed time are known from the fourteenth century. The preface to \textit{P. Hibeh} 27 (early third century) suggests that one Greek at least discovered in fourth or third century Egypt a clock new to him and probably impressive in its accuracy. It has been argued that Eudoxos and possibly subsequent generations of Greeks improved their mechanical time-keeping under this kind of Egyptian influence. Certainly better sundials and water-clocks are attested in the Hellenistic era, notably those of Arkhimedes and in third century Alexandria, Ktesibios.\footnote{See West (1973).}

Another machine is that invented by the Herophilean Andreas, for reducing dislocated shoulders. Von Staden (1989) 474 notes that this “seems to have depended in part on the discoveries of Alexandrian mechanical technology.”\footnote{For the machine see e.g. Oribasius \textit{Collectiones medicæ} 49.10.}

It seems clear enough that the explanations and mechanisms of the relatively high-status Alexandrian technology influenced elite physicians. This fulfils the first and third criteria. In examining the second and fourth, the question becomes whether Alexandrian technology was itself the result of purely Greek culture and competition, or whether it was influenced at all by the Egyptian environment and culture.
On the Greek side, Alexandria’s intellectual community, especially in the third and early second century, was dominated not only by the usual literati but also by thinkers of an unusually scientific bent: mathematicians, geographers, astronomers, mechanical and ballistics experts, physicians, and physical theorists of all kinds. Once this concentration of physical investigators had reached a certain critical mass, it must have had an equally self-reinforcing effect upon the value attributed to that type of inquiry, those methods, and even their ‘practical’ results.

Secondly the Hellenistic era saw the field of war technology becoming increasingly competitive – a development which perhaps owed something to the resources Hellenistic kings could command. Ballistics and other mechanical technology thus acquired some status from direct patronage, extending from a small and low-status technical domain to being the concern of leading mathematicians such as Archimedes. Both of these points suggest that much of Ptolemaic technology can be accounted for with reference to Hellenistic trends and demands. This does not exclude the possibility of Egyptian influence as well, but does make it very difficult to identify.

One characteristic aspect of Egyptian culture that was certainly visible to the Alexandrian ‘scientists,’ as well as everybody else, was its emphasis on monumental and dramatic architecture and spectacle. Alexandria contained buildings and statuary either in the Egyptian mode, containing elements of Egyptian architecture, or straightforwardly ransacked from the deserted pharaonic city of Heliopolis. Recent excavations on the seabed near Alexandria have revealed the presence of several such massive statues, around 5m high, including numerous sphinxes. Two of these, standing at 3.9 and 4.1m, were also found at the site of the Serapieon temple in Alexandria and date to the early Ptolemies. The Ptolemies had adopted the monumental Egyptian style of iconography as their own, as demonstrated by the size
of the statues of themselves recovered from the seabed. These probably stood at the entrance to the Pharos lighthouse.\footnote{Empereur (1998) 71-80.}

The massive and permanent structures of Egyptian temples and funerary monuments demonstrated both the engineering expertise required to build them and the value of such knowledge. The temples at Thebes have columns and gateways approaching 50m in height – a modern 15 storeys. The pyramids at Giza, rising to a maximum of 146m, used as much building stone as a small town.

In fact the processes required to build a pyramidal structure are not particularly complex. The ability of the Egyptians to build them in such massive sizes was primarily due to their social structure, which enabled the resources in stone, manpower and time, to be concentrated on such an effort, and the millennia of history over which such buildings became routine and numerous. The Greeks had built very large structures themselves, the Mausoleon of Halikarnassos, the statue of Zeus by Phidias at Olympia and the Hellenistic Kolossos of Rhodes being three notable examples. Yet Greek states were not dominated by this kind of enterprise in the way that Egypt was, nor was most construction on quite the same gigantic scale. Even the Kolossos stood at only ca. 33m and the Mausoleon at 57.6m, while one of the biggest temples in the Greek world, that of Apollo at Didyma, from the late Hellenistic age, had columns of 19.70m - well below the 50m common in Egyptian temples. The monumental temples and tombs of Egypt dramatised and displayed Egyptian culture in ways that were quite literally impossible to overlook. As Herodotos says:

But concerning Egypt I will now speak at length, because nowhere are there so many marvellous things, nor in the whole world beside are there to be seen so many works of unspeakable greatness. (2.35).

The impact this had on the Ptolemies can be seen in their patronage of similarly massive and ingenious construction. Such gigantic artefacts displayed the wealth and
power of the Ptolemies just as they had done that of their pharaonic predecessors. This was of course a tendency common to the concentration of power in wealthy monarchies. Mausoleos’ tomb demonstrates its existence in the fourth century, Alexander had caused Hephaistos’ tomb to be built in the form of a huge stepped pyramid, and other Hellenistic kingdoms tended towards gigantism in their public architecture. Nonetheless that of the Ptolemies is comparable to Egyptian rather than to Greek scales.

The Pharos is the pre-eminent example. Caesar describes it as being “mirificis operibus exstructa.” Its height, in 3 stages, totalled 133m, almost that of the pyramids, and Aswan granite was used in at least part of its construction, necessitating the use of local expertise and perhaps elements from the pharaonic tradition.

The argument outlined above is that there was an Egyptian effect on Greek cultural values and the acceptable forms of intellectual, religious and aesthetic expression in elite Alexandria. Certain kinds of technology and its results acquired a greater cultural value because they were associated with the spectacle and age of Egypt. Combined with the state interest in certain forms of mechanics and the investigative, possibly Peripatetic preferences of many Alexandrian intellectuals, this diffuse Egyptian effect may have contributed to the status and use of mechanics and technology in elite Alexandrian culture. Certainly mechanics had an indirect effect upon the models, techniques and perhaps methods of elite Alexandrian physicians. More direct Egyptian influences, beyond a relatively probable effect on pharmaceutics and their quantification, cannot be ruled either in or out.

3.4.2: The Greek effect?

A final question is prompted by the citation of the Egyptian physician Ninyas at Anonymus Londinensis 9.37ff, see above. Was there any influence by Greek

173 De bello civili 3.112.19.
medicine upon some Egyptian healers? This question arose in chapter one, but here the concern is with specifically elite medicine, at least on the part of the Greeks and therefore implying a corresponding degree of education in the hypothetically influence Egyptian doctors as well.

I am unaware of any other Egyptian doctor named in the context of Greek theoretical medicine. Rufus complains of recent terms for skull sutures by “Egyptian” doctors, but as Lloyd points out, he almost certainly means Alexandrian ones, i.e. Greeks in Egypt.\textsuperscript{175} Egyptian doctors cannot be conclusively ruled out, as they were known for their expertise in stitching, the subject Rufus is discussing, but it seems unlikely. The only other possible hint of Egyptian interest in Greek medical theory, or indeed in Greek medicine in general, is the medical text found on the Memphis necropolis (see chapter two). Unfortunately, the nature of this still unpublished text remains unknown.

In the absence of more evidence, it must be concluded that certain Egyptians, possibly of dual ethnic ancestry, adopted Greek modes of medical thought even before Greek colonisation and therefore probably after it. This does not however mean that Egyptians in general were attracted by this form of medicine. It is more likely that the patients of Ninyas and any others like him were predominantly Greek, or at least Egyptians strongly associated with a Greek colonial presence in Naukratis or Memphis. After the Greeks had become not just a localised cultural alternative but the dominant and governing force, such physicians would have been encouraged to conform more absolutely to Hellenic expectations. Like other Hellenised Egyptians they probably used a Greek name in professional contexts, thus effectively concealing their identity from historical sight.

Egyptian physicians like Ninyas, having apparently adopted Greek theoretical concepts, may or may not have observed that there were structural similarities between Greek models and Egyptian concepts. If so, Ninyas or other physicians with access to both cultures may have been able to represent their practice in different

\textsuperscript{175} \textit{De corporis humani appellationibus} 151.1ff; Lloyd (1983) 158.
terms to both cultural identities, thus maximising their client base. I suggested in chapter two that some such motive might lie behind the appearance of the text on the Memphite necropolis. In any case, a pecuniary motive of this type is probably part of the explanation for the adoption of Greek ideas by a physician with an Egyptian name.

Finally, Ninyas' appearance without comment in the *Menoneia* section of Anonymus Londinensis reveals that physicians of Egyptian ethnicity were not disbarred from Greek medical discourse. Perhaps, then, Egyptian medical notions were regarded by Greek physicians as supporting Greek concepts in the Hellenistic period, rather than as an ill-informed alternative.

### 3.5: Conclusion

The Alexandrian elite physicians were a product of Greek culture and medical tradition. They appear to have remained largely isolated from Egyptian practitioners, apart perhaps from a few Hellenised individuals like Ninyas, and therefore from Egyptian medicine. The major influences upon their thought and practice were their contemporaries and predecessors in medicine and philosophy, regardless of geographical location, and contemporary expertise and invention in the physical sciences.

The impact of Egypt upon the Alexandrians is to be located in the effects of the physical and political environments rather than the direct influence of its people. The local diseases and remedies inevitably effected Greek medical practice at all levels of society, and may have motivated some aspects of the anatomists' investigations. Ptolemaic patronage reinforced Greek intellectual competitiveness to create an intellectual climate in which investigation into the structures and processes of the physical cosmos and its constituents acquired an unusual prominence and authority. In this the idealisation of Egypt and the visibility of the physical remains of pharaonic culture may have indirectly contributed to the Alexandrian emphasis on the
understanding and manipulation of the physical world. This approach was present in medicine in the shape of the anatomists, and there the intensity with which rival explanations were disputed drove the formalisation of empiricism as a methodology and the invention of the sects.

The prominence of this kind of investigation into the nature of people and disease was brief. The arbitrary power of an immigrant monarchy supplied the anatomists with the tools and mindset to experiment with medical ethics without provoking social dissent, but the use of dissection declined rapidly after Erasistratos. In the extant sources it is rarely even defended, and though some later physicians like Galen practised the dissection and vivisection of animals this was rare and the limited justification of surgical utility more emphasised than before. It is not the purpose of this chapter to investigate in detail the causes of this disappearance, which has been analysed by others. Here I will observe only that the very expansion and success of anatomical investigation into humans seems to have revealed the limitations of ancient medicine: the best was not good enough. Instead, Greek physicians, deprived of reliable proofs and therapeutics, continued to practice a medicine of competing and different forms, an art rather than a science.

176 See e.g. von Staden (1982).
FOUR: PERCEPTIONS OF MEDICAL POWER

4.1: Introduction
This chapter will examine the ways in which medicine was perceived by Hellenistic Greeks, especially those of Ptolemaic Egypt. Since many of the characteristics of this image were shared by other Greek societies, in particular those of the other Successor kingdoms in the Hellenistic Near East, evidence from these has been included.

A dominant theme is the relationship of medicine and power. Thus 4.2 will investigate the common Hellenistic motif of the pharmaceutically expert monarch, a trope which both helped to influence and reflected the perception of what constituted an appropriate ruler among Greek societies in this period. This relates closely to the ambiguity of the terminology, effects, and perception of pharmaceutics, and more broadly to the double-edged nature of medical knowledge in general.

The societies of the Successor kingdoms, and in particular Ptolemaic Egypt, had hierarchical structures in which power was concentrated in their monarchs and diffused throughout the court. 4.3 will explore the position of the elite physicians with their unique, but vulnerable, access to this power.

Popular perceptions of the physician and other healers, as revealed in dramatic and other literary works, are formed partly by this relationship with the potentially dangerous. They are also however to do with the degree to which various healers were perceived to have power and knowledge at all. The status of medical power, and the modes in which it is stereotypically expressed, are the topics of 4.4.

Physicians sought to represent and to influence their own discipline and image through proscriptions and prescriptions for behaviour. This is the area explored in 4.5.

4.2: Dangerous kings
The term φάρμακον is an ambiguous one. According to context it can mean any or more of the following: drug, poison, remedy, spell, and device or stratagem – not
necessarily a medical one. Perception of the moral status of the uses to which φάρμακα were put likewise depended on context and interpretation.

Three famous examples illustrate this point. In the *Odyssey*, Helen uses her specialist knowledge of a powerful Egyptian drug, nepenthe, to calm Telemachos’ grief and anger. In the story of the Argo and the associated legends, Medea uses herbs and other φάρμακα to kill or at least injure various enemies of hers and/or Jason’s; but she also has the power to rejuvenate and to protect. Kirke, the "πολυφαρμάκο" sorceress encountered by Odysseus, turns his men into swine, but Hermes has already told the cunning hero how to use the plant moly to defeat Kirke and gain her help.

All these stories feature women of dubious reputation and Eastern association using secret knowledge of drugs to affect others. In particular Helen employs a drug developed in Egypt, which remained famous in Greek perception for its pharmaceutical and magical lore. Medea’s home of Kolkhis was also believed to have long-standing ethnic and cultural connections with Egypt. But while Helen is represented as beneficent, Medea’s use of φάρμακα is dangerous, extreme, and threatens at any moment to be turned against her erstwhile allies. Kirke, initially a threat, is herself defeated by the plant moly and the pharmaceutical knowledge of Hermes, and her skill in magic and pharmacy turned to Odysseus’ advantage – with

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1 Φάρμακον means poison at e.g. Thukydides 2.48; Plato *Phaedo* 115a. It means a remedy or device at e.g. Herodotos 3.85 c.f. Hesiod *Opera* 485, Euripides *Bacchae* 283, Plato *Phaedrus* 274e. All examples from Lloyd (1979) 44 nn. 184-5.
3 Medea helps the Argonauts to defeat bronze Talos on Crete, in some versions driving him mad with drugs; uses drugs to poison Kreon and according to Euripides his daughter as well; tries to poison Theseus in Athens; is involved in the deaths of her brother and sometimes her sons. She appeared in Sophokles’ lost play *Πετόσσων* as a cutter of poisonous herbs. Conversely, she protects Jason with an ointment against fire and weapons and can rejuvenate a ram and, in some versions, Jason. See Gantzas (1993) for details of and variations upon the various Medea legends.
5 Hunter (1993) 152.
the help of the gods his magical power is greater than hers. Thus the perception of the user of \( \phi \alpha \mu \iota \alpha \kappa \alpha \) entails the way in which the \( \phi \alpha \mu \iota \alpha \kappa \alpha \) themselves are perceived.

In the Hellenistic period, there are several instances in which the ambiguous power of the \( \phi \alpha \mu \iota \alpha \kappa \alpha \nu \) is combined with the personal power of a king. The way in which this personal and political power is historically constructed partially determines which pharmaceutical trope is dominant, and *vice versa*.

The argument is that such powerful materials increase a king’s already extreme power. Therefore, a king’s expertise in such matters can be represented and constructed as a sign of either a good king or a bad one, depending on how those materials were said to have been used.

Attalos III of Pergamon, the last king of that dynasty (ca. 170-133), has not been favourably represented by the extant historians. Diodoros, the earliest available, says that, “In Asia King Attalos...being cruel and bloodthirsty, visited on many of those subject to his rule irremediable disaster or death.”

Diodoros’ account constructs the image of the bad king in opposition to the good one, explicitly contrasting Attalos III’s behaviour and personality with that of his predecessors. Bad kings, like Attalos III, provoke the hatred of their subjects, and thereby risk or at least deserve revolution; good ones are engaged in a reciprocally beneficial relationship with their people. So Diodoros says of the earlier Attalids:

For they, by practising kindness and benevolence, had prospered in their kingship [...] (but Attalos III)] was hated not only by everyone subject to him but by the neighbouring peoples as well. Thus he stirred all his subjects to hope for a revolution. (34/35.3.1).

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6 Hermes’ advice at 10.287-281: use of the magic herb (\( \phi \alpha \mu \iota \alpha \kappa \alpha \nu \; \eta \sigma \theta \lambda \omicron \nu \)) moly will protect Odysseos against Kirke’s own deadly arts (\( \delta \omicron \lambda \omicron \phi \omicron \alpha \omicron \omicron \; \delta \acute {n} \nu \epsilon \omicron \nu \)), (drugs) \( \phi \alpha \mu \iota \alpha \kappa \alpha \alpha \), and being bewitched (\( \theta \acute {e} \lambda \acute {z} \omicron \alpha \)). At 10.305 Hermes remarks that moly is \( \chi \alpha \lambda \epsilon \rho \omicron \omicron \omicron \) for men to dig up, but not for gods. Stanford’s commentary (1971) suggests that \( \chi \alpha \lambda \epsilon \rho \omicron \omicron \omicron \) here may mean dangerous, not just difficult. Moly acts as an antidote: 10.326-9, c.f. 10.392 where an antidote (\( \phi \alpha \mu \iota \alpha \kappa \alpha \nu \; \acute {a} \lambda \lambda \omicron \)) restores the memories of Odysseos’ men.
This explanation may serve to implicitly represent Roman rule over Pergamon as a restoration of the proper and welcome order of things, but the notion that good kings rule by a kind of grateful consent is not a new one. Bringmann observes that:

[...] in founding new cities, Hellenistic kings did benefit Greeks in just the same ways as according to theory, kings had done ages and ages ago, when establishing social and political order for the first time[...]. Hellenistic kings[...] were well aware of the fact that they depended more or less on the goodwill of Greek cities. Accordingly, they tried to live up to the standard of benevolence that the cities were expecting."

Bad kings, on the other hand, broke the customary exchanges of reciprocal trust and beneficence that informed the political discourse of the Hellenistic world.

In fact at least one contemporary decree in honour of Attalos III, from the city of Elaea, characterises him as “well disposed to and a benefactor of the people” [of Elaea], but this appropriate behaviour is not depicted in the portrait drawn by the historians.8 Diodoros says that Attalos III, paranoid about his father’s friends, had them and their families killed by deception and by his barbarian mercenaries. Justin, the epitomiser of Pompeius Trogus’ history, has a similar account of murdered friends and relatives, but includes more picturesque detail. Here Attalos III is not only bad but also mad:

After this outburst of criminal rage, he assumed a mean dress, let his beard and hair grow like those of prisoners, never went abroad or showed himself to the people, held no feasts in the palace and behaved in no way like a man in his senses; so that he seemed to be paying penalty to the spirits of those who had been murdered.9

Behind this vivid moral tale may lie a true story of a power struggle between a new king and the powerful of the ancien régime. The manner in which it is described, however, reveals the ways in which power was constructed as beneficent or

8 IvP no. 246, 53-56.
9 Justin 36.4.2.1-3.1
dangerous. It is not the simple act of killing suspected rivals that makes Attalos III a bad king. Far more violent dynastic intrigue was hardly unknown in the Successor kingdoms: the fratricidal, matricidal, filicidal and soricidal exploits of the later Ptolemies being a series of spectacular examples. The construction of Attalos’ behaviour by some later authors as that of a bad king depends heavily on their explanations of his methods and motives.

Hence the relevance of all this to medicine, which is involved in the ways in which Attalos exercised his power. His reclusive behaviour involved the cultivation of plants and of pharmaceutical expertise.\(^\text{10}\) According to Justin, his purposes were sinister:

Omissa deinde regni administratione hortos fodiebat, gramina serbat et noxia innoxiiis permisccebat, eaque omnia veneni suco infecta velut peculiare munus amicis mittebat.\(^\text{11}\)

Galen, a more sympathetic author, also has an account of research into poisons by Attalos III, albeit one that was not necessarily due to murderous motives. According to Galen, the king tested the potency of antidotes upon criminals already condemned to death.\(^\text{12}\)

\(\text{10} \) Note that there may have been a connection between the \textit{motif} of solitude and that of plant-collecting: see Diogenes Laertios 1.112 and Lloyd (1983) 120 n. 18.

\(\text{11} \) Justin 36.4.3, c.f. Plutarch \textit{Demetrios} 20 on Attalos cultivating poisonous plants – though without the sinister sequel.

\(\text{12} \) \textit{De antidotois} 2.1 (14.2 Kühn).
Elsewhere, he also quotes Attalos as having said that if kings tried deadly drugs on such men, they did nothing terrible. This circumstantial detail seems to me to increase the likelihood that Galen’s account is a largely accurate one.

Mithridates VI Eupator, king of the Pontos (120-63) is the other king said by Galen to have tried out antidotes on criminals, and to have ‘discovered’ a number of them. Similarly Kleopatra VII (69-30), the last of the Ptolemies, was said to have tested poisons on slaves. Meanwhile, propaganda said that Philip V of Makedonia (238-179) had adopted the more traditional and to the point approach of simply poisoning his guests at banquets. His seven alleged victims included his own son Demetrios.

The activities of these royal poisoners are reminiscent of the vivisections performed by the Alexandrian physicians Herophilos and Erasistratos in the third century. The criminals used by the anatomists were also supplied by “the kings”. In particular Attalos’ reported justification above echoes part of the argument of those who supported the vivisections: that the deaths of such men as these were outweighed by the potential benefits.

There were precedents for this type of experimentation. In the classical period Thrasyas of Mantinea invented a poison, compounded among other things from hemlock and poppy. It gave, said Thrasyas, an “easy and painless end.” Similarly, Theophrastos explains that the people of Keos had much improved their method of making poison from hemlock.

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13 De simplicium medicamentorum temperamentis ac facultatibus 10.1 (12.252 Kühn). εἰ μὲν οὖν βασιλεῖς ὄντες ἐν εὐθράκοις ἐν θανάτῳ καταπεκριμένοις ἐποιήσαντο τὴν πείραν αὐτῶν (i.e. τῶν θανάτημαν φαρμάκων) οὔδεν ἐπραξοῦν δεινόν.
14 Plutarch Antonius 71.6ff; P.Hercul. 817. A seventh century Assyrian king also tested drugs on slaves: Keyser (1997) 180 and n. 27.
15 For a full list and references see Walbank (1943) 4.
16 Celsus 1. pro. 23-26: “a regibus.” See chapter three.
17 Theophrastos HP. Thrasyas: 9.16.8. Hemlock from Keos: 9.16.9. At 9.16.7.3 θανατηφόρου is used to mean drug.
Hemlock was of course used to kill convicted criminals, for euthanasia, and probably many poisons were used against dangerous animals.\(^\text{18}\) Inventors such as Thrasyas must have been acknowledged for their expertise in this dangerous art, and must also have tried their latest products out - presumably, again, on animals.

The investigations into poisons and antidotes carried out by Attalos III, Mithridates VI, and Kleopatra VII are dangerous not so much because they continue this behaviour, but because they do so as individuals whose power is already much greater than that of a Thrasyas. The very fact that Celsus records objections to the vivisections carried out by the Alexandrian anatomists on the grounds of cruelty and Attalos needed to justify his practices demonstrates that this step did not have a pre-Hellenistic precedent in the history of Greek pharmaceutics.\(^\text{19}\)

The rulers of Hellenistic Greek societies in the Near East, elevated to gods, were very sharply differentiated from all their subjects both in power and status. These societies were further stratified according to wealth, birth, and ethnic-cultural group. In the Successor kingdoms, the rights of all other people were ultimately dependent upon the arbitrary whim of the ruler. But the right of the ruler to exercise that ultimate power depended upon the co-operation of the rest of society, or at least of a majority of significant elements. Moreover for Greek kings, the self-proclaimed inheritors of Greek culture and social tradition in a barbarian world, their role entailed maintaining at least the rhetoric and to some extent the behaviour of freedom, in stylistic opposition to tyrannous, barbarian modes of rule. Such stereotypes are embedded in all kinds of Greek literature. Aristotle, for instance, contrasts Greek modes of kingship, such as the Spartan model, with those existing among barbarians. The latter are hereditary tyrannies enshrined in law, stable because “the barbarians are more servile in their nature than the Greeks, and the Asiatics than the Europeans, they endure despotic rule without any resentment.”\(^\text{20}\) Under pressure even legal restraints

\(^{18}\) Euthanasia: perhaps ibid. 9.16.8, and see Amundsen (1977) 192-3.

\(^{19}\) See p. 128, p. 190.

\(^{20}\) Politica 1285a19-22, c.f. 1327b.
were perceived by the Greeks to be vulnerable to the Persian king’s power. Later historians of Alexander tended to represent certain incidents in his career as a clash between Greek and barbarian modes of behaviour. The pages’ conspiracy, for instance, was perceived by posterity as opposition to eastern style tyranny. In Arrian Kallisthenes reminds another speaker that:

you are not advising a Kambyses or Xerxes, but a son of Philip [...] whose forefathers [...] have continued to rule the Makedonians not by force but in accordance with custom.

These characteristics of the Hellenistic good king inform his representation as an euergetic one, in relation to Greek cities and to individuals, and as a king who respects the rights of his subjects.

This of course applies in particular to subjects who are also official Greek citizens. In Egypt the πόλεις of Alexandria, Naukratis and Ptolemais were nominally self-determining under the ultimate authority of the king. But the good king in Greek literature is also respectful of the rights of other gods and peoples. Herodotos suggests, as one explanation of the madness and death of the Persian king Kambyses, that the cause was his impious approach to Egyptian religion in the form of the Apis cult. The implications are that there is appropriate behaviour even for kings, and retribution for inappropriate behaviour.

I suggest that there was a tension between this representation of the good Hellenistic king, and the simultaneous presentation of the king as a god with unrestrained authority over everyone else. In a stratified monarchical society, such implicit and explicit differences in status and power and rights were extreme. Thus the victims of

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21 Herodotos 3.31.4-5: the royal judges, in fear of Kambyses, find a law “whereby the king of Persia might do whatever he wished.”
22 Anabasis 4.11.6, c.f 4.8-9: the murder of Kleitos.
23 3.27-30: it was because he struck the Apis bull, ὁς λέγωσιν Αἰγύπτων, that Kambyses went mad. Herodotos' alternative, naturalistic explanation at 3.33 is discussed on p. 211.
medical experimentation were of liminal status in that they were the lowest social and moral stratum of their society, those whom it was arguably acceptable to kill. Simultaneously, though, it was arguably not acceptable to kill the subjects of a Greek king in this manner and for these reasons.

In particular, such behaviour could be considered as part of the repertoire of the good king only if the potential transference of this use of royal power to other members of society were ignored: as if Medea could be relied upon to stop at killing her brother and fail to turn on Jason. The use of certain subjects as test subjects threatens the image of the good king because, for the god-kings, the differential between themselves and the condemned criminals, and the differential between themselves and the rest of their subjects, were both enormous. On this scale, the difference between being a criminal subject relative to the king and being an ordinary subject relative to the king was potentially so subtle as to be vanishing. In using slaves and criminals as less than human certain kings implicitly threatened all other relations between king and subjects.

Thus the liminal status of the victims was matched by the liminal position of the enterprise. It took place on the edge of appropriate behaviour, an expression of an absolute ruler's ability to alter social customs with relative impunity. In this it resembled the Ptolemaic adoption of incest and probable patronage of vivisection (see chapter three).

There is a parallel to this ambiguous use of power by experimentally inclined kings, and the ways in which they are portrayed as good or bad, in the stories of how such kings reacted to criticism. Attalos III is said to have crucified the grammarian Daphidas of Telmessos for writing a contemptuous epigram. Philadelphos is supposed to have imprisoned and later dropped the poet Sotades into the sea in a sealed container for his epigram on Philadelphos' incestuous marriage: "εἷς ὄψ χ

24 Strabo 14.1.39; Suda s.v. Daphidas no. 99. Fontenrose (1960) for why this this incident should be assigned to the reign of Attalos III rather than Attalos I.
In the same paragraph Plutarch reports that Antigonos Gonatas killed the sophist Theokritos. Similar incidents are associated with the Seleukids, one of whom murdered a philosopher in the second century.

Yet in fact kings routinely tolerated insulting literary behaviour in certain contexts, including, perhaps, the symposium. Sotades in particular seems to have made a career out of such attacks. According to his son’s memoir, he had earlier insulted Philadelphos and Lysimakhos, the king of Asia Minor north of the Tauros, in front of each other and “other kings in other cities too”, yet he survived these incidents and his death happened ten years after its alleged trigger. His unusual fate, which sounds garbled at best, may have had nothing to do with his jibe at Arsinoe II, but its representation suggests that despotic power stereotypically involved such incidents.

Similarly, the pharmaceutically expert king, such as Attalos III, is represented as by a hostile author like Justin as a poisoner, as poison is a mode of killing in keeping with the secret cunning of a bad king and Attalos III’s other assassinations. The similarly dubious reputations of Mithridates VI and Kleopatra VII made them suitable candidates for the same form of representation. Appian says that Mithridates VI “was bloodthirsty and cruel to all, the slayer of his mother, his brother, three sons and three daughters.”

The portrait and behaviour of the good king served to obscure the differential between ruler and subjects and to emphasise instead the reciprocal nature of the relationship: gratitude for beneficence. The construal of a ‘good’ king’s relationship with medicine and φάρμακα emphasised, of course, the beneficial possibilities of such knowledge and power.

25 Plutarch De liberis educandis
28 Mithridatica 549.1-3.
Expertise in drugs can also be identified as in keeping with, or even as a characteristic of, a beneficial king. Attalos III was certainly interested in pharmaceutics and treatments, as well as in husbandry and zoology, as reports from a number of medical and agricultural authors make clear. Varro, Pliny and Columella all cite his treatise on agriculture. Celsus attributes to Celsus a recipe for a serious eye condition while Galen gives him the credit for the invention of a “plaster very efficacious for wounds and ulcers of the skin”, a diet for various disorders of the digestive system, and investigations of the therapeutic properties of the secretions of animals. Galen says generally that Attalos III was “σπουδάσαντος ἀνδρὸς περὶ φάρμακα παντοτιά.”

Like that of Attalos III, Mithridates VI’s interest in medicine seems to have been wider than merely the use of poisons. Pliny 25.5ff says he enquired for medical information – presumably about folk remedies – among his subjects. Mithridates VI was also similar to Attalos III in that he himself discovered or invented medical remedies. The discoveries of the uses of the plants mithridatia and scordotis were attributed to him, including their worth as ingredients in antidotes. Eupatoria was named after him. His all-purpose antidotes (theriacs) were famous. After the king’s death Pompey discovered a remedy for total immunity lasting a day in Mithridates’ private notes, written in his own handwriting.

In fact, if Pliny is to be believed, kings discovered plants and cures on a regular basis: “Fuit quidem et hic quondam ambitus nominibus suis eas adoptandi, ut docebimus fecisse reges” (NH 25.22). These kings include Mithridates VI and Attalos III, but also Polemon, king of Pontos; Philetaerus, king of Kappadokia; one

29 Varro Res Rusticae 1.1.8; Pliny NH 18.22; Columella De rustica 1.1.8.
30 Celsus 6.6.5b. Galen De compositione medicamentorum per genera 1.13 (13.414 Kühn); De compositione medicamentorum 2σε πόσος 8.3 (13.142 Kühn); De simplicium medicamentorum temperamentis ac facultatibus 10.1 (12.251 Kühn).
31 De compositione medicamentorum per genera 1.13 (13.416 Kühn).
32 NH 25.62, 63. Pliny’s sources here are the earlier authors Krateuas and Lenaeos. Krateuas, a well-known writer of botanical treatises, is described as a περίζωγος by Dioskorides (praef. 1).
33 NH 23.149; c.f Galen, De antidotis 1.1, 1.15, 2.16 (14.2, 14.95, 14.283-4 Kühn).
Klymenos; Gentios, allegedly a one-time king of the Illyrians; Lysimachos, and Mausolos’ queen Artemisia. The recipe for theriac of Antiokhos III was inscribed in the Asklepieon on Kos.\textsuperscript{34} In the second half of the first century the Thrakian King Iuba discovered and wrote a treatise about a plant which he named after his physician Euphorbos.\textsuperscript{35} The detail in this particular anecdote, which explains how the locals gather and prepare the juice, suggests that in fact the kings in question ‘discover’ a plant which is already used in local remedies – hence, presumably, Mithridates VI’s enquiries among his subjects. Mythological discoverers, like Khiron, Akhilles, and Herakles are also used to explain the use and sometimes the name of various plants.\textsuperscript{36}

The status of ‘discoverer’ implies a benefactor of mankind, just as the mythic examples perform a similar aetiological function to Promethean legends of the discovery of useful skills and substances and their transmission to mortals. The paradigm of the ‘good’ king thus includes medical expertise, one comprised largely of joint folk-physician traditions about healing plants. Good kings discover such plants, expressing their power to favourably affect the lives of their subjects; bad kings are presented as having used their knowledge of poisons to murder their near-equals and disrupt the organisation and stability of the state.

A further factor in the relationship between Hellenistic kings and healing is suggested by the story that Mithridates VI not only tested antidotes on others, but then proceeded to immunise himself against all known poisons by repeated doses.\textsuperscript{37} There was a non-royal precedent for this behaviour. It was well known by Theophrastos’ time that the efficacy of substances like hellebore decreased in those who were used to them.

\begin{itemize}
\item \textsuperscript{34} Pliny, \textit{NH} 20.264.
\item \textsuperscript{35} \textit{NH} 25.77.
\item \textsuperscript{36} Pliny, \textit{NH} 25.89ff, also lists numerous animal ‘discoverers’ of plants. This makes clear that what Pliny means by ‘discovery’ is that a certain plant is used in local medical traditions, from which he deduces that there must have been an initial discovery. The attribution of pharmaceutical invention to kings presumably also relates to their use or recording of such folk traditions, or sometimes just to the most important local figure.
\item \textsuperscript{37} Appian \textit{Mithridatica} 537-8. Pliny \textit{NH} 25.127: the best remedy for all poisons and sorceries, after moly, is \textit{mithridata}.
\end{itemize}
The δυνάμεις of all drugs become weaker to those who are used to them, and in some cases become entirely ineffective. For some eat enough hellebore to consume whole bundles and suffer no harm; which Thrasyas did, being very clever about ἰζας.

He follows this up with an anecdote about a shepherd who challenged a drug-seller in the eating of poisonous root. The shepherd’s victory destroyed the drug-seller’s reputation: a combination of a marketing ploy and a demonstration of a mysterious power over what would be death to anybody else. Theophrastos also relates the story of Eudemos of Khios, who drank hellebore with an antidote and sat calmly at his stall in the agora. Evidently such demonstrations were not unusual, at least in Greece, but nor were they safe. Less successful was another Eudemos, φαρμακοπώλης εὔδοκιμῶν, who lost a bet on how much he could take and died.38 No doubt such reminders of the power of hellebore helped to convince laymen that those who survived its ingestion were genuine experts in drugs.

Mithridates VI’s precautions were designed to protect him against assassination. However, as for the drug-sellers, root-cutters and occasional shepherd, it also serves to demonstrate a rare, mysterious and awe-inspiring power over poisons. In this Mithridates VI’s ability is not distinctively royal, as it represents another kind of power altogether. It is linked to the power of healing and especially to power over φάρμακα. Pliny’s stories of royal discoveries suggest these abilities were seen as powerful in themselves, and therefore part of the power of a good king.

It is notable that this knowledge of healing substances on the part of kings does not seem to extend very far into the domain of the physician. Indeed, the discoveries of kings concern only the δυνάμεις of botanical and possibly animal substances, and were in most cases expressions of folk expertise like that of the expertise of the root-cutters and drug-sellers whose example Mithridates VI had

38 Theophrastos HP 9.17.1-3.
followed. The healing kings, whether pre-Hellenistic, Hellenistic, or Roman, seem to be cast in the semi-religious mould of having power over φάρμακα, rather than the explained, self-conscious, explicitly secular and controversial figure of the physician.

This aspect of the king is possibly linked to the abilities of at least some kings to be healers not simply by virtue of their knowledge, or their discovery of φάρμακα, but in virtue of their own selves. King Pyrrhos of Epiros (319-272) was able to cure inflammation of the spleen with the touch of his right big toe. The power of a king, his recognition by the gods, and in most Hellenistic cases his existence as a god all suggest an innate power to heal or harm.

To sum up, knowledge of powerful substances and ways of controlling those substances represented the power of traditional forms of healing and the converse threat of destruction. This kind of power had previously been part of the rhetoric of folk medicine and magic in the discourse and self-representation of the root-cutter and the drug-seller. In the Hellenistic era it was also used to represent several aspects of the power of the ruler. The associations with mythic and magical figures like Medea, Kirke, and Khiron reinforced the divine nature of those Hellenistic kings who had a reputation for being interested in φάρμακα, in that they could be seen to control the dangerous power of these substances. This was demonstrated, for example, by the ability of Mithridates VI to swallow death and remain unaffected, adding the mysticism of the root-cutter to his own ruler mystique.

Secondly, the ambiguity of φάρμακα – their identity as a two-edged weapon – means that they serve to signify and dramatise both the archetypal Hellenistic good king and the archetypal bad king, and in ambiguous cases to highlight the tension between the extreme power of the king and the dependence of his subjects on his essential benevolence.

39 Pliny NH 7.20. The reputed power of the Stuart kings to cure scrofula is a more recent example.
4.3: Power at court

The status of the court physician is not easy to locate precisely. In Egyptian literature, physicians (swnw) specifically associated with pharaoh and the court go back at least as far as the Old Kingdom (ca. 2700-2159). In Greece this specific function is less easy to identify before the sixth century: Homer’s physicians Machaon and Polidarios are themselves warriors and leaders of men, rather than the servants or associates of such.

The figure of the Greek court physician does, of course, appear in Herodotos, most notably in his account of the remarkable—partly legendary—sixth century career of Demokedes of Kroton. After having come to prominence as a public physician in Aegina, Demokedes was employed in turn by Aegina, the Athenians and Polykrates the tyrant of Samos for huge and increasing sums of money, culminating with the two talents paid to him by Polykrates. Then, the story goes, the Persian viceroy of Sardis killed Polykrates and enslaved his retinue, who ended up in Darios I’s court in Susa.

Darios dislocated his ankle joint. The pre-eminent physicians of Egypt only succeeded in making it worse, then someone mentioned the existence of Demokedes to the Persian king. Demokedes, fearing that success will keep him from returning to Greece, at first tried to dissimulate, but, under threat of torture, “applied Greek remedies and used gentleness instead of the Egyptians’ violence”, successfully eliminating the pain of the dislocation.

The result was much favour and wealth for Demokedes in Susa, but the patriotic physician was still intent on getting back to Greece. Meanwhile he saved the incompetent Egyptian doctors from being impaled and cured Darios’ wife Atossa. In return, she helped him to return to Greece by suggesting invasion to Darios, who duly responded by sending Demokedes out with a Persian scouting party. Demokedes evaded his companions and escaped to Kroton, where his compatriots resisted Persian threats to keep him safe there.

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40 There are forty-six such physicians recorded for the pharaonic period by Ghalioungui (1983).
41 Herodotos 3.125-137.
There are several interesting points about this story, even though much of the account of Demokedes’ sojourn at Darios I’s court and his ‘escape’ is probably a later folk-tale.\textsuperscript{42} It is not however improbable that Demokedes was employed by Darios I in some way for a while. Another Greek physician, Ktesias of Knidos, was the personal physician of Darios’ son Artaxerxes II in the next generation.\textsuperscript{43}

In Herodotos’ romanticised version, Demokedes has to be called in when Darios I is failed by Egyptian physicians - previously the medical leaders of the known world. Homer had said that every man in Egypt is “\textit{ηπρός δὲ ἔκαστος ἐπιστάμενος περὶ πάντων ἀνθρώπων}.”\textsuperscript{44} Demokedes’ pre-eminence asserts the superiority of the new kind of Greek medicine over the representatives of the traditionally expert Egypt. This suggests that the new Greek medicine was already being constructed as a culturally distinctive icon in opposition to barbarian power and culture. Remarks in Aristophanes also imply a dismissive attitude to Egyptian medicine, which is stereotypically portrayed at both \textit{Pax} 1253-4 and \textit{Thesmophoriazusae} 857 as an obsession with laxatives.

This representation was in tension with the opposing tendency in Greek thought to emphasise ancient Egyptian expertise in medical and magical knowledge. Any influence of the native traditions upon Greek colonists in Egypt may therefore have been individualised in accordance with highly personal choices between these two extremes. The degree to which any individual Greek favoured Egyptian medicine was inversely proportional to the degree to which he favoured the new secular medicine, and perhaps especially the degree to which he accepted its justifications. It is these which place the new secular medicine in explicit opposition to those aspects of medicine for which Egypt was famous. Thus the intellectual elite of Greece may

\textsuperscript{42} See Griffiths’ convincing article (1987).
\textsuperscript{43} Diodoros Sikulos 2.32.
\textsuperscript{44} \textit{Odyssey} 4.231-2.
have been as a group more likely than other Greeks to reject the traditional claims for Egyptian medicine.

In the Greek world the position of the court physician was closely related to the image of the expert physician. The classical and later phenomenon of competitive and individualised practitioners of the new secular medicine allowed new variations on the tropes of Greek medicine and Greek physicians.

For instance, Demokedes, who heals, is kidnapped by, and heroically escapes from various kings and tyrants is a rather different animal to the anonymous swm where the Egyptian records. He is recruited as an individual, almost the legendary exemplar of healing, rather than as just another specialist professional. In fact Demokedes’ career is a manifestation of a not uncommon trope in Greek medical and historical literature: the presentation of an individually famous physician as the brilliant healer whose talents inevitably outstrip and bewilder the plural and unnamed competition and, using apparently mysterious means, gain almost miraculous results.45

The various description of and anecdotes concerning the life of Hippokrates portray their subject in the same way: as a clever, uniquely and mysteriously talented healer and moral exemplar. Certain incidents feature in all these biographies, including the earlier, Hellenistic, versions. Hippokrates is summoned by the Abderites to cure the insane Demokritos. He refuses to help the Illyrians and Paeonians with their epidemic, but predicts its spread to Greece and sends out his sons and students to explain precautions and remedies to the cities.46 He turns down a

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45 Even in his first year in Aegina, Herodotos says that “he excelled all the other doctors, although he had no equipment nor any of the implements of his art” (3.131). This lack of technological aid positions Demokedes closer to the ideal of the Asklepians, semi-miraculous healer who can cure merely by his knowledge, almost just by his presence, rather than one reliant on the usual – and generally painful – mechanisms. At 3.125 he is described simply as “ίηπτρόν τε ἐόντα καὶ τὴν τέχνην ἀεικένοντα ἄριστα τῶν κατ’ ἐκπλήν.”

46 One of the earliest Hippocratic myths, as the existence of the Hellenistic Embassy text shows. Pinault (1992) 13.
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large monetary offer from Artaxerxes II, king of the Persians.\textsuperscript{47} As Pinault (1992) 73 comments "these successive stories [...] illustrate, respectively, Hippokrates’ skill in diagnosis, his skill in treatment, and his patriotic and ethical incorruptibility."

The similarity of these \textit{motifs} to those of Herodotos’ idealisation of Demokedes is clear. Even some of the details are remarkably similar. The Koans refuse to hand over Hippokrates to Artaxerxes even when their city is threatened with destruction, just as the people of Kroton protected Demokedes in the face of Persian demands and threats.

The brilliant physician, from at least the first century CE, also plays a major role in the recurrent drama involving the diagnosis of secret lovesickness. This provides a template for Erasistratos and the Seleukid prince Antiokhos, is adapted for Hippokrates and the Makedonian ruler Perdikkas, and is even taken up by Galen to demonstrate his own ability.\textsuperscript{48} Galen also insists on the Hippocratic model of ethical behaviour for physicians: the ideal doctor:

\[ [...] \text{will look down on Artaxerxes and Perdikkas; he will never even see the former, while he will treat the latter when he is ill and needs Hippokrates’ art, but surely will not think it right to stay with him forever; and he will treat the poor of Kranon, Thasos and other small towns.}\]\textsuperscript{49}

This kind of healer intervenes in the fate of kings and thus the fate of nations, restoring order to threatened chaos. Like Demokedes, he becomes a tradable and rare commodity, both valuable and consequently vulnerable. In the Hellenistic and Roman period, he is often a court physician, or at least is called in by the ruler in times of crisis as the pre-eminent healer of his time.


\textsuperscript{48} See chapter 3 pp. 125-6 for references and further discussion.

\textsuperscript{49} Galen \textit{Quod optimus medicus} 3 (Scripta Minora 2.5). For more on medical ethics and ideals see \textit{4.5}.
This pre-eminence, and the physician’s relationship with the king and court, places him close to power. In the Hellenistic period court physicians appear from time to time both in positions of power themselves and as victims of it. Both possibilities depend on the access and relationship of the physician to the king.

There were two aspects to this. Firstly, the physician was necessary in that his function – preserving the health of the king from the threats of disease and poison – was necessary. This role, I argue, was at once a potential enhancement and a potential threat to the social status of physicians. It was a threat to their status in that it was a role that was not dependent upon a particular individual, who was therefore replaceable. It was an enhancement to their status in that the court physician was vital to the king, and as long as a particular individual was identified with that position, he was vital to the king.

Secondly, the elite physician of the classical and Hellenistic periods – a class which obviously included all court physicians - was also an intellectual, as were philosophers, astronomers, mathematicians, literary critics and poets. This set overlapped with the social elite of the Hellenistic world, a group defined by birth, wealth, and education.\(^5^0\) The intellectuals, including court and other elite physicians, represented a kind of capital cultural wealth for the kings to whose court and country they were attached. Furthermore they demonstrated, by association, the personal ability and prestige of the king. There are numerous accounts of Philadelphos, for example, debating with philosophers in the context of court ritual and entertainment, as when he trapped the Stoic Sphaeros with wax pomegranates in an argument over the cataleptic impression.\(^5^1\)

For the intellectual, too, association with a king brought an increased reputation and probably other benefits. Erasistratos dedicated an emollient plaster to one of the

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\(^{50}\) Both physicians and philosophers were included in Euergetes II’s expulsion of the Alexandrian intelligentsia in 145/4: Athenaeos 184b-c.

\(^{51}\) Diogenes Laertios 7.177 and chapter one.
Arkhimedes dedicated his work the *Sandreckoner* to Geron, the son of the king of Syракuse. Eratosthenes wrote an epigram to Euergetes II.

Furthermore, as members of the social elite such intellectual physicians were also members of the *xenia* network of power and influence among Greeks and Makedonians in the Hellenistic world, together with army commanders, politicians, judges, and other courtiers. The use of intellectuals as envoys and advisers in the Hellenistic world has been documented several times. They included the Athenian comic poet who acted for Lysimakhos, as well as the architect Sostratos of Knidos and Kallimakhos’ friend the poet Herakleitos of Halikarnassos, both as representatives of Philadelphos. Antigonos Gonatas appointed the Stoic Persaeos governor of Korinth.

Herman (1997) 213-4 gives an analysis of Hellenistic court society which places physicians relatively low down the hierarchy of importance, status, and access to the king. First came the relations by blood and marriage. Then the bodyguards recruited from the royal pages. Thirdly the king’s ‘Friends’, followed by loosely attached and/or temporary courtiers, often recruited to carry out important missions. This group tended to be particularly mobile, and included intellectuals, ambassadors, and political exiles. Next were the specialist assistants to meet the needs of the above categories: including doctors, scribes, cooks, and barbers. The above categories have their own specialist and non-specialist slaves, and all groups brought with them their own families and followers.

In practice many of these categories overlapped. Intellectuals and ambassadors, for example, often or usually ranked as Friends in Hellenistic society. Arkhimedes was a

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52 Caelius Aurelianus *TP* 5.2.50 (*CML* 6.1.2, 884.4-5).
53 Plutarch *Marcellus* 1.4.7.
54 See Pfeiffer (1968) 155 and 168-9; c.f. Athenaeos 276a-c, which suggests that Eratosthenes associated with the king and queen on an informal basis.
56 “Friend” is a semi-formal status, approximating to the close entourage of a king.
Friend of king Hieron II; Eratosthenes and Kallimakhos may have been Friends of successive Ptolemies. In his epigram Eratosthenes addresses the king familiarly as ὤγαθε, and Strabo 17.3.22 describes both him and Kallimakhos as being “honoured by the kings of the Egyptians.”

In particular, the king’s physician, at least, was of greater status than Herman’s ranking of ‘specialist assistant’ suggests. Physicians of suitable reputation and education were rare, even if not as rare as Demokedes had been in the sixth century. Moreover, like other intellectuals - rather than like cooks or barbers - they were sent on diplomatic missions. Makhaon, physician of Kyzikos, was an envoy of the Greek states to the Roman embassies; and Demetrios Phakas went on missions for Ptolemy XII. Antiokhos III’s physician Apollonanes is named by Polybios as being one of the king’s friends and described as giving strategic advice on the invasion of Coele-Syria (5.58). Polybios also records that king Eumenes of Pergamon sent his physician Stratios, “a man of good sense and persuasive power” to reason with the king’s brother Attalos (30.2).

Thus the king’s physician, and to a lesser extent the other court doctors, were powerful in several respects:

1) As a ‘specialist assistant’ to the king, they had close and probably frequent access to him.

2) Like other courtiers, they had the wealth that comes from royal favour, and the network of eager-to-please lesser followers that wealth and influence entailed.

3) As intellectuals, possibly ‘Friends’, they had an access and an influence on policy matters not enjoyed by the other τἐχνηταί.

4) As the possessors of the most vital skill among either the courtiers or the τἐχνηταί, keeping the ruler alive and the succession going, they were in

57 Cameron (1995) points out that as the formula he uses, τετιμημένοι παρά, “though not striking in itself, corresponds to one of the styles applied to the king’s Friends.”
certain situations critical personnel.

I will take three examples to illustrate these different relations of the court physician to the power of the court.

The first is recounted by Polybios in some detail at 5.56, and concerns the elimination of a dangerous courtier by king Antiokhos III of Seleukia. The king’s personal physician Apollphanes played a crucial role:

After the ratification of this treaty Apollphanes, the king’s physician and a great favourite of his, seeing that Hermeias no longer put any restraint on his arbitrary exercise of authority, became anxious for the king’s safety and was still more suspicious and fearful on his own account.

Apollphanes talked directly to the king and warned him, discovering that the king was also suspicious of Hermeias. “Apollphanes was much encouraged by finding that he had not misestimated the king’s sentiment and opinion” and they agreed upon a plan.

Pretending that the king was attacked by fits of dizziness he and his physicians relieved of their functions for a few days his usual civil and military attendants, but they were themselves enabled to admit any of their friends to interview under the pretence of medical attendance. During these days they prepared suitable persons for the work in hand [...] and now they set themselves to execute their design. The doctors having ordered early walks in the cool of the morning for the king, Hermeias came at the appointed hour accompanied by those of the king’s friends who were privy to the plot, the rest being behindhand as the king took the air at a far earlier hour than usual. So they drew Hermeias away from the camp till they reached a solitary spot and then upon the king’s retiring for a short distance as if for some necessary occasion, they stabbed Hermeias with their poniards.

The incident demonstrates the huge advantage gained by ready access to the person of the king, and also that physicians are peculiarly well placed to enjoy such access.59

59 Another such physician may have been Krateros, one of τῶν πρώτων φίλων, ἀρχιτρός, and director of the king’s bedchamber: OGIS 256 (129-117).
The second and third examples demonstrate the converse vulnerability of the physician, over and above the normal risks for court officials of accusation, treason, deception, and changes in power.

Roman historians say that in 138 the young Seleukid prince Antiokhos VI was murdered by the general Diodotos Tryphon. Livy’s account:

He was killed by a ruse invented by some corrupt doctors: they lied to the people that he suffered greatly because of a stone, and killed him during the operation.\(^{60}\)

This is presumably a polemical spin on an operation that went wrong. It illustrates that court physicians, who could not evade the demands of a royal illness, were not simply risking a reputation for competence but were also inextricably vulnerable to accusations of political motivation.\(^{61}\)

A similar incident, though very differently portrayed, is the story of Alexander and his physician Philip. Several sources retell this anecdote.\(^{62}\) The version given here is that of Plutarch, *Alexander* 19.

Alexander fell seriously ill in Kilikia. The physicians were afraid to help him in case of retribution and accusation if they did not succeed (for more on this see 4.5).

Philip the Akarnian, who saw that the king was in an evil plight, put confidence in his friendship, and thinking it a shameful thing not to share his peril by exhausting the resources of art in trying to help him even at great risk, prepared a medicine and persuaded him to drink it boldly, if he was anxious to regain his strength for the war. Meanwhile Parmenion sent a letter to Alexander from the camp, urging him to be on his guard against Philip, for the reason that Darios had persuaded him with the promise of large gifts and a

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\(^{61}\) Similar cases from the Roman era are the accusation at Tacitus *Annales* 12.67.2 that Claudius’ doctor Xenophon poisoned the emperor while apparently assisting him in return for monetary reward; Lucus Aurelius was bled by his physician Posidippos and subsequently died, again a standard medical procedure that went wrong and was alleged to be a deliberate mistake: SHA *vita Marci* 15.5.

\(^{62}\) Including Diodorus Sikulos 17.41.4-6; Arrian 2.4.7-11; Curtius Rufus 3.5-6 *passim*, 3.71; Justin 11.8.3-9.
marriage with his daughter, to kill Alexander. Alexander read the letter and placed it under his pillow [...] When Philip came in [...] carrying the medicine in a cup, Alexander handed him the letter, while he himself took the medicine from him with readiness and no sign of suspicion [...] Alexander, by his glad and open countenance, showed his good will towards Philip and his trust in him, while Philip was beside himself at the calumny, now lifting up his hands toward heaven and calling upon the gods to witness his innocence, and now falling upon the couch on which Alexander lay and beseeching him to be of good courage and obey his physician. For at first the medicine mastered the patient, and as it were drove back and buried deep his bodily powers so that his voice failed, he fell into a swoon, and became almost wholly unconscious. However Philip speedily restored him to his senses [...].

The opportunities for attacking the king with impunity were greater for a physician, particularly under circumstances of war or illness, than for almost anyone else among his retinue. As a direct consequence, the physician is correspondingly more at risk of accusation should anything go wrong or the patient die – which in the ancient world was not improbable.

For this reason the relationship between king and court physician was necessarily a close one involving considerable trust on both sides. Note that in Polybios 5.56 above the physician Apollonophanes is described as a “favourite” of the king, while Philip relies for his safety on his friendship \((τῆ δὲ φιλία πιστεύων)\) with Alexander. This suggests another reason why court physicians were members of the social elite and were so regarded: the king could hardly be friends with people of much lower status.

Physicians were also more vulnerable than most other courtiers in a very literal way. As essentially body-servants they were often physically closer to the king on a regular basis than were other officials. This enabled the access so useful to Apollonophanes above, but was less favourable for Ptolemy IV Philopator’s physician, the well-known Herophylean Andreas. On the eve of the battle of Raphia in 217, an assassin:

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63 Surely an improbable offer. Nonetheless, the fact that this story is at best embroidered and possibly entirely untrue does not detract from the fact that the interpretations supplied for the characters’ actions were felt to be plausible by ancient authors.
bursting into the tent in which the king used to dine and transact business, searched everywhere. He failed indeed to find the king, who was in the habit of retiring to rest outside the principal and official tent, but after wounding two of those who slept there and killing the king's physician Andreas [...] (Polybios 5.81).

To sum up, the court physician exemplifies the ideal of the pre-eminent Greek physician, and magnifies it by association with the power of kings, becoming a player in historically crucial situations. He is also especially vulnerable to the less favourable medical stereotypes of incompetence, avarice and murder, due to the critical nature of his role and the uncertain nature of medical outcomes. These stereotypes, and the counter-reactions of physicians, will be further investigated in 4.5.

Finally, the very fact that physicians, practitioners of secular, 'rational' medicine, were universally present at Hellenistic courts as the king's official and designated healers should not be overlooked. This may be related to the perception of this kind of medicine as something distinctively Greek and superior, as with Demokedes at Darios' court. Certainly it demonstrates the success of intellectual medicine in becoming a necessary part of the culture of the social elite. There is an anecdote in which Herophilos gets the better of the visiting logician Diodoros Kronos. Diodoros one day went to Herophilos with a broken shoulder, and Herophilos borrowed one of Diodoros' own arguments against motion to prove to him that it could not be dislocated. As Sedley notes, “the story is an obvious Hellenistic fabrication”, but it does prove that such a meeting was thought to be a plausible one.  

Like the other references to Diodoros in Alexandria, it presents the philosopher as being mocked by Alexandrian intellectuals.  

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64 Sedley (1977) 79.  
65 Kallimakhos fr. 393 Pfeiffer; Diogenes Laertios 2.111-2.
The second physician reported as engaging in polemical debate with notable non-physicians is the Herophilean Andreas, who was accused of plagiarism — being a "literary Aegisthos" - by his contemporary, Eratosthenes.66

Both these anecdotes demonstrate that certain physicians were part of intellectual discourse and society in the Hellenistic world and in Ptolemaic Alexandria particularly.

4.4: Poetic license

Kallimakhos’ Akontios et Kydippe recounts the story of Kydippe, a young woman of Naxos who had accidentally sworn to Artemis that she would marry only Akontios. The customs of Naxos dictate that a man and woman should share the same bed on the eve of their marriage, allegedly in honour of the pre-marital incest of Zeus and Hera. When Kydippe does so, however, with a betrothed who is not Akontios, she is stricken each time with severe illness until an appeal to the oracle reveals the cause of the problem and she can marry Akontios.67

The first illness is described at ll. 12-15:

δειλινήν τὴν δ' εἶλε κακός χλόος, ἠλθὲ δὲ νοῦσος
ἀλγας ἐς ἀγριάδας τὴν ἀποπεμπόμεθα
ψευδόμενοι δ' λεηθν φημίζομεν. ἢ τὸτ' ἀνγρὴ
tὴν κούρην Ἀιδήσεω μέχρις ἔτηξε δόμων.

This looks like a reference to the Hippocratic text De morbo sacro.68 The argument of this treatise, precisely as Kallimakhos’ parenthetical remark has it, is that the so-called 'sacred disease' is not in fact sacred. The Hippocratic text also mentions goats, as animals believed to be harmful by those people who think that epilepsy is a sacred disease. Perhaps it is this that leads Kallimakhos to pick goats as suitable recipients

66 Both Von Staden (1989) 472, An. 2; and Fraser (1972) I 370-1 assume that the work(s) in question must have been Eratosthenes' own. This does not seem at all necessary, especially given Eratosthenes' role as Librarian and his necessary acquaintance with a wide number of texts.
67 Aitia 3 (fr. 75 Pfeiffer).
68 Pfeiffer ad loc. notes this but does not analyse further.
of the illness. The Hippocratic says that “quotidian fevers, tertans and quartans, seem to me to be no less sacred and god-sent than this disease, but nobody wonders at them.” The next misfortune to befall Kydippe happens to be a quartan fever.

Of course, other authors besides the writer of the Hippocratic text had challenged the ‘sacredness’ of the sacred disease. Herodotos, who often seems to employ Hippocratic terms and to be aware of contemporary medical and physiological theory, references the disputed name of the disease at 3.33: “they say that Kambyses suffered by heredity the disease which some call sacred.”

Whether or not Kallimakhos is alluding to De morbo sacro itself, he is deliberately highlighting this kind of medical argument. This is doubly odd in view of the facts that his very next words claim the disease is “sent away” onto wild goats, which is hardly appropriate to the rejection of its “sacred” nature. Moreover in this case the disease is sent by Artemis to ensure the fulfilment of Kydippe’s oath. Therefore, presumably, sacred is exactly what it is.

The paradox of Kallimakhos apparently making use of a disputed strand in Greek medicine in a work whose theme seems to be directly opposed to it should perhaps be read as a signal that other elements of the story are equally disguised. This would dovetail with how commentators have tended to read the poem. In particular, they have pointed out how the aetiological mythic explanation for the Naxian marriage custom is not a very successful one. The parallel breaks down repeatedly, just as does any attempt to combine the traditional explanation and description of Kydippe’s illness with the Hippocratic medical argument for its non-divine nature.

Another effect of Kallimakhos’ use of medical argument in Akontios et Kydippe is to demonstrate his awareness of it. There are several other examples of probable

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69 De morbo sacro 1 (6.352-4 Littre).
70 De morbo sacro 3-4 (6.366-368 Littre) argues that if the disease is indeed sacred, then those who attack it with purifications and exorcisms are behaving impiously.
deliberate and deliberately up-to-date such medical references among Hellenistic poets. The most striking is that of Apollonios Rhodios:72

εὔσωλι δ’ αἰεὶ
tεἴρ’ ὀδύνη, σμύχουσα διὰ χρονὸς ἀμφί τ’ ἄραιάς
ἶνας καὶ κεφαλῆς ὅπω νείατον ἤπων ἄχρις,
εὐθ’ ἀλεγεινότατον δύνει ἄχος, ὑπόπτ’ ἀνίς
ἀκάματοι πραπίδεσοιν ἐνισκίμψωσιν Ἕρωτες.

The passage imitates Homer in its language and in its concern for anatomical precision, though the content is of love rather than of war.73 The “ἄραιας ἵνας” are taken by commentators to mean “nerves” (νεῦρα) and to refer to Herophilos’ and/or Erasistratos’ work on the existence of the nervous system and its connection to the brain.74 This connection is not suggested by terminology, as the term νευρά is part of Homeric vocabulary and therefore certainly acceptable in this context. Again, the mere placement of the head rather than the heart as the site where “ἐνθ’ ἀλεγεινότατον δύνει ἄχος” does not identify the anatomists in particular. Some earlier physiological speculation had placed the ἄραμονικόν in the brain and various theories had been proposed about the roles of the veins, arteries and respiration in the transmission of sensation and volition.

But the description of fine strands which deliver pain to the occiput – the back of the head - is strongly reminiscent of the anatomists’ work. Herophilos placed the ἄραμονικόν in the fourth ventricle or the cerebellum just behind it, describing it as “that ventricle of the brain which is also its base.”75 The cerebellum is a rounded structure located behind the brain stem at the base of the skull, concerned mainly with balance and movement. Erasistratos seems to have split the ἄραμονικόν’s functions between the cerebellum and the cerebrum, the main mass of the brain seperated by a transverse fissure from the cerebellum, which it closely resembles.76 It seems slightly

72 Argonautica 3.761-65.
75 Ps.-Galen De historia philosophia 28 (19-315 Kühn); Galen De usu partium 8.11 (1.484 Helmreich).
76 Galen, De placitis Hippocratis et Platonis 7.3 (CMG 5.5.1, 2.440.6-13)
more likely that Herophilos rather than Erasistratos was the initial source of the conception Apollonios uses here, as the cerebellum is closer to the occiput. Yet Apollonios’ extremely vague terminology may simply represent an equally vague notion of exactly what either anatomist had discovered.

Two other points should be noted. Firstly, Apollonios is not committed to this theory. Just before the quoted passage, he cited emotions in Medea’s heart (καρδία). His use, if use it was, of the anatomists’ findings should not be read as an epistemic commitment. Rather the existence of a recent and controversial account of perception in elite medicine enabled him to vary and develop traditional imagery, placing himself simultaneously in a Homeric and a Hellenistic context.

Secondly Apollonios’ awareness of the nerves and their connection with the brain may not have come directly from the writings of Herophilos or other physicians, though there is equally no reason to assume they did not. Whether transmitted directly or indirectly through the intellectual elite until they reached a state of widespread awareness, some medical terminology and argument appears to have been widely known.

A third example of the possible use of recent medical work by non-medical authors concerns the use of the word δίδυμος for testicle and ovary (the female testicles). Herophilos seems to have invented this application. Galen specifically says that “δίδυμος is what Herophilos calls the ἰχνος.”77 Von Staden (1989) 231 suggests that this application of the term was transmitted to the translators of the Septuagint. The term appears in the Greek text of Deuteronomy 25.11. The Septuagint – the translation of the Jewish Tanakh into Greek – was the work of various authors between the third century and the beginning of Christianity. According to the second century text known as the Letter of Aristeas it was commissioned by Philadephos for the Library, but the main purpose of the Septuagint and other translations of the Tanakh.

77 Ibid.14.11 (2.323.22-3 Helmreich) c.f. De semine 2.1 (CMG 5.3.1, 146.13 and 148.24), where Galen uses ἰχνος for ovaries on his own account and δίδυμος when quoting Herophilos directly.
was to provide a text for Hellenised Jews in Egypt. As the *Letter* describes, it was probably translated in Alexandria, but less probably by 72 scholars from Judaea.

It is thus possible that Alexandrian Jews, familiar with Greek, used a deliberately up-to-date medical term, not least because the Septuagint translation of Deuteronomy would have been in competition with rival translations.\(^7^8\) But von Staden’s suggestion that Philopator’s physician Andreas is to be identified with the Andreas, “the chief bodyguard” and ambassador mentioned in the *Letter* – which purports to belong to Philadelphos’ reign - has no support beyond that of the name.\(^7^9\)

Δίδυμος is also employed in a first century erotic epigram by Philodemos:\(^8^0\)

\[
\begin{align*}
\text{Πέντε δίδωσιν ἐνὸς τῇ δείνα ὁ δείνα τάλαντα,} \\
\text{kai} \quad \text{βινεῖ} \quad \text{φρέσσων} \quad \text{kai}, \quad \muὰ \quad \text{τὸν,} \quad \text{oυδὲ} \quad \text{καλὴν.} \\
\text{πέντε} \quad \delta' \quad \text{ἐγὼ} \quad \text{δραχμᾶς} \quad \text{τῶν} \quad \text{δέδωκα} \quad \text{Λυσιανᾶσσῃ} \\
\text{kai} \quad \text{βινώ} \quad \text{πρὸς} \quad \text{τῷ} \quad \text{κρέσσονα} \quad \text{kai} \quad \text{φανερῶς.} \\
\text{πάντως} \quad \text{ἡ} \quad \text{τὸ} \quad \text{ἐγὼ} \quad \text{φέρνας} \quad \text{οὐκ} \quad \text{ἐχω,} \quad \text{ἡ} \quad \text{τὸ} \quad \text{γε} \quad \text{λοιπὸν} \\
\text{τοὺς} \quad \text{κείνου} \quad \text{πελέκει} \quad \text{δεῖ} \quad \text{διδύμους} \quad \text{ᾳφελεῖν.}
\end{align*}
\]

Both the Septuagint translators and Philodemos may either have read Herophilos directly or picked up on a use of the word among intellectuals which had originated with his innovation but may not have invariably been attributed to him. But in view of Galen’s specific attribution to Herophilos of the term and the continued wide use of the more traditional δρχις, it seems more likely that δίδυμος was widely connected with Herophilos the Alexandrian physician. In this case, those who used the term were engaged on a deliberate attempt to reflect contemporary and high status forms of knowledge.

Opperman (1925) argued that Herophilos was the first person to hold a ‘four-coat’ theory of the anatomy of the eye, and that Kallimakhos was influenced by this at

\(^{78}\) The purpose of the *Letter* may have been to defend or advertise the Septuagint as authoritative in just such a context: Gruen (1997) 82.


\(^{80}\) Palatine Anthology 5.125; Von Staden (1989) 231.
**Hymnus in Dianem 52-4** (Pfeiffer): πάσι δ' ὑπ' ὀφρῶν φάεα μουνόγλημα σάκει ἵσα τετραβοεῖσι δεινῶν ὑπογλαύσσουτα. The evidence for Herophilos asserting this theory is supportive but not conclusive, and Kallimakhos’ use of it must therefore remain only an interesting possibility.\(^{81}\)

Kallimakhos also employs medical terminology in one of his epigrams.\(^{83}\)

\[\text{ἐπικακέρ μάτων φάρμακον ἀ σοφία.}
\]

The following argument will suggest that the theme of both Theokritos’ *Idyll 11* and Kallimakhos’ *Epigram 46*, not to mention the other potential allusions to medical innovations cited above, involves the one-upmanship prevalent among intellectuals of the Hellenistic era. I say ‘Hellenistic’ not because other periods in antiquity were

\(^{81}\) See Fraser (1972) I 356 and II 512; von Staden T87-T89 and 238.

\(^{82}\) *Ep. 46* (Pfeiffer).

\(^{83}\) *P. Zen. Mich.* 55 (240). See also *PP* 16640; 16614 = 14990 and (?) 16650.
necessarily less competitive, but simply to make it clear that the discussion will focus on the particular kind of competition and display prevalent in this time period.

The competitive cultural displays of the Successor kings have been noted before (see chapters one and three). They were instantiated in the Libraries of Alexandria and Pergamon, in the Museion and Pharos of Alexandria, and in the expensive festivals put on by the Ptolemies, which included gymnastic, musical and poetry competitions.\footnote{Note that Herondas singles out the Museion in his list of Egypt’s attractions (Miniumbi 4). References to the Pharos are relatively frequent, implying that it was something Egyptian Greeks were proud of, and certainly that those poets patronised by its builders were concerned to draw attention to.}

Competition among Greek poets and other authors for reputation, monetary gain and royal patronage often took the form of the innovative expression and display of the common intellectual heritage, both the well-known and the allusive, the traditional and the new. The recondite nature of some of Kallimakhos’ references are not only a display of his own knowledge and a challenge to his competitors to match it, but also a challenge to his audience(s) to understand him.

This elite culture was not necessarily particularly marginal – \textit{pace} Hunter (1992). I follow here rather Cameron (1995). Certainly evidence from outside Alexandria suggests that literature made by the social elite was quite widely read among the Greek community in Egypt. In second century Memphis the archive of the sons of Glaukias, a low-status family with probably both Makedonian and Egyptian members, contained copies of epigrams by Posidippos and passages by Aeschylos, Euripides and Menander. They also seem to have read an astronomical treatise entitled \textit{The art of Eudoxos}.\footnote{Thompson (1988) 252ff.} Theokritos 15 envisages two Greek women, Praxinoa and Gorgo, listening to “learned” poetry. Moreover, Greek literature – particularly Homer and the tragedies of Euripides – were widely used to teach Greek to the young.\footnote{Thompson (1992) 325.}
Thus there were several audiences for the work of elite poets, and the lack of a full understanding of all the possible allusions and interpretations relevant to a particular poem did not exclude comprehension on a different scale or of a different kind. Only the learned might have caught the medical and other references and ambiguities in Akontios et Kydippe, but the main theme of Idyll 11 and Epigram 46 is a familiar and explicit one. As Hutchinson puts it:

 [...] in Theokritos the metaphor of healing, not striking in itself, is made significant and pointed by the exploitation of Nikias’ profession; and the notion of song curing passion governs the structure of the whole poem.

Similarly the use of ordinary medical terminology by Kallimakhos reinforces the playful assertion of the curative properties of poetry over (normal) medicine, by extending and pinning down the metaphor of poetry as medicine. Both it and more specialised terms also display Kallimakhos’ individual knowledge of and command over characteristic medical jargon and expertise: competition by co-optation. There are many mansions in the poets’ house, and they are masters of them all.

The last line of Theokritos’ poem satirises the physician’s desire for money as Polyphemos, successfully cured of the agonies of love by music, is in a state “more comfortable than if he had paid over gold (80ff).” The physician desires money but fails to supply a cure, comparing badly to the skill of the poet in curing the physical symptoms brought on by love – or the “disease” of love as Kallimakhos’ version has

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87 Cameron (1995) 57: “‘Learned’ poetry was not a minority cult but the dominant mode. It is a common frailty of the academic mind to suppose that only those who can identify every last allusion can really enjoy a given work.”

88 (1988) 179. This trope was not confined to Greek literature. An Egyptian papyrus containing a series of love poems includes one in which lovesickness is described as a condition which doctors and magicians are powerless to cure: Chester Beatty 1.a.2 in Lichtheim II (1976) 181-186.

89 Most (1981) argues that in Hymnus in Delum Kallimakhos altered the traditional parturition posture of Leto, described in the Homeric Hymnus in Apollinem, to that recommended by Herophilos. However Von Staden (1989) pp. 394-5 points out that Leto’s position in Hymnus in Delum, though not that of the Hymnus in Apollinem, is in fact the traditional posture for giving birth in Greek culture; not to mention that Herophilos’ views on the correct posture are not extant and can only be inferred. Other possible references by Kallimakhos to the contemporary Alexandrian anatomist are suggested by Mineur (1984) 92 and 120, but they are extremely fragile.
it. This image of the physician as inferior to the successful and free treatment of the poet contrasts with the idealised worker of miracles that we saw earlier in the figures of Hippokrates and Demokedes. Theokritos and Kallimakhos here employ a mild version of an alternative stereotype of physicians in Greek cultural discourse, one which standardly involved venality and incompetence. Here Theokritos 11 plays upon it in a game of one-upmanship with Nikias, the physician it addresses, an intellectual competitor and in Nikias’ case a rival poet.

The argument is that to the poets, the pre-eminent literati of the Hellenistic world, the medicine of the rationalistic physicians represented another strand of elite social and intellectual knowledge. As such it was material with which they competed to display their mastery of learning and the power to transfigure it. Secondly, they used the stereotypes and characteristics of medicine as a means of dramatising and reconfiguring emotional, aesthetic, and political subject matter. Support for these contentions comes from the ways in which the poets used other culturally specific and socially exclusive disciplines – that is, those disciplines which in their most developed and recent forms required considerable education in order to be fully understood.

The commonest use by the Alexandrian and other Hellenistic poets of another intellectual mode is astronomy, and a prime example is Kallimakhos’ Koma Berenikes:

Konon, who has observed every star in the sky, determined their risings and settings, is the expert on solar eclipses, the corona’s splendour, the slow precession of the constellations […]. (ll. 1-7 in the Latin text).

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90 This tendency is evident in Kallimakhos, Apollonios and others, but not noticeably so in Theokritos: Zanker (1987) 124ff.
91 Aetia 4 (fr. 110 Pfeiffer). The encomium upon Konon is known only from Catullus 66.
This encomium, and the form for Kallimakhos’ praise of Berenike, was the result of Konon’s discovery of a new constellation, which the Alexandrian astronomer duly named the Koma Berenikes. Kallimakhos accurately describes the Koma Berenikes in relation to the other constellations.

Aratos’ Phaenomena demonstrated the suitability of heavenly phenomena and their relations with the earth for the subject matter of poetry in a different way, being the best known and most valued of several didactic poems on astronomy. Kallimakhos wrote an epigram in praise of this author, his slightly older contemporary, and Aratos probably visited Alexandria. Although in the Hesiodic tradition, Aratos’ poetry was heavily based on the up-to-date astronomical work of Eudoxos. Cameron (1995) 198 notes that subsequent commentaries on this work in antiquity tended to concentrate on the accuracy or otherwise of Aratos’ astronomy rather than the quality of his poetry.

This is further evidence, I would argue, that the poet who utilises the knowledge of science (and other kinds of knowledge, for that matter) is deliberately displaying his mastery of that subject – the more difficult, exclusive and high status the better – rather than simply using it only for inspiration or as subject matter. Kallimakhos’ Iambus 1 58ff even displays geometrical knowledge in the shape of Pythagoras’ triangle theorem – rather more difficult than the movements of the stars to utilise as a poetic theme, but for that very reason the most recondite of all. Medicine too was perceived as a suitable topic of didactic poetry, albeit less often than astronomy. Aratos wrote a work entitled Iatrica, though as it is not extant its sources cannot be identified. It might have included the work of the anatomists, as Aratos was a generation younger than Herophilos. Certainly, on the assumption that Aratos followed the same procedure as in the Phaenomena, his Iatrica would have been relatively accurate, recent and comprehensive.

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92 Epigram 27 (Pfeiffer).
93 Fr. 191 Pfeiffer.
The only poems on medicine actually to survive from the Hellenistic era are those of Nikander of Kolophon (fl. ca. 130). The *Theriaca* concerned poisonous snakes and insects, together with remedies for their bites and stings, while the *Alexipharmaca* detailed botanical, animal and mineral poisons and their antidotes. His work, like that of Aratos, relied upon specialists in the field but demonstrated little comprehension of the actual material.95

Poisons and anti-poisons would appear to be a more popularly successful choice of medical subject matter than the details of diagnosis, anatomy or physiology, or indeed ordinary diseases and their treatments. The physician and the natural scientist are both missing from Nikander’s work, whose theriaca and antidotes owe as much to folk medicine and the expertise of the root-cutters and drug sellers of the Mediterranean world as they do to physicians (see 4.2). But poisonous animals and substances, while admittedly a not uncommon hazard – particularly in Egypt – were not so great and prevalent a risk as the proportion of literature devoted to them suggests. The fascination with such things would seem to be a part of a more general Greek concern with the weird and wonderful. In the Hellenistic period, Herodotos’ ethnographic curiosity reappears frequently as an emphasis on exotica, as the Greek world expanded into unfamiliar territories known previously primarily from legend. In this enterprise poisonous and other strange animals and customs featured heavily.

One of Kallimakhos’ own prose works was described as being “on marvels”, and the late third century court physician Andreas wrote *On snake-bites, On poisonous animals and On false beliefs*.96

Nikander falls squarely within this popular tradition, though given the availability of more expert works on the subject his attempt to versify it in epic hexameters may have seemed an improvement only to those outside the circle of elite knowledge.

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95 Nikander plagiarised the lost texts by the physician and zoologist Apollodoros of Alexandria, *Poisonous Animals and Poisonous Drugs*, written at the beginning of the third century.
96 Fr. 407 Pfieffer; Von Staden (1989) 473. Note Andreas’ non-medical range of interests.
That the literary recreation of intellectual disciplines was something of an ideal demonstration of knowledge is also implied by the importance apparently attached to literary forms by leading members of non-literary pursuits. Certainly all elite thinkers in the Hellenistic period wrote as a means of displaying their knowledge and achievements, and of publicly competing with others beyond the short-term forums of oral performance. Even mathematical and physical problems were occasionally formulated in literary terms. Archimedes sent his *Problema bovinum* to other mathematicians in Alexandria in the form of a riddle, which, it has been argued, owes a lot to the sympotic tradition.\(^\text{97}\)

The high status of literary activity may have driven the increasing tendency towards lexicography among Alexandrian physicians. This is already visible in the generation after Herophilos. His follower Bakkheios of Tanagra wrote what was probably the first Hippokratic lexicon in the late third century, with the assistance of lemmata provided by Eratosthenes’ successor as Librarian, Aristophanes of Byzantion.\(^\text{98}\)

We have then a picture in which medicine is part of a general complex of intellectual thought upon which the poet draws both for certain tropes and as a mode for the competitive display of general and recondite knowledge, including the most recent work on the subject. The physician is sometimes presented as another kind of elite intellectual, of the same kind and status as the poet’s explicit and implicit addressees and audience. In the second century CE the philosopher Calvisius Taurus and his well-educated companions knew the distinction between artery and vein better than a rural Attic doctor.\(^\text{99}\)

\(^{97}\) *Supplementum Hellenisticum* 201; Fraser I 406-9 and II 587 n. 91. For the *Problema bovinum* and the sympotic tradition see Cameron (1995) 81.


\(^{99}\) Aulus Gelius *Noctes Atticae* 18.10 c.f Aristotle *Política* 3.1282a.
While there were certainly incompetent and relatively low status astronomers and mathematicians, not to mention poets, in the Hellenistic world, physicians were unusual among intellectuals in that they were inevitably also τέχνιταλ, paid practitioners of a trained and not uncommon skill in demand by the general population. While the nature of τέχναι is fluid, disputed and extremely complex, I will concentrate here on the common claim among intellectuals that τέχναι and their practitioners were of lower status than certain other forms of knowledge, especially philosophy and unapplied mathematics. This was a particularly common claim among philosophers and mathematicians, being articulated among others by Plato and Aristotle. But it was influential enough that many exponents of the applied forms of knowledge can be seen reacting to it.

In the classical and Hellenistic periods mathematics, or more precisely geometry, was frequently perceived or advocated as the exemplum of certain knowledge to which philosophy aspired, and was therefore closely linked with it. Both philosophers and mathematicians often viewed mathematics as a kind of philosophy, but the philosophical interest tended to concentrate upon the strictly theoretical aspects of mathematics. This attitude is partly due to the reduced degree of certainty in most practical applications of mathematical and physical deductions. Arkhimedes famously asserted in his work Ad Eratostenem methodus that experimental, physical demonstrations were only a guide to the truth: proof was geometrical. Astronomy was viewed as a high status discipline not only because of its theological overtones but also because of the orderly, predictable motion of the heavenly bodies.

Thus epistemological status came to be associated primarily with geometric theory, a perception which medicine sometimes sought to co-optate. Plato's idealisation of a medicine whose deductions and prescriptions were cases of reliable knowledge became Galen's assertion that theoretical medicine was susceptible to a

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100 See e.g. Plato Philebus 58b, Aristotle Metaphysica 981b14-26.
101 245.15-17 Heiberg.
more geometrico analysis, and the title of his work *Quod optimus medicus sit quoque philosophus.* But the major problem faced by Galen was that medicine is evidently not as reliable as geometry: no physician is always right. His defence was that there were too many factors involved in individual cases to make theoretical knowledge reliably applicable.

While Galen’s position is extreme, various divisions between theoretical and practical aspects of medicine were commonplace, as they were in mathematics. Erasistratos himself is said to have divided medicine into practice and theory, and both he and Herophilos used philosophical arguments in their epistemologies. Similarly the Empiricists developed versions of sceptical arguments in order to justify their epistemological standpoint. While the movement of arguments and theories was far from one way between medicine and philosophy, the medical concentration on justification and demonstration reveals that intellectual status among the sciences was heavily dependent upon the degree to which they were viewed as philosophical. The term philosopher is used as an encomium by Arkhime des on Eratosthenes. Among those who accepted a role for theory, the model of theoretical knowledge remained that of theoretical mathematics.

On the other hand, the anatomists also used the principles of mathematical physics and models of devices dependent on these principles in several aspects of their theories and therapies (see pp. 171-2). This connects them to another set of mathematicians, the ‘mechanists.’

As Tybjerg (2000) 46 remarks: “boundaries between mechanics and mathematics were constantly redrawn.” Indeed even apparently strictly theoretical mathematicians like Arkhime des and Eratosthenes applied their work to the world around them, including famous discoveries on fluid dynamics, the circumference of

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102 See (Lloyd 1990) 71.
103 See 3.3.2.
104 For a different approach see Philo’s *Belopoeica*, a treatise which ignores most philosophical aspects of artillery construction and is aimed squarely at other experts in the field.
105 *Methodus* 245.1 Heiberg.
the earth, and Aristarkhos of Samos' hypothetical exploration of the relative sizes of the sun and earth and which circled the other. Of more direct relevance are Arkhimedes' mechanical defenses of Syrakuse against the Romans, a role similar to that of the experts on artillery patronised by Hellenistic kings including the Ptolemics.\textsuperscript{106}

Finally, mechanists were responsible for a class of things best described as objects of wonder, such as automatic theatres, self-moving devices, and water clocks. The aim of their inventors is difficult to identify. It seems to have been partly an exploration of physical and mathematical principles such as pneumatics and hydrostatics, partly the creation of exotica for entertainment and the excitation of awe, partly sometimes for practical needs and uses.\textsuperscript{107} The third century Alexandrian mechanist Ktesibios was perhaps the most famous and certainly one of the earliest exponents of this type of device, ambiguously situated between mathematics and use. Vitruvius remarks that a knowledge of philosophy is necessary in order to understand Ktesibios, though in general Vitruvius separates the philosophical-mathematical tradition from the mechanistic one.\textsuperscript{108} Mechanics itself is divided into a practical and a theoretical part in the \textit{Pappus Mathematical Collection} 8.1-2. So with the status of the mechanists itself subject to continuous revision, the status of elite, theoretically inclined but practising physicians who employed mechanistic principles as well as philosophical arguments, would itself have been relatively fluid within elite intellectual circles.

So far I have primarily considered the elite physician in a highly intellectual context. One factor in a more general perception of the medical profession was money. Like other \textit{περιτεχαίνοντες} physicians charged for their services, which in itself is a social black mark. The aristocrat does not require money and therefore does not ask for it.\textsuperscript{109}

\textsuperscript{106} Plutarch \textit{Marcellus} 14.3ff.  
\textsuperscript{107} See Tybjerg (2000).  
\textsuperscript{108} \textit{De architectura} 1.1.7.  
\textsuperscript{109} Aristotle \textit{Política} 1258a10-11; 1258a25-6.
Direct payment was more blatant an acknowledgement of a monetary aspect to medicine than were the gifts of royal patronage and subsidy for the poet, or the Athenian liturgies that defrayed many of the expenses of the dramatic poets, or the Hellenistic Museions, in which money was diffused through a cultic institution. It also implied a possible moral threat (see 4.5). This association of physicians with demands for money and sometimes greed is in one case even applied to the representation of the god of physicians. In Kallimakhos’ Epigram 54 a dedication to Asklepios announces its availability as a witness should the god and the sufferer end up in court over the god’s fee.

The payment of fees to physicians was not a theme confined to elite medicine. It is already a motif in Herodotos’ account of Demokedes, whose fee increased from one to two talents during the three years of public and court service in Aegina, Athens and Samos. By the Roman period at the latest castigation of largely mercenary physicians was commonplace and prevalent in all kinds of literature, as evidence from Pliny and Martial to funeral epigraphy makes clear. Often the greed of doctors is linked to their uselessness, as in Theokritos’ epigram, perhaps because the expense was resented less when the treatment appeared successful.

In addition to venality and incompetence, the unfavourable stereotype of the doctor, like that of the philosopher, includes the use of elaborate but meaningless terminology and jargon. This person can be clearly seen in the plays of Menander (ca. 343-292).

It may be worth remarking here that the comic poet had personal connections with the Ptolemaic court. According to Diogenes Laertios Menander was a friend of Soter’s high-ranking official Demetrios of Phaleron; while Pliny says that Menander was invited to Alexandria by the king.110 This emphasises again that although Menander’s work does not contain the deliberate and self-conscious erudition of the Alexandrian poets, he remained one of the intellectual elite and therefore by adoption or birth one of the social elite as well.

110 5.79; NH 7.111.
In spite of this background and associations, his treatment of philosophers and other intellectuals in his work is not flattering. In *Aspis* the doctor is ξενικόν and a φιλοσοφῶν, speaks incomprehensible jargon in a strong Doric accent, offers a very gloomy prognosis and no mention of any treatment either curative or palliative.\(^{111}\)

Nonetheless Terence’s *Hecyra*, adapted from a work of Menander, assumes that in cases of illness one calls a doctor.\(^{112}\) Of course, in cases of disease any kind of help or claim to authority would be tried. In those cases where the patient did recover after treatment, the physician could usually take the credit – particularly in cases requiring surgical intervention, where the link between the doctor’s action and the recovery of health was most immediate and uncontroversial.\(^{113}\) And a characteristic that represented a ‘bad’ physician in one context or literary form might suggest quite the opposite in another. For instance, satirists might ridicule the technical jargon of the doctor, but a specialist and exclusive vocabulary also suggests a specialist and expert kind of knowledge. Similarly the pain of much medical treatment was sometimes viewed as simple cruelty but in other contexts and authors as the exemplum of the theory of ‘no pain, no gain.’\(^{114}\)

The stereotypical characteristics shared by the philosopher and the physician in Menander’s comedies are themselves evidence that medicine in general was perceived to be connected with philosophy and theory. This in turn suggests that it was generally perceived as a relatively elite profession.

To sum up, the cultural tropes and stereotypes of medicine and physicians were used by Hellenistic authors as rapid reference points with which to adapt and reflect mythic and other subject matter. Moreover elite medicine formed part of the discourse of the intellectual and social elite and as such provided opportunities for the competitive and

\(^{111}\) Lines 339-42, 373-5, 423-2, 428-64.

\(^{112}\) This assumption contradicts the observation by the author of *De prisca medicina* 5 (CMG 1.1, 39-10-14) that some Greeks, like all barbarians, do not use doctors.

\(^{113}\) Celsus 7 prae. 1: “The effects of this treatment [surgery] are more obvious than any other kind.”

\(^{114}\) Medicine is good for you: Aeschylus *Agamennon* 848-50; Plato *Gorgias* 480c. Medicine is bad for you (and they charge you for it): Herakleitos fr. 58 Diels-Krans and see Aristophanes *Plutus* 407-8.
often recondite referencing of the poets. The conversion of medicine and other elite and specialist disciplines like astronomy into literary forms demonstrated and competitively privileged the poets’ encompassing mastery over non-literary, specialist intellectuals. Medicine was not, however, as high status a subject as astronomy, being both more controversial and less specialist.

Rather than recreating theoretical work Hellenistic authors and audiences were particularly attracted to the dangerous and ambiguous power of poisonous substances and their antidotes, a topic common to both folk and elite medicine. Medicine was of interest to the well-educated poet and his audience, but one which at either the most elite or the lowest social status remained both a practical and a philosophical exercise.

4.5: How to be a good doctor

4.3 above cited the case of the doctors of Antiokhos VI who were accused of deliberate murder after failing to cure the king in spite of their direct surgical intervention. Repercussions in the event of any apparent failure were of concern to physicians in general, as demonstrated by the advice on how to avoid them in the Hippocratic Corpus texts Prognosticon 1 (2.110-12 Littre) and De fracturis 36 (3.538ff Littré). Though these repercussions are not specified, they probably chiefly comprised loss of reputation, and perhaps in some instances court cases.

The evidence on Greek law, especially that relating to physicians and accusations of incompetence or malicious intent, is very fragmentary. It can be said that they were almost certainly the objects of suits for damages in the Athenian courts. The physician or φαρμακοποιής who sold a drug used for poisoning might also have been liable to public or private charges, as Greek law contains the concept of vicarious liability.115 Though there are no recorded cases in Greek law of physicians tried for intentional homicide Demosthenes mentions a φαρμακίς executed for providing φάρμακα.116 Aristotle’s remark that:117

116 Demosthenes In Aristogeiton 79.7.
117 Politica 1287a39ff.
when people suspect even the physicians of being in the confidence of their enemies and of trying to do away with them for gain, they prefer to treat themselves by the book [...].

suggests that suspicion of physicians was not uncommon. As for incompetence and negligence, evidence from Aristotle and Plato reveals that physicians were supposed to know more about drugs than non-physicians, particularly dangerous and powerful drugs like hellebore. The text of the *Iusiurandum* in the Hippocratic Corpus, which forsakes the use of the knife, suggests that accusations of incompetence could also be levelled at the surgeon, making internal operations something of a specialist occupation.

The need to guard against such accusations formed part of the physician’s approach to the question of payment. The Hippocratic text *Praeceptiones* contains several arguments for mentioning fees after the patient has recovered rather than in the initial consultation or during the period of treatment, and for calculating the charge in accordance with the patient’s wealth. Indeed the author advises free treatment in certain cases, such as in return for a favour or a stranger in straitened circumstances. The explicit arguments are a combination of the practical and the moral: a good reputation is of more worth than the actual money and it is better to reproach the (ungrateful) saved than to extort from the ill and frightened. This might even result, according to *Praeceptiones*, in direct benefit for oneself, as admiration for the sheer goodness of the unmercenary physician has in some cases acted as a cure.

Not explicit is the point that asking for money only after a recovery also served to guard against charges of negligence, as it eliminated any monetary motive for complacency.

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118 *Magna Moralia* 1199a; *Phaedrus* 268a-c.
119 1.5 (CMG 1.1, 4.19-20).
120 The value of a good reputation can be seen in the popularity of Kos as a provider of competent public physicians among the itinerant healers of the Hellenistic period: see Cohn-Haft (1956).
The physician needs not only to be seen to be unmercenary, but also as reliably competent. This ensured that in many cases the doctor did not carry out any treatment at all. Physicians who did attempt to treat difficult or hopeless cases were at risk of the kind of allegation faced by Antiokhos VI’s physicians. Plutarch’s account of the story of Alexander and Philip begins:

[…], none of the other physicians had the courage to administer remedies, but thinking that the danger was too great to be overcome by any remedy whatever, they were afraid of the charges which would be made against them by the Makedonians in consequence of their failure.

A similar fear can be detected behind the advice of the Hippocratic text Prognosticon 1: “you will be blameless if you learn and declare beforehand those who will die and those who will get better.”\textsuperscript{121} Epidemiae 2 transforms this self-protective tactic into an ethical rule: “Help or at any rate do no harm.” It was perhaps a cross-cultural phenomenon: the Edwin Smith papyrus (ca. 1550) specifies that certain conditions are “an ailment not to be treated.”

Thus the need to avoid unsuccessful treatments is closely related to the importance of prognosis in ancient medicine. The descriptive and prescriptive abilities of the physician provided a framework of stability and knowledge for the patient, in a manner similar to that of divination and prophecy. On the physician’s side, his authority and distinctiveness is increased by demonstrating knowledge of how to interpret signs that are invisible or incomprehensible to the layman, and by providing an explanation of why treatment is not being attempted rather than why treatment failed. That these prognoses usually erred on the side of caution – as in Menander’s Aspis above – is not surprising in view of the survival rate of one third recorded in the

\textsuperscript{121} Also De arte 3 (CMG 1.1, 10.15ff); De fracturis 36 (3.538 Littre).
Hippocratic *Epidemiae*. Moreover an unexpected recovery is good news while an unexpected fatality reflects rather more badly upon the physician.

So texts such as *Praeceptiones* and *Decorum* are not solely intended as etiquette manuals for an audience of physicians. They also, and perhaps primarily, serve to present the physician to prospective patients as one concerned about morality and not about money; and defend this template of the true practitioner of the art of medicine by contrasting him with the practitioners described by *Praeceptiones* 7 as “οὗτοι ἄνδροι ἔόντες [...] σκοπεόντες.”

The need to differentiate the proper, moral and effective physician from lesser breeds reveals both the variety of practice and behaviour among those calling themselves ‘physicians’ in classical Greece and how the general perception of the profession was in many respects largely unfavourable. Hence the attempts of several authors to prescribe and proscribe correct behaviour which did not include these elements, and to present this picture to the reading public as that of the real physicians. But proper behaviour was itself a contested area, as practices and styles of presentation among physicians and healers varied considerably. *Praeceptiones* 22 (*CMG* 1.1, 33.32ff) advises against luxurious headgear and elaborate perfume, a surprising injunction that suggests that some patients found exotic behaviour attractive – perhaps taking it to be the marker of special knowledge.

The purpose, date, and audience of the *Iusiurandum* remains controversial. But its unusual proscription of abortifacients, common in much of Greek medical practice, seems to indicate the self-demarcation of a relatively small group of physicians. There were however many areas of general concern. The *Iusiurandum* served to formally declare the good moral standards of the participants, to distinguish them

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122 *CMG* 1.1, 32.15, 22.
123 Or if these were contemporary marks of fashion among the wealthy, patients found them either marks of success or gratuitously ostentatious.
124 ll. 16-17.
from those who had not sworn such an oath, and to provide a modicum of trustworthiness by risking divine penalties for oath-breaking, but many of its precepts were articulated and claimed by other physicians.

The presentation in the Hippocratic texts and elsewhere, for example Herodotos, of the characteristics of the ‘good’ physician is closely related to the moral ideal of a ‘good’ person. Thus the Iusiurandum’s rejection of the procurement of poisons guards the physician against the potential of accusations of homicide discussed above.125 Similarly, the Iusiurandum’s rules about sexual conduct are paralleled by De medico.126 Such rules and the need to guarantee them were extremely necessary for physicians, who were often called upon to examine women in intimate circumstances.

This image of the good physician as unmercenary, competent, sexually continent and discreet was retained in the Hellenistic period, as Von Staden (1997) has demonstrated. This ideal is played off against the countervailing stereotype of the incompetent, incomprehensible and avaricious physician, and the mythical and historical horror stories of murderous kings and doctors.127 The individual physician negotiates his appearance, and the patient their perception of individual physicians, through distinctions in the tropes and characteristics of these often contradictory representations of physicians, medicine and medical substances.

4.6: Conclusion
I have argued in this chapter that the Greek physicians of the classical and Hellenistic periods were popularly perceived in terms of a set of interchangeable and often contradictory characteristics. Some of these were also common to folk and religious medicine, such as the ambiguous power of pharmaceutical knowledge. Some are

125 At ll. 15-16. See Edstein (1943) 7ff and n.20.
126 CMG 1.1, 20.18ff, c.f. Decorum (CMG 1.1, 25-9) and Praeceptiones (CMG 1.1, 30-5).
127 Such as that of the Methodist expert in pharmacology Eudemos, allegedly the lover of Livia and murderer of her husband Drusus in CE 23: Pliny NH 29.8.20; Tacitus Ann. 4.3. This story included virtually every dangerous medical trope: doctors, murder, power, sex and poison.
more specific to secular, ‘rational’ medicine, notably the monetary needs of a group of professional healers, or the jargon of a theoretical and new-fangled discipline. The fluid nature of medicine and the absence of professional boundaries meant a lack of standardisation as to practice or behaviour. These popular stereotypes and characteristics provided therefore the only templates against which individual physicians could be judged, present themselves, and be selected from.
CONCLUSION

The healing of illness and injury was a universal in the ancient world, but the forms it took were diversified and plural, both within and between cultures. This plurality of medical specialists, traditions and methods intersected with questions of identity and authority.

Medicine in Egyptian society was integrated into an understanding of the world in which the relationship of the individual with the gods was crucial to every aspect of life, and none more so than healing, with its associations with life and death. It was perhaps closely related to mummification, the restoration of health and life after death instead of before.

For Egyptians medicine reinforced the social forces of priestly and literate authority and provided one of the largest domains for the intercession and appeal to the beneficent gods against the forces of chaos. Competition was not about the nature of medicine but rather about the relative authority of those who practised it. This was bound up with access to the gods, expertise in certain subjects such as trauma surgery, and expert knowledge of the written word. The last was itself connected to the magical power of names and incantations. The secular and the religious did not exist as separate categories or even separate specialities in Egyptian medicine, and this provides strong evidence for more general attitudes towards religion and the ways in which Egyptians understood and attempted to manipulate the world.

In Egypt the distinctive naturalistic form of Greek medicine practised by most Greek physicians represented an exclusively Greek cultural identity, in that it explicitly rejected forms of explanation and expertise common to Egyptian medicine and other forms of Greek healing. In the countryside and towns, outside the three Greek
πόλεως, this identification was strengthened by fiscal links between Greek physicians and the Greek population.

This form of medicine also expressed intellectual competition and identity within a solely Hellenistic context. In Alexandria investigation into the natural world, including the domain of medicine, was a characteristic mode of intellectual discourse in the society of the court and its associated institutions, the Library and Museion. As such it was fostered by the Ptolemies as a means of competing with the rest of the Hellenistic world. A permissive and aggressively innovative approach to natural philosophy resulted that made it possible for Alexandrian physicians to extend trends in Greek intellectual thought to the point where these became polarised and exclusive modes in themselves. Thus medicine was an arena for the expression of intellectual identity within the Hellenistic social elite and also a means of demonstrating membership of that elite. The association of expert and arcane knowledge with authority is something Greek and Egyptian modes of healing had in common, but the knowledge involved was different in kind.

In Greek society medicine could also express not only an ethnic or cultural identity but also a moral one. Literary evidence in particular reveals the ways in which the images of the physician and the expert in drugs reflected and constructed Greek notions of good and bad for kings, intellectuals and individuals.

The pluralistic, undefined and fluid domains of folk and temple medicine allowed negotiations between cultural expectations on an individual basis.

In the temples competition for pilgrims was not between gods but between modes of appealing to them, modes which were culturally distinctive but not exclusively so. As Préaux (1956) 148 commented: “Dans le domaine de la mystique, on se libère des exigences de la langue.” Moreover the Greek assimilation of Egyptian ideas and procedures to conform to their own preferences and idealisations of Egyptian culture often reinvented Egypt in Hellenised terms, as with the (re)creation of Sarapis.
In both cultures the identification and reputation of folk healers depended on local and personal knowledge. This would have been the commonest form of healing in Greek Egypt, and this kind of healer the most numerous. It is difficult to identify the degree of cultural assimilation and exchange in these small and often unrecorded communities. But however great or small or varied this was, the recipients and local connections used helped to negotiate the individual’s ethnic and cultural identity within a local context.

To conclude, medicine in Greek Egypt consisted of a diverse plurality of forms and expectations. Some were characteristic of one culture, others shared common assumptions about the ways in which the world worked. The choices made by patients and physicians reveal the loci of power and the compatibility or otherwise of cultural and individual modes of thought and behaviour about the world, its dangers and its gods, expressed in terms of healing and disease.
BIBLIOGRAPHY

Bibliographical Note

Listed below under ‘Primary sources’ are those medical texts specifically cited in the thesis, in the editions which I used. Some also appear in the secondary bibliography, in cases where I have utilised not only the text but also the translation, commentary or discussion. A list of the cited Greek papyri is supplied, but hieroglyphic, hieratic or demotic texts have not been included as for these I had to rely on secondary sources only. For similar reasons Greek papyri which are not published in editions included by the Checklist of Editions of Greek and Latin Papryi, Ostraca and Tablets are also only in the secondary sources. References to these are supplied in the relevant footnotes. For the majority of other primary texts I employed the standard editions, usually either Oxford Classical Texts or Teubners. Where I used a different editions the details are given under ‘Primary sources.’

PRIMARY SOURCES

Medical texts

The principal collections are:


Corpus Medicorum Graecorum (Berlin/Leipzig, 1908-; Berlin, 1947-).

Corpus Medicorum Latinorum (Berlin/Leipzig, 1915-).


Apollonios of Kition. *In Hippocratis de articulis commentarius* ed. J. Kollesch and F. Kudlien 1965. *(CMG 11.1.1)*


*De antidotis* 2 ed. Kühn, 14.1-209.  
*De atra bile* ed. W. de Boer 1937. *(CMG 5.4.1.1, 71-93)*.  
*De placitis Hippocratis et Platonis* ed. Ph. De Lacy 1980-1984. *(CMG 5.4.1.2, 3 volumes)*.  
*De praecognitione* ed. V. Nutton 1979. *(CMG 5.8.1)*.  
*De causis contentivis* ed. M. Lyons et al. 1969. *(CMG Supplementum Orientale 2.52-73)*.  
*De dissectione musculorum et de consuetudine libri* ed. F.R. Dietz 1832, Leipzig. 8 volumes.  
*De optimo medico cognoscendo* ed. A.Z. Iskander 1988. *(CMG Supplementum Orientale 4)*.  
*De methodo medendi* ed. Kühn, 10.  
*De experientia medica* ed R. Walzer 1944, London: Oxford University Press.
De compositione medicamentorum per genera ed. Kühn, 13.362-1058.
De locis affectis ed. Kühn, 8.1-452.
In Hippocratis Epidemiarum 3 ed. E. Wenkebach 1934-6. (CMG 5.10.1 and 5.10.2.1, 2 volumes).
In Hippocratis librum 6 Epidemiarum commentarius ed. E. Wenkebach and F. Pfaff 1956. (CMG 5.10.2.2).
De causis procaracticis libellus ed. K. Bardong 1937. (CMG Supplementum 1).
De usu respirationis ed. Kühn, 4.470-511.
De venarum arteriame dissectione ed. Kühn, 2.779-830.
De usu partium ed. G. Helmreich 1968, Amsterdam. 2 volumes.
Quod optimus medicus sit quoque philosophus ed. I. Müller 1891. (Scripta Minora 1.103-129).
De libriis propriis ed. I. Müller 1891. (Scripta Minora 2.1-8).
In Hippocratis Aphorismos commentarius ed. Kühn, 17/2.345-18/1.195.


De articulis ed. Littré 1844, 4.78-327.

De capitis vulneribus ed. Littré 1841, 3.182-261.

De cord ed. Littré 1861, 9.80-93.


De diaeta ed. Littré 1849, 6.462-663.


De exsectione foetus ed. Littré 1853, 8.512-519.


De morbis 2 ed. Littré 1851, 7.8-115.


De mulierum affectibus ed. Littré 1853, 8.10-463.

De praelectione ed. Littré 1840, 2.220-191.

De prisca medicina ed. I.L. Heiberg 1927 (CMG 1.1, 36-55).

Epidemiae ed. Littré 1840, 2.598-717.

Epidemiae 2 ed. Littré.

Epidemiae 3 ed. Littré 1841, 3.24-149.

Epidemiae 4-7 ed. Littré 1846, 5.144-469.

Iusiurandum ed. I.L. Heiberg 1927 (CMG 1.1, 4-6).

Praeceptiones ed. I.L. Heiberg 1927 (CMG 1.1, 30-35).


**Egyptian medical papyri**


- *Textes du papyrus de Kahun et autres textes gynécologiques*: 437-454
- *Papyrus médical de Berlin*: 409-436.
- *Papyrus Chester Beatty no. 6*: 455-460.
- *Papyrus médical de Londres*: 483-492.
- *Papyrus Brooklyn no. 47.218.48 et 85*: 523-546.


**Other cited papyri**

Non-medical Egyptian papyri have been cited according to the secondary sources, see bibliography. The papyri re-edited in Thompson and Clarysse (forthcoming) and cited here according to that edition are as follows:

- **PC01**: *P. Lille* 1.10 plus new fragments.
- **PC02**: *P. Sorb inv. 211 + 212 recto + P. Lille dem.* 3.99.
- **PC03**: *P. Sorb. inv. 211 + 212 verso.*
- **PC04**: *P. Lille dem.* 3.101.


*P. Amh.* 35.  
*CPR.* 13.29 A.  
*P.Col.* 3.54.  
*PCZ.* 1.59034  
*PCZ.* 1.59036  
*PCZ.* 3.59426  
*PGM* 20  
*P. Hal.* 1  
*P. Hamb.* 2.171  
*P. Hib.* 1.102  
*P. Hib.* 1.103  
*P. Hib.* 1.165  
*P-Hib.* 2.268  
*P. Heid.* 3.226  
*P. Mich.* 1.55  
*P. Zen. Pestman* 42.

*P. Oxy.* 11.1381  
*P. Petrie* 1.30  
*P. Petrie* 2.13 (1)  
*P. Petrie* 3.93  
*PSI.* 4.371  
*PSI.* 4.413  
*SB.* 1.5216  
*SB.* 14.11659  
*P. Sorb.* inv. 331  
*P. Tebt.* 1.88  
*P. Tebt.* 1.112  
*P. Tebt.* 2.291  
*P. Tebt.* 3.1746  
*P. Tebt.* 3.2.1036  
*P. Tebt.* 3.2.1037

*P. Tor Choachiti* 12  
*UPZ.* 1  
*UPZ.* 1.7  
*UPZ.* 1.15  
*UPZ.* 1.16  
*UPZ.* 20  
*UPZ.* 52  
*UPZ.* 1.53  
*UPZ.* 1.77  
*UPZ.* 1.78  
*UPZ.* 1.79  
*UPZ.* 1.148  
*UPZ.* 2.153  
*UPZ.* 2.154  
*UPZ.* 2.155

Other works cited

Leiden: E.J. Brill. 2 volumes.

Cambridge University Press.


SECONDARY BIBLIOGRAPHY


1951. Les inscriptions grecques du temple de Hatshepsout Deir El-Bahari, Cairo: IFAO.

1952. Memnonia: Recherches de papyrologie et d’épigraphie grecques sur la nécropole de la Thebes d’Égypte aux époques hellénistique et romaine, Cairo: IFAO.


Edgar: 1903. Catalogue Général des Antiquités Égyptiennes du Musée du Caire: Greek Sculpture, Cairo: IFAO.


Fedak, J. 1990. Monumental Tombs of the Hellenistic Age: a study of selected tombs from the pre-classical to the early imperial era, Toronto: University of Toronto Press.


1977. ‘Archiatri and the medical profession’ in Nutton 1988: chapter V.


1985. ‘Murders and miracles: lay attitudes to medicine in classical antiquity’ in Nutton 1988: chapter VIII.


Posener, G. 1936. La première domination perse en Egypte: recueil d’inscriptions hiéroglyphiques, Cairo: IFAO.


Quirke, S. 1990. The Administration of Egypt in the Late Middle Kingdom: the hieratic documents, New Malden, Surrey: SIA Publishing.


West, S. 1973. ‘Cultural Interchange over a Water-Clock’, CA 23 no. 1: 61-64.