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## The *Techne* of Nutrition in Ancient Greek Philosophy

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**Abstract:** The preparation of food and nutrition is a pervasive *techne* in the classical Greek world. Indeed, food technology may be a defining characteristic of humanity (Levi-Strauss, 1964). We begin with a glimpse of a tension in the use of the word *techne* in relation to the preparation of food in Plato's *Gorgias* 462d-e. Turning to the Presocratics, we discern three distinct perspectives on food, those of Empedocles, Anaxagoras, and the treatise *Regimen* (Περὶ Διαιτήσεως).

In *Regimen*, we find an anticipation of the distinctions made by Plato in the *Gorgias* passage, and trace some of the implications in what we may call the “food technology” of this treatise that manages to be both philosophical and technically informative.

**Keywords:** Nutrition, Hippocrates, *On Regimen*, Plato *Gorgias*, *Opsopia*, Empedocles.

## Introduction

*Gorgias* 462d:

Σωκράτης: ἐροῦ νῦν με, ὄψοποιά ἦτις μοι δοκεῖ τέχνη εἶναι.

Πῶλος: ἐρωτῶ δὴ, τίς τέχνη ὄψοποιά;

Σωκράτης: οὐδεμία, ὦ Πῶλε.

Πῶλος: ἀλλὰ τί; φάθι.

Σωκράτης: φημί δὴ, ἐμπειρία τις.

Πῶλος: τίς; φάθι.

Σωκράτης: φημί δὴ, χάριτος καὶ ἡδονῆς [462ε] ἀπεργασίας, ὦ Πῶλε.

Socrates: “Ask me now what *techne* I think *opsopia* to be.”

Polus: “Okay, what *techne* is *opsopia*?”

Socrates: “It isn’t, Polus.”

Polus: “But then what so you say it is?”

Socrates: “I say it is a particular *empeiria*.”

Polus: “Which, tell me?”

Socrates: “I say that it is the one that produces gratification (*charis*) and pleasure, Polus.”

As the discussion continues, Socrates makes clear that he believes that the proper *techne* of nutrition belongs to medicine, *iatrike*.

What is “*opsopia*” in this context? Translators are not consistent – Donald Zeyl (1997), in his translation in the Cooper Plato volume, says “pastry baking,” Plochmann (1988, p. 73) says “catering,” and Plastira-Valkanou (1998) says “fine cuisine.” LSJ’s examples would

include all of those, perhaps, with an emphasis on the cooked food that accompanies bread and wine in a standard Greek meal.<sup>1</sup>

At *Republic* 2.372ff: Socrates describes the original *polis* with the inhabitants eating bread baked of wheat or barley, and drinking wine. Glaucon breaks in: “What, no *opson*?”

To which Socrates replies by adding salt, olives, cheese, boiled roots, and country vegetables for *opsa*; and for *tragemata* (dessert), figs, chickpeas, and beans, with myrtle and acorns. Glaucon objects that this is a “city of pigs” and says that they should have couches and tables, and “the sort of *opsa* and *tragemata* that we have.” Socrates replies (I summarize): ‘Oh, you want the luxurious and fevered city, not the healthy one I was describing.’ So, he goes all out, describing the luxuries of the upper class of Athens of his day. In particular the fevered city adds meat, in particular, to the diet previously described. That’s a little odd, given our knowledge of Athenian diet and preferences at least – Athenians tended to eat fish with their bread, rather than mammalian meat, which was generally available only after religious sacrifices (Davidson, 1997; Dalby, 2003, p. 144, 213).

So, what is “*empeiria*” at *Gorgias* 462, so tendentiously contrasted with *techne*? It seems pretty clear from the discussion with Polus in the *Gorgias*, as well as from a comparable passage in the *Laws*, that Plato supposes that an *empeiria* is a practice derived by trial and error (ἄτεχνός ἐστὶν τις ἐμπειρία καὶ τριβή, *Laws* 11.938a), while a *techne*, presumably, is based on reliable first principles, aimed at the production of health, rather than the production of gratification and pleasure.<sup>2</sup> In *Metaphysics* 1.1 980b Aristotle famously tells us that *empeiria* is derived from sensory experience and memory, and some animals have a small share in *empeiria*, but

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<sup>1</sup> Zeyl’s “pastry-baking” is the least accurate translation of these three, since pastries are not accompaniments of bread in a Greek meal.

<sup>2</sup> It is not my goal in this essay to explore in detail Plato’s beliefs about the technology of food preparation. For that, see Plastira-Valkanoy, 1998; Skiadas *et al.*, 2001; Franklin, 2005.

*techne* and reasoning belong to human beings. In the *Nicomachean Ethics* 6.4 1140a20, Aristotle defines *techne* thus: “*techne* is a disposition to apply true reasoning to production” (my interpretive translation of ἡ μὲν οὖν τέχνη, ὥσπερ εἴρεται, ἕξις τις μετὰ λόγου ἀληθοῦς ποιητική ἐστίν).

Still, Polus – and doubtless the average Athenian – would assume that (competent) food preparation always counts as a *techne*, even if one may make distinctions in terms of the level of sophistication. What sort of sophistication might be applied? Of the various possibilities, we focus on philosophical – what may we discern of the views of the earliest Greek philosophers on the subject of food? Of the possible candidates, I turn to Empedocles, Anaxagoras, and the author of *Regimen*.

## **Food in Three Early Greek Thinkers: Empedocles, Anaxagoras, *Regimen* 1**

Empedocles is best known for telling us what we should NOT eat, and why. Anaxagoras places nutrition at the very center of his ontology, although that aspect of his philosophy does not always get the attention it deserves. *Regimen (On Regimen)*, a Hippocratic Text probably dating from not long after Empedocles and Anaxagoras,<sup>3</sup> aims to provide useful dietetic advice, based on what the author takes to be the best theoretical foundation available in his time.

These three represent three strands in the philosophical technology of food that continue to be discerned in studies of nutrition even today:

- a) The application of premises taken from outside the realm of nutrition to provide non-nutritional guides to a person’s consumption (or non-consumption) of various foods.

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<sup>3</sup> Empedocles c. 495-435 BCE, Anaxagoras c. 500-428 BCE, dates from Richard Parry (2012) and Patricia Curd (2015), respectively. “Hippocrates” *Regimen*: dated variously 420-350 BCE. See Bartos, 2015, p. 4.

- b) The use of insights gained from the study of nutrition in areas well beyond nutrition itself.
- c) The application of theory (scientifically supported or not) to the improvement of nutrition.

## Empedocles

The tale is quickly told:

(f142) Will you not cease from ill-sounding  
bloodshed? Do you not see

How you are devouring each other with heedless  
mind?

(f143) The father lifting up his own son in a changed  
form

Slaughters him with a prayer in his great folly, and  
they are lost

As they sacrifice the suppliant. But he, not heedful of  
their rebukes,

Having made slaughter has prepared in his halls a  
ghastly banquet.

Just so the son laying hold of the father and the  
children of the mother

After depriving them of life devour their own kindred  
flesh.<sup>4</sup>

(f144) having drawn off life with bronze.

(skipping 145a)

(f145b) Alas! That the pitiless day did not destroy me  
Before I devised cruel deeds for the sake of food with  
my lips.

(f146) Completely abstain from bay leaves.

(f147) Wretches, utter wretches, keep your hands off  
beans!<sup>5</sup>

Empedocles, undoubtedly influenced by the Pythagorean doctrine of the transmigration of souls, supposes that people who have died are reborn in another life form: dramatically, into animals who may serve as a sacrificial feast. Meat-eaters consequently would

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<sup>4</sup> C. Osborne (2007, Ch. 3) stresses the filial nature of the cannibalism that Empedocles decries.

<sup>5</sup> Quoted from Graham, 2010.

be murderers and cannibals, essentially;<sup>6</sup> Empedocles believes that he continues to atone for a past transgression, which we supposed involved eating meat (from a sacrifice) and as a reformed sinner, he preaches the gospel of vegetarian diet to those who will listen. Even some vegetables are taboo: he shares with the Pythagoreans the ban on beans,<sup>7</sup> the ban on bay leaves seems to be supported by f152: “Among beasts they become mountain-dwelling lions, / sleeping on the ground, among fair-haired trees the bay.” So presumably some previously human souls take up residence in the laurel tree.<sup>8, 9</sup>

Some later philosophers chose a vegetarian life-style, often appealing to arguments related to those of Empedocles, though more often calling it a Pythagorean way of life. Plato is sometimes credited as a vegetarian, partly because his philosophy shows many Pythagorean influences (“After these thinkers [Pythagoreans] came the philosophy of Plato, which in most respects followed these thinkers”; Arist. *Metaph.* 1.6 987a29) and partly on the strength of *Republic* 2, already briefly noted, where Socrates describes a vegetarian community that lives in peace and tranquility (372c-d), disrupted by Glaucon’s demand for what Socrates calls the “luxurious” city that is forced to go to war to enlarge its territory to feed meat-producing animals.<sup>10</sup>

The ancient arguments for vegetarianism were perhaps best summed up by Porphyry in *On Abstinence from Killing Animals*. Porphyry, well aware of the Orphic-Pythagorean transmigration arguments, tends rather to emphasize empirically supportable signs

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<sup>6</sup> The evidence concerning early Pythagorean abstinence from meat is conflicting and confusing. See Huffman, 2014, section 4.3.

<sup>7</sup> Discussed, for Pythagoras and early Pythagoreans, by Huffman, 2014, section 4.3.

<sup>8</sup> Daphne was a Naiad pursued by Apollo; to escape his advances, she got Mother Earth to change her into a laurel tree; Apollo, still in love with her, made her leaves ever green. Our oldest source for this story is Parthenius (1<sup>st</sup> BCE), but he refers to the earlier poet Diodorus of Elaia and the 3<sup>rd</sup> BCE historian Phylarchus, so Empedocles may be thinking of this story. Cf. [theoi.com](http://theoi.com) at “Daphne.”

<sup>9</sup> See, e.g., Dombrowski, 1984, Ch. 3; Osborne, 2007; Spencer, 2016, Ch. 2.

<sup>10</sup> Dombrowski has a good deal to say about this.

of kinship between animals and human beings – evidence for rational thought, for animal languages, and so on. He finds that Theophrastus, Aristotle’s partner in the Lyceum, was a vegetarian, on the ground of kinship between human beings and animals. Plutarch (*De esu carnium*) suggests that meat-eating is bad for human health; he also refers to the Pythagorean arguments, not as conclusive, but suggestive for a vegetarian diet (2 998c-d).<sup>11</sup>

I take Empedocles’ strictures on the consumption of meat, beans, and bay leaves to be dictated by his religious or philosophical theories; later ancient vegetarians did not necessarily agree specifically with the notion of transmigration of souls, but they did tend to believe that there is SOME inter-relationship between animals and people, demonstrated by behavior that we take to be rational, and reason enough to abstain from killing animals, except in self-defense.

For the sake of some later discussion, I note here that Empedocles’ theory of matter seems fairly straightforward – there are four elements, earth, water, air, and fire, which look to moderns like our four states of matter – solid, liquid, gas, and energy – except that Empedocles (unlike Aristotle) denies that these elements or “roots” change into each other. Our bodies are made up of the four elements, in various proportions: bones, for example (B96) are two parts water, four parts fire, two parts earth.<sup>12</sup>

## Anaxagoras

The story about Anaxagoras is a bit more complex. Some of the ancient testimonia are clearest about the point that I want to make:

He said all things are mixed with each other, and as they increase they are segregated. For example, in the same seed there are hair, nails, veins, arteries, sinews,

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<sup>11</sup> See also Mauro, 2017, for these analyses.

<sup>12</sup> According to a University of Cambridge “Learning Package” (online), bone is 10% to 20% water, 60-70% bone mineral, plus collagen; a large proportion is calcium and phosphate (plus oxygen and hydrogen), with a complex structure including a wide range of other elements.

and bones, and although they happen to be invisible because of their microscopic size, as they grow they gradually become distinct. **For how would hair come from not-hair and flesh from not-flesh?** (f13)<sup>13</sup>

Aetius' version of the same story goes like this:

We partake of simple food of one kind, bread and water, and from this are nourished air, veins, arteries, flesh, sinews, bones, and the other parts. So, since these things happen, it must be granted that in the food consumed are all these entities, and from these entities all things grow. In that food are parts productive of blood, sinews, bones and the rest, which parts are grasped by reason.<sup>14</sup>

And Lucretius (1.835-842):

clearly he means bones arisen from little tiny  
Bones, and from little tiny pieces of flesh  
Flesh comes to be, and blood is crested  
From the confluence of many drops of blood,  
And he thinks from little particles of gold  
Gold can be composed, and earth is compounded of  
pieces of earth,  
Fire from fire, water from waters;  
He fancies and thinks other things arise in a similar  
way.<sup>15</sup>

It seems that Anaxagoras noted that people (anyway the people around him) lived on a diet consisting mainly of bread made of grain such as barley or some variety of wheat, drank water, and breathed air; the bread, water, and air must contain everything that becomes the body of the person – flesh, bone, sinew, and blood, so there are little bits of all these bodily materials in those pre-bodily materials. But grain grows from earth, water, and air, plus the energy of the sun, so the bodily materials must already be present in what appears to be simply earth, water, and air. From that he concludes, “In everything

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<sup>13</sup> Scholium on Gregory of Nazianzus 36.910, Graham, 2010, p. 289.

<sup>14</sup> Aetius p 1.3.5, S1.10.12, Graham, 2010, p. 289.

<sup>15</sup> Graham, 2010, p. 287.



there is a portion of everything except mind, and in some things mind too is present” (f14).<sup>16</sup> Furthermore, “Of the small there is not a smallest, but always a smaller (for what is cannot not be). But even of the large there is a larger, and it is equal in quantity to the small. And in relation to itself each thing is both large and small” (B3).

Hence the complexity. Aetius says that the bodily parts present in food are “*onta*,” Lucretius (true to his atomism) sees the bodily parts as something very like atoms. But if there is no smallest, and everything is in everything, flesh, bone, etc. cannot be *particles*, they cannot be atoms. Although Anaxagoras says (as quoted by Theophrastus), “each one is and was most manifestly those things of which it has the most” (f15), it is hard to see how he could give a quantitative analysis of a bodily part like the one that Empedocles gives.

Marmodoro (2017) argues that Anaxagoras has a “gunk” mereology, using a term made popular by David Lewis (1991). “Gunk” is stuff that has no atomic parts. “Gunk” applies to any whole whose parts all have further proper parts.<sup>17</sup> Marmodoro argues that Anaxagoras anticipates this part of David Lewis’ theory; I urge those who are interested to look at her book.

One consequence of Anaxagoras’s theory of food, not often noted by commentators, is that in a practical sense it tends directly against Pythagorean – Empedoclean vegetarianism. If our bodily parts are nourished by ingested items that are similar to them, one may argue that a carnivorous diet would be the most nutritious, since the preponderance of the material ingested would be most similar to the parts the food is meant to feed.

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<sup>16</sup> Curd, 2007. Curd works out the implications of Anaxagoras’ theory in Essay 2: “The Original Mix and the Seeds”, p. 153 ff. A recent re-examination of the evidence, from a strongly metaphysical perspective: Marmodoro, 2017.

<sup>17</sup> One might argue that Aristotle’s theory of matter is also “gunky” in that there are no atomic parts.

## Περὶ Διαιτήης (*Regimen, On Diet*):

Bartos (2015)<sup>18</sup> argues persuasively that this treatise was written primarily as a manual for well-educated lay persons, not specifically aimed at professional physicians or trainer (p. 49 ff.). The goal of the treatise is to provide a guide for appropriate nutrition and exercise, relative to the season and other circumstances, to ensure that the reader who follows his recommendations will be as healthy as possible.

I say that someone who is going to write about human diet must first learn and know about the whole nature of man; to know of what he is first constituted, to learn from what parts he is mixed; for if he does not know the original construction, he will be unable to know what arises from them. (1.2)

Because he is writing for the ordinary (well-off) person, the author does NOT feel that he must carefully construct a tightly argued philosophical treatise. This is not his goal.<sup>19</sup> He does, however, put forward a theory of fundamental matter, one that is not canvassed by Aristotle. As is well-known, Aristotle thought that earlier theories of matter were either monistic: Thales: Water, Anaximenes: Air; Heraclitus: Fire (and no one notable supporting a monistic “earth” theory), or pluralistic, with Empedocles’ four elements (earth, air, fire, and water), or Anaxagoras’ indefinitely many elements, or Democritus’ indefinitely many atoms in indefinitely many shapes, somehow exhausting the possibilities. But the author of *Regimen* has a TWO element theory: Fire and Water. “Together these are

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<sup>18</sup> In this section, I rely on Bartos (2015), the most thorough recent study of this work.

<sup>19</sup> Historians of philosophy might conclude that the treatise is “a silly farrago of ill-digested Presocratic opinions” (Kirk-Raven-Schofield, 1983, p. 389, n. 4). Bartos (2015), in contrast, says (p. 9) that “the author develops a remarkable philosophical framework for his dietetic account, reflects upon and makes use of some of the most important philosophical ideas of the fifth century [...], introduces a sophisticated elemental theory [...] and [...] presents the most profoundly elaborated account of the body-soul relationship available in the extant pre-Platonic literature.”

sufficient for one another and for everything else, but each by itself suffices neither for itself nor for anything else” (1.3). Why these two? “Fire can move all things always; water nourishes all things always.” Furthermore, “To fire belong the hot and dry, to water the cold and moist.” The author goes on to say that these elements are indestructible, so everything that is said to exist is simply a temporary combination of the elements – an Empedoclean way of looking at things.

The human soul is itself a blend of fire and water (1.7), which seems borrowed from Heraclitus – “For it is death to souls to become water, and death to water to become earth. But from earth comes water, and from water, soul” (f.64: and “Dry soul is wisest and best,” f.65). *Regimen* emphasizes a proportionality between fire and water echoing Pythagorean speculations: “if they achieve correct attunement, which has three harmonic proportions (the fourth, the fifth, and the octave), they live and grow.” The author follows that with a passage of rhetorical flourish:

All things were arranged in the body, in a fashion conformable to itself, by fire, a copy of the whole, the small after the manner of the great, and the great after the manner of the small. The belly is made the greatest, a steward for dry water and moist, to give to all to take from all, the power of the sea, nurse of creatures suited to it, destroyers of those not suited. And around it a concretion of cold water and moist, a passage for cold breath and warm, a copy of the earth, which alters all things that fall into it. Consuming and increasing, it made a dispersion of fine water and ethereal fire, the invisible and the visible, a secretion from the compacted substance, in which things are carried and come to light, each according to its allotted portion. And in this fire made for itself three groups of circuits, within and without each bounded by the other: those toward the hollows of the moist, the power of the moon; those towards the outer circumference, towards the solid enclosure, the power of the stars; the middle circuits, bounded both within and without. The hottest and strongest fire, which controls all things, ordering all things according to nature, imperceptible to sight or touch, wherein are soul, mind, thoughts, growth, motion, decrease, mutation, sleep, waking. This

governs all things always, both here and there, and is never at rest. (1.10)

The author turns to a discussion of embryological development in comparison with various arts – blacksmith, cloth-makers, shoe-makers, carpenters, builders, cooks, weavers, musicians, jewelers, sculptors, potters, writers, and of course physical trainers. The comment about cooks is worth quoting:

Cooks prepare for people dishes of ingredients that disagree while agreeing, mixing together things of all sorts, from things that are the same, things that are not the same, to be food and drink for a person. If the cook made all alike there is no pleasure in them; and it would not be right either if he were to compound all things in one dish. The notes struck while playing music are some high, some low. The tongue copies music in distinguishing, of the things that touch it, the sweet and the acid, the discordant from the concordant. (1.18)

In Ch. 32, he returns to the theme of the water and fire: “The finest water and the rarest fire, on being blended together in the human body, produce the most healthy condition.” The remainder of Book 1 explores the consequences of different qualities of water and fire for the health of the individual, and how (in general), those might be managed. For example (ch. 35), a person whose make-up includes more fire should drink more water (of course), eat barley bread rather than wheat bread, fish rather than meat – doubtless because wheat and red meat are more “fiery” than their alternatives. In more extreme cases of a fiery temperament, boiled vegetables should predominate in their diet, sardines, and drink only water “otherwise the next best thing is a soft white wine.”

In this section we have taken a very rapid look at three pre-Platonic<sup>20</sup> contacts between philosophical argument and nutrition. If we take transmigration of the soul as a philosophical theory, it is one that has the practical consequence of giving persuasive reasons for

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<sup>20</sup> Bartos argues persuasively that *Regimen* is pre-Platonic.

abstaining from animal flesh in one's diet. Or, if we try to understand the process of nutrition, of ingesting typical foodstuffs and realizing that those foods become part of our body, we may conclude that the appropriate bodily substances were already present in our foods, leading to a theory of the nature of matter itself. But for an attempt to apply "true reasoning to food preparation," to transcend the purely empirical and ascend to a theoretical appreciation of nutrition, among early Greek philosopher we must turn to *Regimen*. The first book outlines the philosophical theory that is to be applied; the second book goes into the details. In the following section, I give examples of how the theory is applied to the selection of various foodstuffs, and to their preparation.

## **A Presocratic Diet: *Regimen* 2**

The Hippocratic text *Regimen* is clearly "Presocratic" in the sense that it belongs to the conceptual world populated by Heraclitus, Empedocles, Anaxagoras, and Diogenes of Apollonia. It is, to be sure, a book about "physical training," including diet, but it is explicitly founded on a "Presocratic" worldview. In the first book a theory of elements centering on fire and water is developed and defended; in the second book recommendations concerning food are presented. In this section I focus on the second book, outlining the range of dietary choices presented, and the sorts of justifications of recommendations offered by the author. The discussion is elaborated in the context of some of the literature on ancient Greek diet, with nods toward more general dietary theory.

What did people eat in the pre-Platonic period? Perhaps this is not directly a philosophical question, but not without interest to those who study the intellectual world of Greece in the fifth century BCE.<sup>21</sup>

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<sup>21</sup> There have of course been studies of ancient diet for many years, usually spanning several centuries and several regions of the Mediterranean – best known may be James Davidson (1997) or Peter Garnsey (1999). Most useful for this paper, however, is Andrew Dalby (2003). Davidson is focused on Athens, and the Athenian passion for fish; Garnsey is useful for a general perspective the social

Fortunately *Regimen* us in some detail many of the possible menu items around 400 BCE, along with comments on the possible dietary virtues and vices of various items. Περὶ Διαίτης book 1 argues that the basic elements of all things, including the human frame, are fire and water; fire is hot and dry, water is cold and wet. Everything needs to be composed of opposites – “Cooks prepare food and drink for people that disagree agreeing, mixing together all sorts of things from the same and not the same. If they made everything the same there would be no pleasure, nor would it be right to mix everything together in the same dish” (1.18). The author goes on to tell a story about sexual generation and how different sorts of personalities are generated, essentially by different diets; just for a same, a “fiery” personality needs a regimen “more inclined to water.” “He must eat *maza* (barley loaf) rather than *artos* (wheat bread), fish rather than meat” (1.35). An even more “fiery” personality should eat “unkneaded *maza*, boiled vegetables (except those that purge), small salt fish,<sup>22</sup> and it’s best to drink water, if possible; if not, the next best thing is a soft white wine” (1.35).

*Regimen* 2.39 and following concentrate on the powers (*dynameis*) of various foods and drinks “both by nature and art.” “Since it is impossible (the powers of various foods and drinks) in general, I will show what power each one has in particular.” Thus, the author outlines the “powers” of a great many foods and drinks one by one. In a longer version of this paper I have identified, to the extent possible, the particular species of animal and vegetable included, and also asked why those species are included, and what is excluded and why.<sup>23</sup> Many of the items are familiar foods, some are unfamiliar foods, and some are what we would call “herbal remedies.” It is noteworthy that the author makes almost no significant distinctions between nutritional and pharmaceutical items, apart from noting some of their effects according to the general

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aspect of food, but Dalby has the sorts of details that match what I am trying to do in this paper.

<sup>22</sup> Jones (1931) writes “sardines” but the species is not specified.

<sup>23</sup> Bartos (2015) does not do this.

schema. For present purposes, I summarize my findings, emphasizing aspects that seem to me to be “technical” from the author’s perspective.

“Barley<sup>24</sup> is naturally cold, moist, and drying.” Barley was the prime staple source of calories, typically made into “*maza*”, standardly translated into “barley cake.”<sup>25</sup> If *maza* is made with the bran it is “less nourishing but passes more easily.” The author goes on to discuss “*cyceon*” (*kykeon*) made with water, wine, honey, milk of sheep (“astringent”), goat (“laxative”), cow, mare, or ass.<sup>26</sup> The *cyceon* was a drink, or perhaps more like a soup.

“Wheat (πυρός) is stronger and more nourishing than barley” (2.42). Whole-wheat (συγκομιστός) is more “laxative,” white (καθαρός) is more nourishing but less laxative. Bread could be baked in an oven, on the hearth, on a spit, on an earthen pan, or under the ashes. The best wheat for bread is *Triticum aestivum*, which does not grow as well as barley in most of the classic Hellenic regions, and so tended to be an internationally traded commodity. *Regimen* notes related alternatives – *chondros*, or emmer meal (*Triticum turgidum dicoccum*),<sup>27</sup> *semidalis*, durum flour (*T. turgidum durum*),<sup>28</sup> τίφη

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<sup>24</sup> 2.40. *Hordeum vulgare* sp. *Distichum* or sp. *Vulgare*. Cf. Theophr. *HP* 8.4.1-2. Wild barley is mentioned 2.54. Barley is discussed again at 3.58.

<sup>25</sup> Griffith (2007) argues that the word “*maza*” is derived directly from “*matzoh*.” In any case *maza* is a flat unleavened (barley) bread. See also Kremzi, 1997. Kremzi also has an online blog including Greek recipes for barley bread.

<sup>26</sup> 2.41. See Kouvroulaki, 2012. Wikipedia at “*kykeon*” summarizes the place of this drink in classical society. There’s a theory that ergot or another parasite on barley could lead to the psychological state described in association with the Eleusinian Mysteries, where a special *kykeon* was drunk at the conclusion of the affair. Cf. Delatte, 1955; Wasson *et al.*, 1978.

<sup>27</sup> Dalby, 2003, p. 131-132. Dalby notes that *chondros* is sometimes used of barley meal. Jones (1931) has “groats”, whole hulled grain of any of the grain species.

<sup>28</sup> What we call semolina, low gluten high protein flour, not very good for baking bread, but great for pasta. Dalby, 2003, p. 349. Jones has “*similago*”, Latin for high quality wheat flour. Wheat: see Dalby, 2003, p. 348 ff. Club wheat, durum wheat, and bread wheat; see also eikorn, emmer, spelt. *Triticum aestivum compactum*: club wheat; *t. turgidum durum*: this is normally equivalent to πυρός. *Setanias pyros*: club wheat; *semidalites pyros*: durum; silignion: bread wheat. The author returns to wheat in 3.58.

(2.43), identified as einkorn<sup>29</sup> (*T. monococcum*), and ζειά, identified as *T. spelta*.<sup>30</sup> Dalby identifies *zeia* as emmer, noting that it could be any hulled wheat, so the contrast with *chondros* would be that *chondros* is a grain meal, *zeia* the whole grain. Finally, in this category, oats (βρόμος), are noted as “moist and cool,” though generally not to the taste of the Greeks, but fed to their animals.<sup>31</sup> Cereals not mentioned include rye, not distinguished in early classical texts (Dalby, 2003, p. 286), though it might have grown along with barley; rice was apparently introduced in the time of Alexander, about 150 years after our text (Dalby, 2003, p. 281); and obviously maize, a New World cereal, was unknown in Greece until the modern era.

Fresh bread is drier than old (2.44) “because they are nearer the fire with which they were prepared; as they grow stale the heat exhales and the cold succeeds.”

Fava beans (κύαμοι, *Vicia faba*) are “astringent and flatulent nourishment.”<sup>32</sup> Peas (πίσσοι, *Pisum sativum*), *ochroi*, identified by Jones as a chickpea,<sup>33</sup> *dolichoi*, identified by Dalby (2003, p. 192) as the lablab bean, *Dolichos lablab*, and white *erebinthoi*, the actual chickpea,<sup>34</sup> *Cicer arietinum*. These are said to be less gassy and more easily evacuated than *kyamoi*.

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<sup>29</sup> Dalby, 2003, p. 130; Jones, 1931, *ad loc.*

<sup>30</sup> Jones, 1931, *ad loc.* Dalby (2003, p. 130) rejects the identification with spelt. See also Kouvroulaki, 2010.

<sup>31</sup> Dalby, 2003, p. 236: *Avena sativus*.

<sup>32</sup> 2.45. Dalby (2003, p. 49) identification. Pythagorean beans – some have speculated that Pythagoras may have suffered from favism. See, e.g., Dye, 1999. Incidentally, several of the beans much in use today have New World origins and were unknown to the ancients: lima beans (*Phaseolus Lunatus*), kidney beans and green beans (i.e., string beans) = *Phaseolus vulgaris*, see Gentry, 1969.

<sup>33</sup> Dalby, 2003, p. 167: “Difficult to identify” but somewhere in the territory of chick pea (*Lathyrus cicera*). There is a species called *Lathyrus Ochrus*, common name Cyprus vetch.

<sup>34</sup> Wild chickpeas are mentioned 2.54.



*Kenchron*, or millet seeds<sup>35</sup> “when combined with figs are good nourishment for workers. Lentils (*phakoi*, *Lens culinaris*) “are heating,”<sup>36</sup> *oroboi*, seeds of the bitter vetch (*Vicia ervilia*) “are filling and give a person good color.” Linseed (flax seed, λίνου καρπός; Dalby, 2003, p. 196: *Linum usitatissimum*) is “nourishing” (actually high in omega 3 fatty acids). *Horminou karpos*, or fruit of sage plant, *Salvia sclarea* is said to be similar.<sup>37</sup> Lupins (*thermoi*, *Lupinus albus*),<sup>38</sup> and *erusimon*, identified by Jones as “hedge-mustard seed” or *Sisymbrium polceratium* are warming and pass by stool.<sup>39</sup> Seed of the *sikyos* brings up an interesting question – Jones has “cucumber seed”, but that seems implausible – although the author of *Regimen* may have had cucumbers available, the seeds of that plant seems an odd entry; *sikyos* has to be a gourd or melon – Dalby (2003, p. 215) argues that it is the “chate” melon, *Cucumis melo chate*; in any case something in the muskmelon direction.<sup>40</sup> The author completes the review of “seeds” with sesame seeds (*Sesamum indicum*), safflower seeds,<sup>41</sup> and poppy seeds, both white and black.<sup>42</sup>

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<sup>35</sup> Dalby, 2003, p. 218-219: Broomcorn millet, *Panicum miliaceum*.

<sup>36</sup> Wild lentils are mentioned 2.54.

<sup>37</sup> Jones has “Clary seed”, which is correct but may be confusing. See Dalby, 2003, p. 290. This variety of sage is regarded as essentially medicinal; the kitchen variety of sage is called *sphakos* in Greek.

<sup>38</sup> Dalby (2003, p. 201) notes that lupins are toxic when raw; appropriately treated they are a popular snack in many parts of the world.

<sup>39</sup> Dalby seems not to include this plant. It’s regarded as an “invasive species” in the US, although it is used as food in Europe. It is not related to true mustard, which is in the genus *Brassica*, but preparations of its seeds are used as “mustard.”

<sup>40</sup> *Cucumis sativa* is native to northern India and may have entered the Greek world by this time, but “*sikyos*” is a gourd or melon, not a cucumber.

<sup>41</sup> Jones (1931) has “wild saffron”; I’m not sure what he has in mind. The κνίκος, as Dalby (2003, p. 289) points out, is the safflower, *Carthamus tinctorius*. Its seeds continue to be used in various cuisines.

<sup>42</sup> Μήκων. Dalby (2003, p. 268) clarifies: the opium poppy *Papaver somniferum* is the white, *P. rhoeas* is the black, cultivated for oil.

## Meats

### Mammalian

It is generally believed that the Hellenes ate meat rarely, on the occasion of sacrifices to the gods,<sup>43</sup> but there is little indication of that in *Regimen* 2.46ff. The author ranks the available meats from “heavy” (beef) to “light,” and apparently to some degree from more available to less available. Goat-meat and pork occur to him immediately; lamb is “lighter” than mutton, kid meat lighter than goat, veal lighter than beef, but piglet is heavier than pork. Horse meat is lighter than asses’ meat, though foal is better. The author compares dog meat to puppy meat (the Hippocratic texts several times recommend puppy meat),<sup>44</sup> and goes on to wild game – wild boar, deer, hare, fox, and hedgehogs.<sup>45</sup> That is a pretty broad selection of mammalian meats; no rodents (not a surprise), and no camel – that was to come into the Hellenic world a little later.<sup>46</sup> Probably the most surprising here are the last two items, but if one eats dog, fox is not a stretch; hedgehogs continue to be regarded as a delicacy in some cultural groups.

### Avian

*Regimen* 2.47 ranges bird meat from “dry” to “moist”. Interestingly, chickens are not the first named – perhaps because not as “dry” as ringdove, partridge, and pigeon.<sup>47</sup> Then comes chicken

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<sup>43</sup> Garnsey, 1999, p. 86: “outside the religious context meat was hardly consumed at all”. Cf. Davidson, 1997, p. 15.

<sup>44</sup> E.g., *Diseases of Women* 2.217.

<sup>45</sup> Dalby references: beef, goat, pork, lamb vs. mutton, kid vs. goat, beef. Dalby does not include the Greek word for veal in his index, nor an entry for veal. Piglet vs. pork, ass vs. foal, horse, dog vs. puppy, wild pig, deer (red deer), hare, fox. At hedgehogs (ἐχίνων) Dalby (2003, p. 297) notes the Greek homonymy with sea urchin. Eating hedgehog: gutted and baked in a clay shell, according to the archaeologists. In baking, the clay hardens, and when cracked and open, the “pottery” strips off the spines.

<sup>46</sup> Arist. *HA* 578a10-16 finds it tasty.

<sup>47</sup> For a general account of bird meat in the classical world, see Dalby, 2003, p. 51-53.

(*Gallina villatica* or *Gallus gallinaceus*) and turtledove.<sup>48</sup> Water birds include the domesticated goose (*Anser anser*), and ducks, including other water birds generally (νήσσης, most likely mallard, *Anas platyrhynchos*; “other” may include teal). There were other species of birds that were eaten; *Regimen* does not seem interested in extending this list much.

### **Fish and sea food**

We should not be surprised that there are about seventeen species of fish and about seventeen species of sea-food listed in *Regimen*. Identifying the species is a little challenging – Jones tends to apply British fish names, but Greek fish are sometimes not the same as fish in British seas. *Regimen* lists them from “dry” to “moist”; I will give their Greek name as in *Regimen*, and identifications in footnotes. Fish that hang out in stony places tend to be “light”: σκορπίος,<sup>49</sup> δράκων,<sup>50</sup>

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<sup>48</sup> Dalby, 2003, p. 83 for chickens, p. 261 for turtledoves (τρογόνος), *Streptopelia turtur*.

<sup>49</sup> Jones, 1931: Skorpion fish; Dalby, 2003, p. 278: rascasse, *Scorpaena scrofa*. An important ingredient in true bouillabaisse.

<sup>50</sup> Jones, 1931: Dragon fish; Dalby, 2003, p. 349: *Trachinus draco*. This fish is known in England as the Greater Weever; “Dragonfish” is applied to several species.

καλλιώνυμος,<sup>51</sup> κόκκυξ,<sup>52</sup> γλαῦκος,<sup>53</sup> πέρκη,<sup>54</sup> θρίσσα,<sup>55</sup> κίχλη,<sup>56</sup> φουκίς,<sup>57</sup> κωβίος,<sup>58</sup> ὀλεφίτις.<sup>59</sup> Fish that wander around and are “wave-tossed” have more solid flesh. Light would include νάρκη,<sup>60</sup> ῥίνοι,<sup>61</sup> θῆσσα.<sup>62</sup> Heavier, because they feed in muddy places, include κέφαλοι,<sup>63</sup> κεσταραῖοι,<sup>64</sup> ἐγγέλυες.<sup>65</sup> The author adds an

<sup>51</sup> Jones (1931) transliterates, unless he thinks that this is a member of the genus *Callionymus* – there is a species found in the Mediterranean, *Callionymus maculatus*, the Spotted dragonet; Dalby (2003, p. 348) tentatively suggests *Uranoscopus scaber*, or “stargazer.” The dragonet is actually more likely to be used as food in the Greek region.

<sup>52</sup> Jones, 1931: “piper.” Dalby, 2003, p. 170: agrees, stating the genera as *Trigla*, *Trigloporus*, and *Chelidonichthys*.

<sup>53</sup> Jones, 1931: “Grey fish.” Dalby (2003, p. 56f) tentatively says bluefish, *Pomatomus Saltator*. Not sure what Jones has in mind. If we read “*glaukos*” as “blue” (as in “*glaukope Athena*” in Homer), then it seems reasonable.

<sup>54</sup> Obviously “perch”. *Regimen* does not specify fresh or salt water – these are two different species, river perch are *Perca fluviatilis* (Dalby, 2003, p. 255), sea perch are *Serranus Cabrilla* (Dalby, 2003, p. 90).

<sup>55</sup> Jones (1931) just transliterates; Dalby (2003, p. 298) suggests that this could be any of several species of shad. *Alosa agone* is a possibility.

<sup>56</sup> Jones (1931) has “thrush fish”. Dalby, 2003, p. 361: perhaps *Labrus viridis*: green wrasse.

<sup>57</sup> Jones (1931) has “hake”. Dalby (2003, p. 362) says that this may be *Crenilabrus tinca* (Peacock Wrasse). If hake it would most likely be *Merluccius merluccius*.

<sup>58</sup> Jones has “gudgeon”; this is a common name for the goby, Dalby (2003, p. 160) identifies as *Gobio gobio*, a common fresh-water fish in Europe.

<sup>59</sup> “*Elephitis*” is not in Dalby’s index, and LSJ says that it is “corrupt” in *Regimen* 2.48.

<sup>60</sup> The “torpedo” (Dalby, 2003, p. 279): *Torpedo marmorata et al.*, a ray. No mention of the electric shock brought to prominence by Socrates’ reference to himself as the *narke narkosa*, *Meno* 80.

<sup>61</sup> Jones, 1931: “skate.” Dalby, 2003, p. 120: monkfish or angel shark, *Squatina squatina*. Skate can be the same as angel shark.

<sup>62</sup> Jones, 1931: “turbot.” Dalby, 2003, p. 148: a flat fish smaller than a turbot, applied to a range of species.

<sup>63</sup> Jones, 1931: “mullet.” Dalby, 2003, p. 168: probably *Mugil Cephalos*.

<sup>64</sup> Jones (1931) just transliterates. Dalby, 2003, p. 168: probably *Liza Ramada*, common name “thinlip mullet”.

<sup>65</sup> Eels. Dalby, 2003, p. 126: *Anguilla Anguilla*.

“etc.” here, and goes on to say that river and pond fish are even heavier.

Octopus and squid dull the eyes,<sup>66</sup> but broth made of them, as well as other sea food, “passes well by stool.” Shell-fish (κογχύλια)<sup>67</sup> include, notably, pinnas,<sup>68</sup> limpets,<sup>69</sup> purple-shell (Jones says “purple fish”),<sup>70</sup> “trumpets” (a whelk),<sup>71</sup> oysters,<sup>72</sup> mussels,<sup>73</sup> cockles (scallops),<sup>74</sup> and tellines.<sup>75</sup> All of those are familiar enough as food, some more edible than others; it may be surprising to find κνίδαι, sea-nettles or sea-anemones listed as a sea-food. Dalby (2003, p. 296) identifies the species as *Actinia equine*, in France called “tomate de mer” – Aristotle (*HA* 531a31-b17) says that they are good to eat in the winter, but not in the summer. Perhaps some may also find the “spawn of sea-urchins” (Jones, 1931) or ὠὰ ἐχίνων a little surprising. As Dalby (2003, p. 296-297) notes, this refers to the ovaries of the sea urchin, *Echinus esculentus*, regarded as a delicacy by many.

Finally, for sea-food species, the author turns to malacostraca – lobsters and crabs. Somewhat oddly he starts with the “juice” of καράβων, identified by Dalby (2003, p. 192f) as “langouste” (*Palinurus elephas*) or “spiny lobster” as Jones (1931) has it. Or are we talking about a soup? He goes on to ἄρκοι, identified by Dalby

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<sup>66</sup> Jones (1931) writes *Polypus* and *Cuttle*; Greek: πολύποδες (Dalby, 2003, p. 236-237: *Octopus vulgaris* and *O. macropus*) and σπητία (Dalby, 2003, p. 110: *sepia officinalis*; cf. Dalby, 2003, p. 30).

<sup>67</sup> Dalby, 2003, p. 300f discusses shell fish in general. *Regimen*’s note on “passing by stool” is seconded by other authors as a cure for constipation.

<sup>68</sup> Πίννα. Dalby, 2003, p. 261: *Pinna nobilis*.

<sup>69</sup> Λεπάδες. Dalby, 2003, p. 196: *Patella caerulea et al.*

<sup>70</sup> Πορφύρα. Dalby, 2003, p. 271: several species, primarily genus *Murex*.

<sup>71</sup> Κήρυκες. Dalby, 2003, p. 350: perhaps *Charonia Tritonis*.

<sup>72</sup> ὄστρεα. Dalby, 2003, p. 246: especially *Ostrea edulis*.

<sup>73</sup> Μύες. Dalby, 2003, p. 224; a range of species.

<sup>74</sup> Κτένες. Dalby, 2003, p. 295: *Pectinidae* species.

<sup>75</sup> Τελλίνα. Dalby, 2003, p. 348: *Donax trunculus*.

(2003, p. 86) as “cigale” or flat lobster, *Scyllarus arctos*, and crabs, both river crabs (*Thelphusa fluviatilis*) and sea crabs.<sup>76</sup>

Fresh fish and sea-food don’t stay fresh very long; the Greeks preserved fish with salt and vinegar. *Regimen* says that τάριχοι are “drying” – that would probably be salt fish, here, though the term is used rather generally for foods preserved with salt and/or vinegar.<sup>77</sup>

After some comments about dry and moist meats, the author comments briefly that bird’s eggs are nutritious, as is cheese. It is noteworthy that *Regimen* does not at all distinguish different sorts of cheese, not even from cow, sheep, or goat milk.<sup>78</sup> Going on to a brief discussion of beverages, unsurprisingly it is noted that water is “cooling and moist”. (We remember the recommendation to drink water “if available” and if not, white wine, 2.35 – that reveals a concern about the potability of available water.) Nor is it surprising that there is a comparison of various wines, as well as vinegar.<sup>79</sup> It’s just a little disappointing that the author compares wines by color, sweetness, and acidity, but not by origin as so many ancient authors do, since it might have helped pin down the geographical origin of the work. It is in this context that the author comments on honey, the major source of sweetness in ancient Greek cuisine – he’s clearly thinking of honey mixed with water, the ancient equivalent of soda pop, perhaps. Water, wine, vinegar, honey, and also milk, were of course important ingredients in the preparation of various foods. We note that there is no mention of beer – Dalby (2003, p. 50f) says that although it was popular in Egypt and elsewhere, the Greeks generally didn’t like it. And of course no tea or coffee – those were introduced

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<sup>76</sup> Dalby (2003, p. 105) discusses the various possible species. “Regular” lobsters (*karabon*) appear at 3.82.

<sup>77</sup> Dalby, 2003, p. 95f. Jones (1931) has “pickled fish”, also all right as a translation. Fish can be preserved with salt in at least two ways: dried and salted, or salted then packed in a vinegary brine; dry salted fish needs to be “reconstituted” before eating, pickled fish is ready to eat. “*Tarichos*” can refer to either one.

<sup>78</sup> Dalby (2003, p. 80) discusses cheese. He notes the cheese-making of the Cyclops, *Od.* 9.237-249.

<sup>79</sup> Dalby (2003) comments on wine: p. 350ff; and vinegar: p. 343.

to the Greeks in the medieval and late medieval periods, by the Muslims.

In 2.54, *Regimen* turns to vegetables, i.e. λαχάνων.<sup>80</sup> Anyone familiar with Mediterranean cuisine will not be surprised to find that the first three mentioned are garlic, onion, and leek.<sup>81</sup> These, and most of the other vegetables that follow, are said to be “hot” though lettuce “cools.” Radish is followed by several plants used mainly for their leaves, at least in this context: cress (κάρδαμον),<sup>82</sup> mustard (νᾶπυ),<sup>83</sup> arugula (εὔζωμον),<sup>84</sup> coriander (κορίαννον),<sup>85</sup> lettuce (θρίδαξ),<sup>86</sup> anise (leaves) (ἄνηθον),<sup>87</sup> celery (σέλινον),<sup>88</sup> basil (ῶκιμον),<sup>89</sup> rue (πάγαννον),<sup>90</sup> asparagus (ἀσπάρραγος), sage

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<sup>80</sup> Cf. Dalby, 2003, p. 340. In 3.58 the author recommends boiled vegetables especially in the spring and summer, and more raw vegetables in summer.

<sup>81</sup> Dalby, 2003, p. 155, 240, and 193. The wild forms of these plants are noted later in the chapter.

<sup>82</sup> Dalby, 2003, p. 106: the Greek always means cress, *Lepidium sativum*, never the Indian spice derived from several species of the genus *Elettaria*.

<sup>83</sup> Dalby, 2003, p. 225. Dalby emphasizes the use of the seeds as spice, but I suspect that in this context, “mustard greens” is meant here. Dalby points out that “mustard” can refer to *Brassica negra* or *Sinapis alba*; both species have edible leaves (Wikipedia).

<sup>84</sup> Dalby, 2003, p. 282: *Eruca sativa*. Jones has “rocket”, another common name for arugula.

<sup>85</sup> Dalby (2003, p. 104) notes that *Regimen* refers to the leaf; seeds, fruit also used. This is *Coriandrum sativum*, also known as cilantro.

<sup>86</sup> Dalby, 2003, p. 196: *Lactuca sativa*.

<sup>87</sup> Dalby, 2003, p. 12. The leaves of the anise plant are edible. Dalby has *anneson* for the Greek, rather than *anethon*, but notes that “spelling varies.” See also LSJ ἄνησσον. *Pimpinella anisum*.

<sup>88</sup> Dalby, 2003, p. 77: *Apium graveolens*, definitely using the leaves. Wild celery is cited later in the chapter.

<sup>89</sup> Dalby, 2003, p. 47f: *Ocimum basilicum*; leaves eaten in salad. Dalby says *Ocimum americanum*, not the species used by the Greeks.

<sup>90</sup> Dalby, 2003, p. 384f: *Ruta graveolens*; see also Wikipedia, whose entry on rue is entertaining.

(ἐλελίσφακον),<sup>91</sup> night-shade (στρύχνος),<sup>92</sup> purslane (ἀνδράχνη),<sup>93</sup> nettles (κνίδη),<sup>94</sup> catmint (καλαμίνθη),<sup>95</sup> mint (μίνθη),<sup>96</sup> sorrel (λάπαθον),<sup>97</sup> orach (ἀνδράφαξις),<sup>98</sup> blite (βλίτον),<sup>99</sup> and cabbage (κράμβη).<sup>100</sup>

Turning to some other vegetables, he mentions the beet (σεύτλον),<sup>101</sup> “colocynth” (κολοκύντη),<sup>102</sup> and turnip (γογγυλλίς).<sup>103</sup>

<sup>91</sup> Dalby, 2003, p. 290: *Salvia triloba*, *S. grandiflora*. I don’t know why he doesn’t say *S. officianalis*, though *S.* is sometimes called “Greek Sage.”

<sup>92</sup> Dalby, 2003, p. 231: *Solanum nigrum*, noting possible confusion with poisonous relatives. Actually, this species can also be toxic; food use of the leaves of less toxic strains, if boiled, continues today in Crete and other places (Verivaki, 2008). Wild nightshade is noted again later in the chapter.

<sup>93</sup> Dalby, 2003, p. 272: *Portulaca oleracea*. This is a plant that I grew up thinking of as a weed – pigweed. But it is widely eaten both raw and cooked.

<sup>94</sup> Dalby, 2003, p. 230f: gathered in late winter or early spring, the tops are edible if boiled. *Urtica dioica* et al. The wild variety is mentioned later in the chapter.

<sup>95</sup> Dalby, 2003, p. 219f: a mint, possibly catnip, so LSJ. If so, it’s *Nepeta cataria*, used by some as a tea or as a seasoning herb. Not often mentioned in classical literature.

<sup>96</sup> Dalby, 2003, p. 219f: a range of mints (*Mentha*) were used in foods. Wild mint noted again later in the chapter.

<sup>97</sup> Dalby, 2003, p. 306: *Rumex* sp. Wikipedia says that it can be an ingredient in spanakopita.

<sup>98</sup> Dalby, 2003, p. 243: *Atriplex hortensis*. Can be cooked like spinach. It is also known as “saltbush.”

<sup>99</sup> Dalby, 2003, p. 56: *Amaranthus blitum*. Can be cooked like spinach; a medicinal use is cited in *Regimen* 3.75. It is also known as “purple amaranth”.

<sup>100</sup> Dalby, 2003, p. 67: this is the headed cabbage, *Brassica oleracea*. Wild cabbage is mentioned a bit later.

<sup>101</sup> Dalby, 2003, p. 51: *Beta vulgaris*. He mentions the root, the leaves, and juice made from beets. Wild beets are mentioned a little later.

<sup>102</sup> Dalby, 2003, p. 90 identifies it as *Citrullus colocynthis*. It seems to have been more attractive as a medication than as a source of nutrition. Jones says “pumpkin”, but obviously not that, for the pumpkin is a New World member of the melon family, *Cucurbita pepo*. Joly says “citrouille,” but that can be confusing too, since that’s usually *Cucurbita maxima*, also a New World plant. LSJ also list these species as translations of *kolokynte*, but the “kolocynth” has a small hard fruit with bitter pulp.

<sup>103</sup> Dalby, 2003, p. 337: *Brassica campestris*, possibly both for the root and for the greens. Carrots began to be cultivated in the 3<sup>rd</sup> century BCE (Dalby, 2003, p. 75); possibly the same for parsnip (cf. Dalby, 2003, p. 249).



The list of cultivated vegetables concludes with some herbs: pennyroyal (γλήχων),<sup>104</sup> origanum (όρίγανον),<sup>105</sup> savory (θύμβρη),<sup>106</sup> thyme (θύμον),<sup>107</sup> and hyssop (ύσσωπος).<sup>108</sup>

The chapter concludes with “juices” (χυμοί) of wild vegetables; here I list only those species not already noted in their cultivated form. These are samphire (κρήθμον),<sup>109</sup> “cytisis” (κύτισος),<sup>110</sup> fennel (μάραθρον),<sup>111</sup> maiden-hair fern (άδίαντος),<sup>112</sup> hart’s tongue

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<sup>104</sup> Dalby, 2003, p. 254: *Mentha pulegium*. A few leaves in cooking will not kill you, but ingesting the oil is likely to be fatal.

<sup>105</sup> *Origanum* is the genus. Jones guesses *marjoram*, *O. majorana*, Dalby (2003, p. 243) says *oregano*, *O. vulgare*.

<sup>106</sup> Dalby, 2003, p. 295: *Satureja thymbra*. Of the many species in the genus *Satureja*, this one grows wild in Crete, at least.

<sup>107</sup> Dalby, 2003, p. 327: *Thymus vulgaris* and other related species.

<sup>108</sup> Dalby, 2003, p. 182: *Hyssopus officinalis*. It’s an intense flavoring agent that contributes to the distinctive flavor of the liqueur Chartreuse.

<sup>109</sup> Dalby, 2003, p. 291: *Crithmum maritimum*. This grows on rocks at the (salt) water’s edge.

<sup>110</sup> Not in Dalby’s index, perhaps because it is not thought of as a “food,” but it was regarded as medicinal by the ancients (see LSJ ad κύτισος). LSJ says *medicago arborea*, perhaps relying on Hehn (1888), and gives an alternative of *Laburnum vulgare*. Botanically, *Cytisus* is today a genus of flowering plants, some of them called “broom”; most common seems to be *Cytisus scoparius*. It’s a shrub 4-6 feet tall. Jones says “clover” and Joly says “cytise.” The French Wikipedia says, “Le nom « cytise » vient du grec *Kytisos* qui était à l’origine le nom d’une espèce de trèfle très répandue sur l’île grecque de Kythnos puis devient un nom générique pour un grand nombre de légumineuses.” That explains Jones’ “clover” anyway (“trèfle” is French for “clover”).

<sup>111</sup> Dalby, 2003, p. 142: *Foeniculum vulgare*. The village of Marathon was so named because a great deal of fennel grew there.

<sup>112</sup> Not in Dalby’s index; LSJ says *Adiantum Capillus-Veneris*. Fiddleheads of ferns are eaten, though perhaps not the maiden-hair fern? At any rate, *adiantum* fern is not toxic, apparently; Native Americans use it medicinally (Wikipedia).

fern (σκολοπένδριον),<sup>113</sup> hartwort (σέσελι),<sup>114</sup> endive (σέρις),<sup>115</sup> burparsley (καυκαλίσ) (salad burnet?),<sup>116</sup> hypericum (ύπερικόν),<sup>117</sup> mercury (λινόζωστις),<sup>118</sup> elder ([ἀκτῆς] χαμαιάκτη),<sup>119</sup> and safflower (κνήκου).<sup>120</sup>

Chapter 55 turns to fruits (ὀπώρης, ἐγκάρπια) and eventually nuts. Interestingly, the author starts with mulberries (μόρα),<sup>121</sup> said to be “warming,” and less surprisingly goes on to pears (ἄπιοι and ἀχράδες),<sup>122</sup> and apples and quinces (μῆλα γλυκέα and μῆλα ὀξέα,

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<sup>113</sup> Not in Dalby; LSJ identify it as *Scolopendrium officinale*, an edible fern. Botanists classify it as *Asplenium scolopendrium*. Medicinal uses noted by Hill, 1812, p. 162.

<sup>114</sup> Identification by LSJ, followed by Dalby, 2003, p. 173; Jones (1931) just transliterates. Hartwort is *Tordylium officinale*, still used by some Mediterranean cooks.

<sup>115</sup> Dalby, 2003, p. 132: *Cichorium Endiva*: Chicory endive. The implication of the placement in the text is that this vegetable was known to the author as a wild plant, not cultivated.

<sup>116</sup> “Bur-parsley” is Jones’ translation. Dalby, 2003, p. 173 identifies “*kaukalis*” with hartwort, as does LSJ. Bur-Parsley is *Caucalis platycarpus*. Dalby (2003, p. 173) notes that Theophrastus appears to distinguish seseli from *kaukalis*. Joly says “pimprenelle”, salad burnet in English.

<sup>117</sup> Not in Dalby’s index. *Hypericum* is the genus name for St John’s Wort, a genus with several species. Several species have medicinal uses. (Wikipedia) See also LSJ.

<sup>118</sup> Dalby, 2003, p. 216: *Mercurialis annua*, with medicinal uses.

<sup>119</sup> Jones (1931) has “elder” in his translation and ἀκτῆς in his text. Elder is χαμαιάκτη. Dalby, 2003, p. 130: *Sambucus nigra*. Used in traditional medicine; the berries are used in jellies and jams, for example, and the flowers are part of the recipe for Sambuca, an Italian liqueur.

<sup>120</sup> Jones (1931) has “*carthamus*” in the translation. Dalby, 2003, p. 289: Safflower, *Carthamus tinctorius*. An ancient cultivated plant. Elsewhere in *Regimen* (1.35, 3.73) the author refers to medicinal use of hellebore, *Helleborus niger*. See Dalby, 2003, p. 174f.

<sup>121</sup> Dalby, 2003, p. 222: *Morus nigra*. In 3.58 the author recommends caution eating summer fruit.

<sup>122</sup> Pears: Dalby, 2003, p. 253: *Pyrus communis*; Dalby, 2003, p. 254: *Pyrus spinosa*. Jones calls the second “wild winter pears.” *Pyrus spinosa* is indeed an effective hedge-row plant.

κυδώνια), whose odor quell nausea.<sup>123</sup> Three rather unusual fruits follow: sorbs (οὔα),<sup>124</sup> medlars (μέσπιλα),<sup>125</sup> and cornel berries (κράνια).<sup>126</sup> These three fruits are all eaten “super-ripe” or when they might appear to be “spoiled.” The author goes on a bit about the virtues of the pomegranate (ρούϊς).<sup>127</sup> The next two items in the list of fruits require a bit more discussion: σίκυοι ὠμοί and πέπωνες. Jones correctly translates “unripe gourds” but then adds “cucumber,” probably a mistake. Dalby (2003) tells two stories: at p. 214f, he says that σίκυοι ὠμοί are cucumis melo, melons, variety “chate,” but at p. 162 he says that a “*sikyon*” is *Lagenaria sicararia*, known as the calabash or bottle gourd. This can indeed be harvested unripe (*omon*) and eaten raw,<sup>128</sup> and could be considered a “fruit” at that point. Dalby notes that ripe *sikyon* can be dried for preservation for winter soups, though a ripe calabash has many non-food uses. Jones goes on to translate “*pepo*” as a ripe “*sikyon*,” but that is a clear mistake. Πέπωνες are sweet melons, probably watermelon, *Citrullus lanatus*.<sup>129</sup> We conclude the discussion of fruits with very typical Greek fruits – grapes and figs, βότρυς and σῦκον. The author notes white grapes and sweet grapes (‘very heating’), as well as unripe (sour) grapes (‘purgative’), and raisins.<sup>130</sup> Green, ripe, and dried figs

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<sup>123</sup> Dalby, 2003, p. 19f *Malus pumila*, with a big discussion of apples in the ancient diet. *Regimen* distinguishes “sweet” from “sour” apples. Quinces: Dalby, 2003, p. 275f, *Cydonia vulgaris*. *Regimen* makes a point of mentioning apple juice in particular, so must have had some fairly sweet apples.

<sup>124</sup> Also known as “service-berries” as Jones has it. Dalby, 2003, p. 306: Sorb; *Sorbus domestica*.

<sup>125</sup> Dalby, 2003, p. 214: *Mespilus germanica*.

<sup>126</sup> Dalby, 2003, p. 104: *Cornus mas*.

<sup>127</sup> Dalby, 2003, p. 266 *Punica Granatum*.

<sup>128</sup> Calabash seeds are marketed for growing edible fruits: <http://www.evergreenseeds.com/calgouropo.html>.

<sup>129</sup> See Sallares, 1991, p. 483 n. 117.

<sup>130</sup> Dalby, 2003, p. 163: *Vitis vinifera*. Dalby talks about unripe grapes at p. 225 and raisins at p. 163.

are compared.<sup>131</sup> The first crop ‘have too much juice,’ the last ones are best.

The author concludes this section with comments on the virtues of almonds,<sup>132</sup> “round nuts” and “flat nuts”,<sup>133</sup> and acorns.<sup>134</sup>

## Recipes

As a rule the author does not tell us how these ingredients are prepared, but there are some exceptions to that rule. For example, at 3.75, if an individual is suffering from vomiting and diarrhea, feed him “warm yeasty bread, crumbled into dark wine or pork broth.” Plus “fish boiled in bitter brine”. Also “fleshy meats, like pig’s feet well boiled and fat roast pork, but not suckling pig nor puppies nor kid.” Leeks and onions boiled and raw. Boiled *blite* and gourd. Unmixed wine. Figs with the meal. In 3.79, for another sort of diarrhea, unleavened bread “baked in a pot or under ashes,” and dipped in dry wine. “Fish boiled in brine or grilled with vinegar.” Meat preserved in salt or vinegar. Roast dog. Pigeon or the like boiled or roasted. Minimal vegetables. In 3.80, for another set of symptoms, white bread baked in the oven, fish boiled in sauce, thoroughly boiled pig’s feet, tasty sauces and dark wine. In 3.81, for yet another set of symptoms, barley loaves, non-salted fish boiled or broiled, birds boiled or roasted “with sauce.” Hares boiled in water, vegetable such as beet boiled with vinegar, dry red wine. In 3.82, for still another set of symptoms, barley loaves sprinkled with *sitania*.<sup>135</sup> Vegetables if

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<sup>131</sup> Dalby (2003, p. 143f) has a useful article on figs, *Ficus Carica*. Figs have already been mentioned at 2.45.

<sup>132</sup> See Dalby, 2003, p. 152 for a chart of classical nuts. Almonds are ἀμυγδάλαι. Dalby: *Prunus dulcis*.

<sup>133</sup> “Round nuts” (κάρυα στρογγύλα) Dalby, 2003, p. 173: hazelnut, *Corylus avellana*. “Flat nuts” (... πλατέα) Hard to know what those would be! Maybe half a walnut would be a “flat nut”? *Juglans regia*, in Greek normally *karyon basilikon*.

<sup>134</sup> Jones says “ilex nuts and acorns” for ἄκυλοι δὲ καὶ βάλανοι δρύινοι. Dalby points out that *akyloi* are the acorn of *Quercus ilex*, *balanoi* of *Quercus robur*; *drys* is the Greek genus name of these trees.

<sup>135</sup> Jones says “buckwheat.” Dalby does not have this species in his index. LSJ, referring to Theophrastus, say that it is a branching cereal like *krithanias*, or barley.

boiled, boiled fish, lobsters (*karabon*), a range of sea-foods, especially in soup, pig's feet, kid, lamb, or puppy boiled. "Soft" wine. Fruit with the meal. Fresh chickpeas, or dried chickpeas well soaked in water.

I have gone into some detail about this part of *Regimen* 2 because it reveals the sort of "technical" knowledge that a person preparing *opsa* and *tragemata* might need to know in order to qualify as a "technician" in this art. At the same time, we realize that the sort of knowledge that is included is a combination of the empirical – recognizing the foods that cause flatulence, that are easy or difficult to evacuate, that upset the stomach, or may cause what we would call a "sugar high" – and the philosophical, in terms of the theory of the composition of all things, especially foods, in terms of the proportions of "fire" and "water." Perhaps, returning to Socrates' distinction at *Gorgias* 462, the true distinction between an "inferior" *empeiria* and a laudable *techne* is in the aim of the practice – enjoyment and pleasure, without care for the lasting effects, of the "empirical," health and long-term physical well-being, of the laudable *techne*. Certainly *Regimen* aspires to the second, and thus is on the road to a true *techne* of science-based nutrition.

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