

## A STRUCTURAL PATTERN IN GREEK DIETETICS AND THE EARLY HISTORY OF GREEK MEDICINE

by

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### INTRODUCTION

Early Greek medicine—the medicine actually practised by Greek doctors of the fifth and fourth centuries B.C. and reflected in various texts of the Hippocratic Corpus—has two noticeable characteristics. In its nosology it conceives of disease as a process, which runs a predictable course, reaching a crisis which “determines” or “decides” the recovery or death of the patient.<sup>1</sup> In its therapy it lays great emphasis on diet (DIAITA), which includes the whole regimen of food, drink, exercise, and baths which the patient should adopt to aid his recovery. Such regimens do not differ in kind from those which are prescribed for the healthy man in order to maintain or to improve his health. The comparative evidence from Mesopotamia and Egypt is limited, but it does seem to suggest that these two points are quite distinctive of Greek medicine.<sup>2</sup> Are they also archaic and original characteristics, or are they a product of the rational and speculative medicine which apparently began in the fifth century, in response to and reaction against the cosmological and physiological speculation of pre-Socratic philosophy?

### WHEN DID DIETETICS APPEAR IN GREEK MEDICINE?

Our knowledge of early Greek medicine is derived almost exclusively from the Hippocratic Corpus, most of whose texts date from the fifth and early fourth centuries.<sup>2a</sup> Apart from this, there are a few scattered references to physicians, medical

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<sup>1</sup> Hippocratic prognosis (for prognosis in the Babylonian medical literature see note 2 below) depends upon this conception (see especially the *Prognosticon in Hippocrates. Works. With English translation*, edited by W. H. S. Jones, London, Loeb Classical Library (Heinemann), 1923-31, 4 vols. (vol. III edited by E. T. Withington), vol. II, pp. 6-55) as does the practice of taking daily observations in individual cases (*Epidemics* 1 and 3, *ibid.*, vol. I, pp. 146-287). But the conception is omnipresent and appears also in works which have been traditionally regarded as from the school of Cnidus (see notes 43 and 51 below): see the symptom descriptions for particular diseases in *Internal affections* and *Diseases* 2 and 3, which are in E. Littré, *Oeuvres complètes d'Hippocrate*, Paris, Baillière, 1837-61, 10 vols., vol. 7.

<sup>2</sup> See Dietlinde Goltz, *Studien zur altorientalischen und griechischen Heilkunde*, (*Sudhoffs Archiv*, Beiheft 16), Wiesbaden, Steiner, 1974, pp. 270-275 and 288-291. In comparing Greek and Babylonian medicine specifically in relation to the concept of disease as a process, she says: “With the Babylonians, the entity ‘disease’ is not so much characterized by its course or by a process which alters dynamically. The demon or the disease of the head may seize or grasp or settle on a man, but once they have done this, they remain there in a quite static condition of rest.” (p. 275). On p. 291 she remarks that, in consequence, “dietetics as a concept and as a therapeutic method is unknown in Babylonia; and would . . . contradict the Babylonian conception of disease.” Cf. also H. E. Sigerist, *Antike Heilkunde*, Munich, Lehmann, 1927, p. 17. For the differences between Babylonian and Hippocratic prognosis, cf. Goltz, *op. cit.*, pp. 257-261, especially p. 259, n. 83.

<sup>2a</sup> The standard edition of the Hippocratic corpus is that of E. Littré, *op. cit.*, note 1 above, and

practices, nosological, anatomical and physiological beliefs in poets and prose writers, from Homer (eighth century B.C.) to Herodotus (active 444–430 B.C.). In a very limited way these references enable us to form some conjectures about Greek medicine prior to the fifth century.<sup>3</sup> References by Hippocratic writers to their predecessors are rare. One of these occurs at the beginning of *Regimen in acute diseases*,<sup>4</sup> of which the approximate date is 400 B.C. The author criticizes a work which he calls the *Cnidian sentences*, written by his predecessors and now lost. He gives no indication of the interval which separates the composition of this text from his own work, but it was evidently remodelled or rewritten at least once before his time, and he is familiar with both “editions”, as we should call them. The original authors of this work, he says, gave a good description of the most obvious symptoms of each disease, although not necessarily those which a trained physician would find most significant. In therapy, the number of means which they employed was extremely limited, and consisted, except for the acute diseases, in “the administration of evacuative drugs and the prescription of whey and milk in season.” The later authors went about treatment in a “more professional” (IETRIKOTERON) way, but even they “wrote nothing worth mentioning about diet, a grave omission”. Although this passage has usually been treated as a criticism of the assumptions of a particular “school” of medicine from the standpoint of another, it is more rewarding to treat it as a historical sketch, the intention of which is to support the author’s own claim to originality and to advance upon his predecessors. As such, it corresponds to the conjectural picture of pre-Hippocratic medicine formed by modern historians. The main features of this picture are these. The surgeon, who heals flesh wounds and mends fractures, confining his treatment to manipulation and the external application of medicaments, is as old as Homer. But internal medicine hardly exists at all; where it does exist it is confined to a few simple purgative remedies, administered presumably by “leeches”,<sup>5</sup> who preceded (and continued to practise alongside) the fully rational “physicians” of the later fifth century. This comparative neglect of internal medicine can be explained by a tendency to regard non-traumatic illness as divinely sent, and therefore not to be cured by purely human means.<sup>6</sup> The great change occurred in the second half of the fifth century, when the treatment of internal disease was based on a dietetics which was itself based on physical theories about elements and their qualities. Thus dietetics and rational internal medicine are all but synonymous.<sup>7</sup>

citations are usually given by volume and page number of this edition (Li.). However, for the convenience of those who do not read Greek, references will be given to the edition with English translation by W. H. S. Jones and E. T. Withington, op. cit., note 1 above. Some texts which will be referred to are still without an English translation and do not appear in Jones’s edition. Reference to these will be made by volume and page of Littré’s edition.

<sup>3</sup> C. V. Daremberg, *La médecine dans Homère*, Paris, Didier, 1865; and *État de la médecine entre Homère et Hippocrate*, Paris, Didier, 1869; F. Kudlien, *Der Beginn des medizinischen Denkens bei den Griechen*, Zürich and Stuttgart, Artemis, 1967.

<sup>4</sup> Jones, op. cit., note 1 above, vol. II, pp. 62–125; R. Joly, *Hippocrate: Du régime des maladies aiguës*, Paris, Éditions Les Belles Lettres, 1972. On the date of this work, see note 35 below.

<sup>5</sup> The term and concept are suggested by O. Temkin, ‘Greek medicine as science and craft’, *Isis*, 1953, 44: 213–225.

<sup>6</sup> Kudlien, op. cit., note 3 above, and ‘Early Greek primitive medicine’, *Clio Medica*, 1968, 3: 305–336.

<sup>7</sup> Cf. Temkin, op. cit., note 5 above. Dietetics is “the great dynamic element within Greek medicine.” (p. 221).

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It does appear that dietetics was a relatively late development in Greek medicine, and that it can be closely associated with theories about nature which were current during the fifth century. This conclusion is suggested both by the writings on diet in the Hippocratic Corpus, and by external evidence. We may look at the writers first.

The most significant text, *On diet*,<sup>8</sup> explicitly bases its dietetic system on a physiological theory in which the elemental components of man are fire, which is hot and dry, and water, which is cold and wet, and in which the action of food, drink, and exercise on the body is explained in terms of their heating and cooling, drying and moistening effects. This implies a more general cosmological theory, which, while it cannot be laid at the door of any particular philosopher, bears at least a family resemblance to that of Heraclitus, perhaps as interpreted by his followers. Furthermore, the author of *On diet* imitates in the most obvious way the enigmatic style of Heraclitus.

We find the same dependence upon cosmological speculation in the text *On ancient medicine*,<sup>9</sup> which favours a dietetic approach to medicine. Although the author's whole thesis is that medicine can and should remain independent of the *a priori* and unverifiable speculation of the philosophers, he himself accepts a theory in which natural substances contain an indeterminate number of "powers" or qualities or humours, and in which the effect of nutriment upon the body is explained by these powers. In this case, the original model of the theory can be plausibly identified as the cosmology of Anaxagoras (c. 500–428).

*On diet* and *On ancient medicine* are theoretical works in which the presence of such speculation is to be expected. But even in texts where the interest in diet is more immediately practical, and which perhaps reflect the attitude of the ordinary Greek physician with no particular interest in the theoretical basis of diet, individual items of nutriment, or whole diets, are sometimes classified by reference to their effects in drying or moistening, cooling or heating the body. The text *Internal affections* recommends "drying out" in a particular case, and goes on to give a list of foodstuffs which have this effect.<sup>10</sup> The various regimens prescribed in this text are sometimes very elaborate, employing a large number of foodstuffs, along with complicated schedules of exercise; even where these are not justified in terms of their specific effects, it is reasonable to assume that such effects are implied. The same or a similar system underlies *Diseases of women* 1 and 2, which refers to a "diet which dries" (DIAITA XERANTIKE),<sup>11</sup> and elsewhere specifies such a diet as "infrequent drinking, red wine undiluted, no bathing or bathing in cold water, walks, one meal a day."<sup>12</sup> Foods which have the opposite effect are those which are "oily, pungent, sweet or salty."<sup>13</sup> The text *Diseases* 3 recommends "drying out by diet" but also "heating by diet";<sup>14</sup> in these cases the physician is presumed to know what diets will have these effects.

<sup>8</sup> Jones, op. cit., note 1 above, vol. IV, pp. 224–447; Joly, op. cit., note 4 above. The probable date of composition is towards the middle of the fourth century.

<sup>9</sup> Jones, op. cit., note 1 above, vol. I, pp. 3–64; text, translation and commentary in the same author's *Philosophy and medicine in Ancient Greece*, Baltimore, Johns Hopkins Press, 1946; A. J. Festugière, *De l'ancienne médecine*, Paris, Klincksieck, 1948. For its date, see note 36 below.

<sup>10</sup> Ch. 22 (VII, 222, 7–18 Li.).

<sup>11</sup> 1.66 (VIII, 136, 22 Li.; cf. 136, 12–20).

<sup>12</sup> 2.110 (VIII, 238, 9–10 Li.).

<sup>13</sup> 2.118 (VIII, 254, 18–256, 1 Li.).

<sup>14</sup> VII, 154, 20–21 and 152, 1. There is now a modern edition of this text by Paul Potter, *Kiel Dissertation*, 1973.

Sometimes such diets are specified in detail, as in *Affections* ch. 43, which sets out a pair of diets of which one moistens while the other dries.<sup>15</sup> In later chapters (47–60), this author lists the “powers” or effective qualities of each kind of food.<sup>16</sup> The therapeutic assumptions of these works can be summed up in the final words of the text *On the sacred disease*: “He who knows how to bring about in man dryness and moistness, cold and heat, by diet, can cure this disease [i.e. epilepsy] also, if he knows the right time to apply what is beneficial. He has no need of purificatory rites and magic and vulgar nonsense of that kind.”<sup>17</sup> This passage is particularly striking, in its assumption that the treatment of internal disease is dietetic, in its relation of dietetics to an abstract system of “opposites”, and in its conscious opposition of these attitudes to non-rational or magical methods of treatment.

It is true that a systematic classification of foodstuffs and a correlation of that classification with some system of co-ordinates (whether “opposites”, or winds, or points of direction etc.) need not in itself indicate the influence of that kind of speculation about the cosmos which is characteristic of Greek science. Such systems and correlations are said to be a feature of “the savage mind”. Particular kinds of food or drink do in fact heat or cool, dry or moisten, and there is no reason why the reduction of these or any other effects to a system should not have been quite independent of formal theorizing about nature. However, the impression which the texts themselves give is reinforced by external testimonia: these too suggest that dietetic medicine was a characteristic product of the fifth century.

One group of testimonia is concerned with Herodicus of Selymbria. In Plato’s *Republic*, of which the dramatic date is c. 410 B.C., Socrates is represented as contrasting the simple and heroic medicine of ancient days with “this new-fangled medicine which coddles diseases”, and which, he implies, was invented by Herodicus of Selymbria. Herodicus, according to the same passage, was a gymnastic trainer who suffered from a chronic disease; he applied a complicated regime to himself, and this became fashionable.<sup>18</sup> Plato also makes the sophist Protagoras, in the dialogue of that name, refer to Herodicus as a gymnastic trainer;<sup>19</sup> from these and other remarks, such as the comment in the *Epidemics* that Herodicus “killed” fever patients with exercise,<sup>20</sup> it seems that physical exercise was the main feature of his system. However, gymnastic training must have involved some considerable attention to kinds and quantities of food as well as exercise; its essence must have been in the application of both in measured gradients. It is reasonable to suppose that Herodicus had devised a training system of his own, which he then applied not merely to the treatment of internal illness but even, as *Epidemics* 2 indicates, of acute internal disease. In the biographical tradition, Hippocrates himself is said to have been a pupil of Herodicus,<sup>21</sup>

<sup>15</sup> VI, 152 Li.

<sup>16</sup> VI, 254–269. Li.

<sup>17</sup> Jones, op. cit., note 1 above, vol. II, 183; H. Grensemann, *Die Hippokratische Schrift “Über die heilige Krankheit”*, Berlin, W. de Gruyter, 1968, p. 88, 26–90,3.

<sup>18</sup> Plato, *Republic* III, 406A–C.

<sup>19</sup> Plato, *Protagoras*, 316D.

<sup>20</sup> *Epidemics* VI, 3, 18 (V, 302, 1–4. Li.).

<sup>21</sup> “Soranus”, *Vita Hippocratis* 2.175, 7–9 Ilberg. But elsewhere the relation is reversed. There is considerable confusion in the tradition on this point; there is also a confusion between Herodicus of Selymbria, the dietician, and Herodicus of Cnidus. The testimonia are conveniently assembled in H. Grensemann, *Knidische Medizin*, Berlin and New York, W. de Gruyter, 1974, pp. 15–20.

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and a commentator on Homer says that "Herodicus began dietetic medicine, and Hippocrates, Praxagoras and Chrysippus perfected it."<sup>22</sup>

According to another tradition, it was the Pythagoreans who invented dietetics. This is stated in Iamblichus' *Life of Pythagoras*:

The Pythagoreans . . . valued principally the dietetic division of medicine, and were most painstaking in it. In the first place they attempted to recognize the indications of symmetry between drink, food and rest. In the second place they were virtually the first to inquire into distinctions in the preparation of foods applied to the patient. They dealt more in cataplasms than did their predecessors; but they had a low opinion of the use of drugs (PHARMAKEIA), and of these they mostly employed those which are used for wounds. Incision and cautery they valued least of all.<sup>23</sup>

If true, this statement indicates that dietetics in Greek medicine was a relatively novel and partly extraneous element. At least it is in line with the other evidence which suggests a definite historical point of origin for dietetics.<sup>24</sup>

There is no reason why we should be sceptical of such statements, at least in their general tenor. Taken together, along with the evidence of the dietetic texts themselves, they suggest the appearance, from the mid-fifth century on, of various patent dietetic systems such as that of Herodicus.<sup>25</sup> These systems were associated with physiological theories which themselves had a backing in cosmological theories, as is the case in *On diet*.<sup>26</sup> The common characteristic of such theories would be a set of affinities between constituent elements in man and the same or similar elements in nature outside man, particularly in his foodstuffs, but also in the air, water, and earth which make up his environment. The dynamic of such systems would be the over-riding concept of equilibrium (ISONOMIA) between competing elements within man, and/or between these and external elements.

Such dietetic systems may have had a professional value. The possession of a technique which was not only complex in itself but which could also be rationally justified, would serve to increase both the confidence of the patient in the physician and

<sup>22</sup> Porphyrius on *Iliad* 11.514. According to L. Edelstein in A. F. von Pauly and G. Wissowa, *Realenzyklopädie der klassischen Altertumswissenschaft*, suppl. bd. 6, *Hippocrates*, Stuttgart, Metzler, 1935, col. 1329, the tradition goes back to the third century B.C. when Hippocrates was regarded as chiefly a dietetic physician.

<sup>23</sup> Quoted from H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker*, Zürich, Wiedmann, 1964, 3 vols., vol. I, p. 467, 5ff. Kranz regarded this as an excerpt from Aristoxenus, a pupil of Aristotle who wrote on the Pythagoreans, which if true would increase its evidential value. The attribution was accepted by L. Edelstein, *The Hippocratic Oath*, Baltimore, Johns Hopkins Press, 1943, p. 20, n. 49; but F. Wehrli, *Die Schule des Aristoteles*, Heft II, *Aristoxenos*, Basle, Schwabe, 1967, p. 58, is sceptical, and does not include it among the fragments of Aristoxenus.

<sup>24</sup> A Pythagorean origin for dietetics is often accepted by modern historians. See in particular J. Schumacher, *Antike Medizin*, 2nd ed., Berlin, W. de Gruyter, 1963, pp. 53-66 and 81-85; against Schumacher's view of the "scientific" contribution of the Pythagoreans to Greek medicine see W. Burkert, *Lore and science in ancient Pythagoreanism*, trans. E. L. Minar, Cambridge, Mass., Harvard University Press, 1972, p. 294, n. 88.

<sup>25</sup> That there were "many" writers on dietetics is stated by the author of *On diet* Bk. 1 ch. 1 (Jones, op. cit., note 1 above, vol. IV, pp. 226-227).

<sup>26</sup> See especially Bk. 1 ch. 2, *ibid.*, vol. IV, pp. 226-227: "I maintain that he who aspires to treat correctly of human regimen must first acquire knowledge and discernment of the nature of man in general—knowledge of its primary constituents and discernment of the components by which it is controlled."

the physician's confidence in himself. We know how important such a motive was to the fifth-century physician;<sup>27</sup> and that this was one of the functions of dietetics in particular can be deduced from the text called *On the art*.<sup>28</sup> The author of this work undertakes a defence of the thesis that "medicine is a (genuine) craft (TECHNE)" or that "the craft of medicine exists".<sup>29</sup> Much of his case is based upon a conception of medicine as essentially *dietetic*. He says: "If the medical art and medical men brought about a cure solely by means of medicaments (PHARMAKA), purgative or astringent, my argument would be weak. But as it is, the physicians of greatest repute obviously cure by regimens (DIAITEMATA) and by other substances,<sup>30</sup> which nobody—not only a physician but also an unlearned layman, if he heard of them—would say do not belong to the art."<sup>31</sup> The "argument" to which he refers here is the statement that even where invalids have recovered without the aid of a physician, it was because, unwittingly, they did or refrained from doing something which the physician, if consulted, would himself have counselled or advised against. If this "something" was the taking of a PHARMAKON, then clearly the author's argument would indeed be "weak", because in many or even most cases of apparently spontaneous recovery such items would not have been taken. (His thesis is that there is no such thing as "spontaneous", i.e. causeless, recovery, since every effect has a cause, and while such causes may be applied accidentally and in ignorance, it is only the expert who can apply them with knowledge.) In fact he specifies the kind of cause he means in the preceding chapter: "[the apparently spontaneous recovery] was caused in fact by fasting or by an abundance of food; by excess of drink or by abstinence therefrom; by violent exercise or by rest; by sleep or by keeping awake."<sup>32</sup> These are all dietetic procedures. Thus the identification of medicine with dietetics, and its materials and procedures with those of dietetics, is the very keystone of his argument. In our daily life we use all the time the means which a physician would use in therapy. But what is it that makes these things a cause of recovery? Here the author appeals to that kind of physical theory which we conjectured above must have been a common element in dietetic systems. "Seeing then that there is nothing that cannot be put to use by good physicians and by the art of medicine itself, but in most things that grow or are made are present the essential substances of cures and of drugs, no patient who recovers without a physician can logically attribute the recovery to spontaneity."<sup>33</sup> This statement is related to other state-

<sup>27</sup> For the means which the Greek physician adopted to enhance his prestige, see L. Edelstein, *PERI AERON und die Sammlung der hippokratischen Schriften*, Berlin, Springer, 1931, sections of which are reprinted and translated in *Ancient medicine. Selected papers*, edited by O. Temkin and C. L. Temkin, Baltimore, Johns Hopkins Press, 1967. See pp. 65–88 and 87–110.

<sup>28</sup> Jones, op. cit., note 1 above, vol. II, pp. 190–217. On the work in general see especially Edelstein, *Ancient medicine*, op. cit., note 27 above, pp. 101–104. F. Heinemann, 'Eine vorplatonische Theorie der TECHNE', *Museum Helveticum*, 1961, 18: 105–130, locates this text very clearly in the context of fifth-century discussions on the status of crafts.

<sup>29</sup> It is useful to remember, in connexion with this anxiously debated question, that the predicative and existential uses of the verb "is" had not yet been clearly distinguished, and that much mileage was gained in sophistic debate out of the consequent ambiguities.

<sup>30</sup> So Jones translates, but what could such substances be, since drugs are here excluded by the author's argument? The word is EIDEA, "forms", so perhaps the meaning is "forms of treatment", i.e. surgery, etc.

<sup>31</sup> *On the art*, ch. 6, Jones, op. cit., note 1 above, vol. II, pp. 198–199.

<sup>32</sup> *Ibid.*, ch. 5, p. 197.

<sup>33</sup> *Ibid.*, ch. 6, p. 199.

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ments in the Hippocratic Corpus which affirm a kinship between substance or "powers" in our bodies and things outside our bodies, the earth, plants and animals, and the food and drink derived from these.<sup>34</sup> The theoretic basis of all such statements is a theory of physical elements, not necessarily that of Anaxagoras, but like that of Anaxagoras.

As we saw, both internal and external evidence agree that dietetics is a relatively recent phenomenon in Greek medicine, which made its appearance at some time during the fifth century. The passage from *On the art*, analysed above, is valuable confirmatory evidence. It shows how close the association is between dietetic medicine and speculation about the physical world; and, equally significantly, between dietetic medicine and dialectical discussion about the existence and the status of the craft of medicine. Both such speculation and such discussion, particularly the latter, are salient characteristics of the second half of the fifth century.

#### THE ORIGINAL STRUCTURE OF GREEK DIETETICS<sup>35</sup>

Under the most modern buildings of the fifth century, and indeed often incorporated into their very structure, are to be found the elements of other and earlier buildings. It

<sup>34</sup> Such a theory is implied in *Ancient medicine*, ch. 14; and is explicit in *Diseases 4*, ch. 34, (VII, 544–548 Lj; R. Joly, *Hippocrate de la génération*, Paris, Éditions Les Belles Lettres, 1970). On the last passage see I. M. Lonie, 'On the botanical excursus in *De natura pueri*', *Hermes*, 1969, 97: 397–399. C. W. Müller, *Gleiches zu Gleichem*, Wiesbaden, F. Steiner, 1965, pp. 129–137, argues convincingly that the source of the theory in *Diseases 4* is Anaxagoras.

<sup>35</sup> Since in this section I shall use both *Ancient medicine* and *Regimen in acute diseases* for evidence on the medicine which preceded the writings of these texts, a discussion of their date is very necessary. It is convenient to deal with both together. Both texts are dated by general consensus towards the end of the fifth century. Although H. Diller proposed a date c. 360 B.C. for *Ancient medicine* ('Hippokratische Medizin und attische Philosophie', *Hermes*, 1952, 80: 385–409 = *Kleine Schriften zur antiken Medizin und Naturwissenschaft*, Berlin, W. de Gruyter, 1973, pp. 46–70) his suggestion does not seem to have been generally accepted. His arguments that the text can and must be assigned to a particular stage in epistemological developments between Plato and Aristotle are examined and rejected by J. H. Kühn, *System- und Methodenprobleme im Corpus Hippocraticum* (*Hermes Einzelschrift*, Heft 11, Wiesbaden, F. Steiner, 1956) pp. 46–56. Heinimann, op. cit., note 28 above, p. 112, n. 32, dates it around 400 B.C. on stylistic and lexical grounds; while the main thesis of his article 'would tend to place it firmly in the context of intellectual developments at this time. G. E. R. Lloyd Who is attacked in *Ancient Medicine*?', *Phronesis*, 1963, 8: 108–126, dates it to the late fifth or early, fourth century, on the grounds that the philosophico-medical views attacked in it are most like those of Philolaus. Festugière, op. cit., note 9 above, dated it 430–420 B.C.

*Regimen in acute diseases* is probably near it in date. The two treatises show close similarities in several passages, which suggest that one has borrowed from the other. On various grounds it has been dated to the last decade of the fifth century (G. H. Knutzen, 'Technologie in den hippokratischen Schriften PERI DIAITES OXEON etc.', *Abh. Akad. Wissensch. Mainz, Geistes Sozialwissenschaft. Klasse*, 1963, 14: p. 1380; (but see K. Deichgräber, *Die Epidemien und das Corpus Hippocraticum*, 1971, "Nachwort", p. 181); I. M. Lonie, 'The Hippocratic treatise PERI DIAITES OXEON', *Sudhoffs Archiv*, 1965, 49: 50–79; cf. Joly, op. cit., note 4 above, p. 22. To some extent these arguments depend upon assumptions about the existence of medical schools with distinct doctrines, upon traditional beliefs about the "genuine" Hippocrates, and upon the tendency noted by G. E. R. Lloyd ('The Hippocratic question', *Classical Quarterly*, 1975, NS 25/2: 171–192) to remark consistencies while ignoring inconsistencies between the doctrines of different texts.

The reader would do right to be sceptical of all such attempts to date Hippocratic texts, and, especially if he is not a classical scholar, his suspicions may well be aroused by the way in which conjectural datings tend to cluster round that "annus mirabilis", 400 B.C. But although it is true that classical scholars do not possess a special apparatus for dating literary works, two points may fairly be urged in their favour. (1) Arguments from style, for this period at least, are not as subjective as might be assumed: Greek prose style changed rapidly in the fifth and fourth centuries, and the factors

would be strange if there were not some analogy in Greek medicine. However modern dietetics might seem to the medical writers of the fifth century, it is unlikely that it was completely new, and that there was not some element in existent medicine on which these elaborate dietetic systems were built. Did internal medicine before the fifth century consist only of the few purges whose simplicity and paucity are regarded with contempt by the author of *Regimen in acute diseases*? It is true that in the sparse references to medicine in the early fifth and the sixth centuries there is none to dietetic therapy. Yet not even the author of *Regimen in acute diseases* says that “the ancients” (HOI ARCHAIOI) wrote nothing at all about diet, but only that what they did write was not worth mentioning—which from the pen of a polemic writer may amount to a considerable concession.

The Hippocratic writers very rarely give direct information about the previous history of medicine. One who does is the author of *On ancient medicine*. Like the author of *On the art* he is preoccupied with the question of the status of the craft of medicine, although from a different point of view. In chapter 5 he actually asks how the craft (TECHNE) of medicine—medicine, that is, “which has a name and which has craftsmen (TECHNITAI)” —originated. He answers:

In my opinion, as I said at the beginning, nobody would have even sought for medicine, if the same ways of life had suited both the sick and those in health. . . . But those who sought for and discovered medicine . . . in the first place I think lessened the bulk of the foods, and, without altering their character, greatly diminished their quantity. But they found that this treatment was sufficient only occasionally, and although clearly beneficial with some patients, it was not so in all cases, as some were in such a condition that they could not assimilate even small quantities of food. As such patients were thought to need weaker nutriment, slops (TARUPHEMATA) were invented by mixing with much water small quantities of strong foods, and by taking away from their strength by compounding and boiling. Those who were not able to assimilate them were refused even these slops, and were reduced to taking liquids (POMATA), these moreover being so regulated in composition and quantity as to be moderate, and nothing was administered that was either more or less, or less compounded, than it ought to be.<sup>66</sup>

The writer is of course conjecturing, and his conjecture is tendentious. He is opposed to those who introduce “hypotheses” into medicine, and he wishes to propagate the view that medicine is after all a simple and empirically verifiable matter. It is analogous to cooking, but differs from it in being in the hands of “experts” (TECHNITAI) whose expertise rests upon the fact that they are required to deal with more complex cases than is the layman who is able to cook his own food without making himself ill, and who have discovered a definite principle for dealing with such cases. Thus the author’s tendency is to present the view that medicine is chiefly a matter of dieting the sick. This is clearly an exaggeration, for which we must make due allowance. But he could not have hoped for any success whatsoever in presenting such a view, if the medicine familiar to his audience had not been largely a matter of diet, and if the administration of diet had not been a large part of the physician’s therapeutic task. Such a view may be difficult for us, with our assumptions about the very subsidiary

causing this change as well as the criteria by which it is measured can be described with a certain amount of precision. (2) Precisely the same is true of the intellectual patterns of the period. Our “paradigm” for this may eventually be subverted, but until it is, such texts as *Ancient medicine* make good sense if they are dated around 400 B.C. and less sense if dated earlier or later by forty years.

<sup>66</sup> Ch. 5, Jones, op. cit., note 1 above, vol. I, pp. 20–23.



### *A structural pattern in Greek dietetics*

role of diet in therapy. But as we shall see, there are cases in the Hippocratic texts in which the treatment recommended, even for acute diseases, is exclusively dietetic; nor is there anything to suggest that such cases are regarded as in any way different from cases in which the intervention is, by our standards, more positive.

The writer further assumes that while the diet of the healthy consists in so treating and blending the varieties of raw foodstuffs that the human constitution can "master" it, that is digest it, the dieting of the sick consists in moderating and grading nutriment so that it is presented in different forms which are suitable to the case. The three forms are solid food (SITION, pl. SITIA), slops or gruel (RUPHEMA, pl. RUPHEMATA, verbal forms RUPHEIN, RUMPHANEIN), and drinks (POTON, pl. POTA; or POMA, POMATA). These forms of presentation are, by the author's account, as old as medicine itself.

SITION, which means food in general, and especially cereal food as opposed to meat or other seasoning, and POMA or POTON, "drink", are commonplace terms. RUPHEMA is more interesting. It is derived from the verb RUPHEIN, a vivid word which tends to occur in poetic or expressive contexts, and which means to lap or gulp or suck one's food down, "as an ox does" according to one author.<sup>37</sup> RUPHEMA refers to that which is the object of such a manner of eating or drinking: it stands to the verb as English "sop" stands to "sip" or "sup".<sup>38</sup> The word does not seem to occur outside medical contexts, and the particular preparations to which it is applied in medical writings have little similarity in their composition and preparation to items of normal Greek cuisine. It is therefore reasonable to regard it as a technical term invented for such contexts. Taken together, the three words SITION POTON RUPHEMA behave as a set or group the function of which is to classify items of diet in terms of their consistency. They may be regarded as rubrics in descriptions of therapy in which it is expected that they will regularly recur: "for his drink let him take . . . for his gruel let him take . . . for solid food let him take . . .".<sup>39</sup>

The author of *On ancient medicine* assumes that medicine is and always has been largely a matter of dieting the invalid, and that the essence of such dieting, or rather its structure, is a gradation of nutriment in terms of consistency. Is there any evidence which suggests that this was indeed the case?

One valuable source of information about the traditional or routine practice of early Greek medicine is the treatise *On regimen in acute diseases*. This treatise is

<sup>37</sup> Xenophon, *Anabasis* 4.5.32.

<sup>38</sup> The Latin equivalent is *sorbitio*, which occurs regularly in Caelius Aurelianus, among other medical writers, and is presumably Caelius' translation of RUPHEMA in Soranus. There is no English equivalent, though "gruel" is the usual translation and is adopted here. In German one can say "schlürfen" and therefore "Schlürfgetränk", which R. Wittern adopts in her translation of *Diseases 1* (Renate Wittern, *Die hippokratische Schrift De Morbis 1*, Hildesheim and New York, Olms Verlag, 1974, pp. 83 and 198).

<sup>39</sup> RUPHEMA, as will become clear from what follows, is a *category* of food, not in itself a food: Ch. Daremberg, *Oeuvres Choiesies d'Hippocrate*, Paris, Labé, 1855, pp. 510-511: "un terme générique servant a designer toute espèce de bouillie, et plus particulièrement la bouillie d'orge." It is this last fact (which however only applies to *Regimen in acute diseases*) which has often caused confusion over the term, a confusion which has obscured its structural significance in diet. This significance is clear enough, for example, in Aristotle, *Problems* 1.37, 863B: "The gruel (RUPHEMA) which is given to a fevered case should be such as to provide nutriment in small amount and to have a cooling effect. Peeled barley (PTISANE) has this property."

incomplete, and was so in antiquity, a fact indicated by the diversity of opinion about its proper title: in our earliest manuscripts it is variously called *On barley-gruel* (PERI PTISANES), *Against the Cnidian sentences* (PROS TAS KNIDIAS GNOMAS), as well as by the title by which we know it and which was favoured by Galen. The author begins his work with a criticism of "the authors of the *Cnidian sentences*", which is now lost (although it may have been the source of some extant works in the Corpus), and he continues to make intermittent critical remarks about "my predecessors" (ch.51), "the men of a previous time" (chapters 3, 5, and 17), who seem to be identical with these authors, but also about "the physicians" (chapters 7 and 8), who seem to be associated in his mind with the authors of the *Cnidian sentences*. In the main body of the text the author lays down principles for the correct administration of gruels (RUPHEMATA), particularly barley-gruel (PTISANE),<sup>40</sup> of drinks (POMATA) and of baths, and then inconsequently breaks off. What follows is a haphazard series of chapters, regarded by Galen as spurious, and so labelled in the manuscripts, but which may be a collection of notes by the author for an intended continuation. At any rate these chapters deal with therapeutic means and procedures, and they show considerable consistency with the principles laid down in the first part.<sup>41</sup>

Clearly *Regimen in acute diseases* is a critical and polemic work, a fact which has not always been sufficiently regarded. For historical and pedagogical reasons, it was always treated with a great deal of respect. It is one of those few works which have almost unanimously been regarded as "genuine" writings of Hippocrates; its study used to be a significant part of the medical curriculum;<sup>42</sup> and, along with the *Aphorisms*, it is still usually treated as the most important source for "Hippocratic" or "Coan" therapy, as opposed to such therapeutic texts as *Diseases 2*, *Diseases 3*, and *Internal affections*, which are regarded as "Cnidian".<sup>43</sup> The respect accorded to *Regimen in*

<sup>40</sup> This was the most popular of all the RUPHEMATA. Its virtues are described in *Regimen in acute diseases* ch. 10 and ch. 15. The very useful article by E. Darmstaedter, 'Ptisana', *Archeion*, 1933, 15: 181-201, describes his own experiments in the preparation of this and various other forms of gruel mentioned in the medical texts; and adds comments on their medical advantages.

<sup>41</sup> See Lonie, *op. cit.*, note 35 above, and earlier discussions mentioned there. In what follows I shall assume that both parts belong together, and call the second part *Regimen in acute diseases 2*. It is not printed in Jones, but may be read with French translation in Joly's edition.

<sup>42</sup> Dr. Andrew Cunningham, who is working in this area, has been of great help to me in discussing this and related topics, and in showing me some of his forthcoming work on medical curricula in the sixteenth century.

<sup>43</sup> See I. M. Lonie, 'The Cnidian treatises of the *Corpus Hippocraticum*', *Classical Quarterly*, 1965, N.S. 15/1: 1-30. Grensemann, *op. cit.*, note 21 above; J. Jouanna, *Hippocrate et l'École de Cnide*, Paris, Éditions Les Belles Lettres, 1975. W. D. Smith, 'Galen on Coans and Cnidians', *Bull. Hist. Med.*, 1973, 47: 569-585, has expressed scepticism about the hypothesis of schools in early Greek medicine. I am now inclined to think that understanding of *Regimen in acute diseases* is greatly obscured by the assumption that there were two separate schools, and by the global descriptions of Coan medicine on the one hand and Cnidian medicine on the other, which this assumption has tended to generate (Coan medicine treats the patient, Cnidian medicine treats the disease; Coan medicine regards the patient as a whole, while the Cnidians tend towards a local pathology and a local therapy). When such descriptions are confronted with the actual texts, we find elements which seems to contradict them: such elements are usually explained away as Coan influence upon Cnidian texts, and so the hypothesis is saved for another day. They would be more economically explained by the large area of common ground shared by the author of *Regimen in acute diseases* with other therapeutic texts in the Corpus, whether we regard these latter as "Cnidian" or simply as representing mainstream practice. See the sensible remarks on this point by Joly in the introduction to his edition, *op. cit.*, note 4 above, pp. 18-20.

*acute diseases* has somewhat obscured its potential value as a source for the common assumptions and practice of medicine in the author's time.<sup>44</sup> Yet if we subtract from it those points for which the author specifically claims originality, the remainder is still very large—nor need we assume that his originality is any greater than he claims or implies that it is.<sup>45</sup>

Among the criticisms which the author makes of the authors of the *Cnidian sentences* is that they wrote "nothing worthy of attention" about diet. At first sight this remark seems to be consistent with evidence from Plato and others that dietetics in the fifth and fourth centuries was a relatively new thing in medicine. As we have seen, this may be true of the systematic application of elaborate regimens both in disease and in health, such as Plato attributed to Herodicus of Selymbria, and such as are associated with physiological theory by the author of the treatise *On diet*, who claims originality in this. However, the author of *Regimen in acute diseases* is not concerned with such elaborations. The diet with which he deals is a relatively simple therapeutic diet, applied to the treatment of acute diseases: it is this in which he finds the writers of the *Cnidian sentences* inadequate. Since we do not possess that work, we cannot tell whether his statement is true, partly true but exaggerated, or merely false. What we can see however is that the author operates with a variety of therapeutic and dietetic concepts and methods, and that these are represented in a language with which he regards his audience as perfectly familiar, and feels no need to define or explain.

We can at least assume that the predecessors whom he criticizes knew what diet was: not an altogether trivial point, since it implied familiarity with a distinction between dietetic and other forms of therapy, such as purging, bleeding, other kinds of surgery, and the application of external remedies. We can see the beginning of the later formal division of medicine into dietetics (DIAITETIKE), medication (PHARMAKEUTIKE), and surgery (CHEIROURGIA) which Celsus knew, and which is found as early as Aristoxenus and is implied in the *Oath*.<sup>46</sup> The Hippocratic writers sometimes explicitly draw a distinction between medication (PHARMAKEIA: perhaps in the restricted sense of purging) and diet.<sup>47</sup> But there are also passages in which the word

<sup>44</sup> Among the features of nosology and therapy which the author assumes are familiar to his audience, and some of which are attributed directly or indirectly to his predecessors, the authors of the *Cnidian sentences*, are the following. Nosology: the distinction between acute and non-acute diseases (ch. 2); a nomenclature of diseases (which he himself finds acceptable), including *pleuritis*, *peripneumonia*, *causus*, *phrenitis* (directly attributed to "the ancients" in ch. 5); and the distinction between continuous fevers and others (*ibid*). Therapy: a considerable variety of therapeutic means and items, including purging, venesection (ch. 16, and as a recognized means of alleviating pain, ch. 22); various fomentations (ch. 21); fasting (the universal and unintelligent application of which is criticized in ch. 26); the knowledge of various pharmaceutical items used as purges (ch. 23). These are cited here simply *exempli gratia*: the list could be expanded (also in respect of physiology: the two constitutional types based on the humours bile and phlegm seem to be regarded as common knowledge in chs. 34 and 61); and it does not include the dietetic means and procedures which will be discussed below. Taken together such items indicate the existence of a relatively complex rational medicine which is already well established by or before the end of the fifth century.

<sup>45</sup> A point made by Joly, *op. cit.*, note 4 above, p. 17.

<sup>46</sup> Celsus, *De Medicina*, Proemium 1.1; for the *Oath*, see Edelstein, *op. cit.*, note 23 above, p. 20, n. 49; for Aristoxenus, see the passage quoted from Iamblichus above, and note 23.

<sup>47</sup> For the existence of the distinction in the Hippocratic corpus see W. Artelt, *Studien zur Geschichte der Begriffe "Heilmittel" und "Gift"*, Leipzig, 1937, pp. 53–54, and Goltz, *op. cit.*, note 2 above, pp. 297–302, who cite the following examples: *Diseases of women*, 1.66 (VIII, 136 Li.); *Internal affections* 17 (VII, 208); *Affections* 22 (VI, 234) and 2 (VI, 210); *Places in man* 45 (VI, 340, 3–5).

DIAITA is, loosely as it seems to us, applied to the whole of treatment, even in cases where that treatment includes purging.<sup>48</sup> This may be simply carelessness, but it is at least compatible with a kind of medicine which is predominantly dietetic.

The author also assumes general familiarity with different items of diet, such as the gruel made from peeled barley (PTISANE) in its various forms, other gruels, the drinks known as "hydromel" (MELIKRETON), "oxymel" (OXYMELI), and the different kinds of wine which were applied in diet. His general criticism of his predecessors is not that they were unaware of these means, but rather of the arbitrary preferences of individual physicians for one or other of these means exclusively, and for their rigid application of it in all circumstances:

For instance, it has not been ascertained why in acute diseases some physicians think that the correct treatment is to give unstrained barley-gruel throughout the illness; while others consider it to be of first-rate importance for the patient to swallow no particle of barley, holding that to do so is very harmful, but strain the juice through a cloth before they give it. Others again will give neither thick gruel nor yet juice, some not before the seventh day, others at no time until the disease reaches a crisis.<sup>49</sup>

This divergence among individual physicians brings the craft (TECHNE) of medicine into general disrepute in the eyes of the lay public; the same kind of disrepute, and for the same reasons, in which soothsaying, which is not regarded as a TECHNE at all, is held.<sup>50</sup>

A hasty reading of *Regimen in acute diseases* has sometimes led to the assumption that the originality of the author's method lay in the adjustment of diet to the stages through which the disease passes, such stages being governed by the process of concoction of the humours, and marked by the outward signs of concoction, particularly around the crisis. One factor which contributes to this assumption is the difficulty of separating what is truly idiosyncratic in the author's views from what is common-

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Add *Affections* 20 (VI, 230, 3-4); *Regimen in acute diseases* 2. 20 and 56 (pp. 78, 2-3 and 93, 15-19 July); *Diseases of women* 1.16 (VIII, 54, 10). A good example in *Affections* 20 (VI, 230, 2-6): "It benefits these cases [i.e. of swollen spleen], if they seem to be in an unpurged state, to purge the head and the rest of the body. If they do not require purging (PHARMAKEIA), then diet them (DIAITAN) drying and attenuating the bodies of phlegmatic types with food and drinks and emetics and a great deal of exercise and walking." (Emetics used in *diet* are not regarded by these authors as the same as the emetics, such as white hellebore, which were used in purging (KATHARSIS) and which were called PHARMAKA; nor is their effect regarded as the same. See Artelt, op. cit., p. 53).

Goltz remarks that this distinction between PHARMAKEIA and DIAITA seems to be still emergent in the Hippocratic Corpus (op. cit., note 2 above, p. 300). It may therefore be significant that most of the texts in which it occurs have for various reasons been regarded as relatively late. On *Affections*, see Jouanna, op. cit., note 43 above, pp. 263-306; on *Internal affections*, see *ibid.*, pp. 176-260; Grensemann, op. cit., note 21 above, pp. 171-175. *Diseases of women* 1.66 belongs to one of the later layers in the gynaecological works identified by Grensemann, pp. 115-130 (one of the criteria for identifying this layer is in fact the frequent use of the word DIAITA). *Places in man* was dated to the second century by K. Schubring, 'Zu Aufbau und Lehre der hippokratischen Schrift *De locis in homine*', *Berliner Medizin*, 1964, 15: 739-744. The distinction is also implied by fragment 139 of Diocles of Carystus (mid-fourth century?). See F. Kudlien, 'Probleme um Diokles von Karystos', *Sudhoffs Archiv*, 1963, 47: 456-464; "One should not apply those emetics which are drug-like (PHARMAKODE) and drastic, but should use those domestic ones which belong to ordinary diet (DIAITA)."

<sup>48</sup> Goltz, op. cit., note 2 above, p. 288 and note 211.

<sup>49</sup> Jones, op. cit., note 1 above, ch. 7.

<sup>50</sup> *Ibid.*, ch. 8.

place, in the absence of any independent evidence for the commonplace. It is true that the so-called Cnidian texts do not set out their recommended therapies with constant reference to the outward signs of coction, and that words referring to the *theory* of coction are very rare in them.<sup>51</sup> But even the author of *Regimen in acute diseases* does not refer to the theory as something new. The authors of the Cnidian texts were at any rate familiar with it, and if they do not refer to it frequently, this may be either because they expect the physician to take account of it as a matter of course, or because there is a real difference of emphasis on this point between their therapeutic method and that of the author of *Regimen in acute diseases*.<sup>52</sup> But in any case it is clear from the passage quoted above that the conventional medicine of the author's time took account of the different stages or periods of a disease: that physicians worked on the assumption that acute diseases will show a crisis, that the occurrence of this crisis has a meaningful relation to certain days such as the seventh, and that the administration of diet should be governed by critical days and the occurrence of crises. On these points the author of *Regimen in acute diseases* is certainly not original: on his own evidence they are all features of the medicine existing at, and presumably before, his time. As we shall see, the universal evidence of the Hippocratic collection is that the graduated diet, which

<sup>51</sup> Such words are absent from *Diseases 2* and *Internal affections*, but occur in *Diseases 1* and *3* and in *Affections*. Cf. Jouanna, *op. cit.*, note 43 above, p. 434 and note 3.

<sup>52</sup> My own comparison between the principles enunciated in *Regimen in acute diseases* and the therapeutic practice of one text, *Diseases 2* (selected as, hypothetically, the earliest of these texts and therefore the closest to original "Cnidian" practice) shows neither a negative nor a positive correlation in this respect. In some cases the author of *Diseases 2* makes his therapy dependent upon signs indicating coction or absence of coction (e.g. ch. 12 (VII, 20, 23–22.2. Li.); 26 (42,15); 27 (44, 5–9; 9–16; 18–22); 40 (56, 16 and 20–58, 5.); 42 (66, 16); 64 (98, 15)). In these passages the author does not specifically refer to coction, but he makes his therapeutic prescriptions conditional upon prognostic signs, such as thickness of urine or of sputum, or the appearance of an abscess or swelling. But in other cases he does not. In this respect the difference between *Regimen in acute diseases* and *Diseases 2* appears to be a difference of detail rather than a difference of principle (so too Joly in the introduction to his edition, *op. cit.*, note 4 above, p. 21; in p. 20 and notes he emphasizes the factor of conditionality in the therapy of *Diseases 2*). The following example seems to me typical of the position of *Diseases 2*: in ch. 40, 56, 20ff. the author enjoins against purging when the belly and feet are cold, and the tongue is rough. *Regimen in acute diseases* ch. 20 and 2.13 advises against giving *gruel* when these signs are present, which indicate an approaching "paroxysm", and 2.17 advises against *purging* in a similar though not identical state of disturbance. However, the passage in *Diseases 2* does recommend gruel and drink, to which *Regimen in acute diseases* is emphatically opposed. Here then is a contradiction in detail between the two texts, but in the general principle, that treatment should be made dependent upon the prognostic signs which indicate approaching paroxysm, the texts are in complete agreement. Yet it is this principle which has always been regarded as the characteristic of Coan, as opposed to Cnidian medicine. R. Boncompagni, 'Concezione della malattia e senso dell' individualità nei Testi Cnidi del Corpus Hippocraticum', *La Parola del Passato*, 1972, 27: 209–238, who had analysed the Cnidian texts from this point of view, concludes that the difference between them and *Regimen in acute diseases* is one between the haphazard and occasional, and the systematic application of a principle. But such a concession already weakens the ground considerably for supposing an essential difference between the two schools. In fact the instances given above are not compatible with the hypothesis that *Regimen in acute diseases* represents a novel system of therapy formed in opposition to an older, "Cnidian" practice which is reflected in *Diseases 2*. If "Coan" therapy is distinguished from "Cnidian" therapy by being prognosis- and patient-oriented while "Cnidian" therapy is diagnosis- and disease-oriented, then it is difficult to explain such a chapter as *Diseases 2.27*, in which the whole of the treatment is made conditional upon the course of the disease as this is indicated by various prognostic signs. To explain such passages as subsequent influence from Cos would be blatantly circular. Yet if a fundamental difference of principle between *Regimen in acute diseases* and such Cnidian texts as *Diseases 2* cannot be demonstrated, then there is no other ground for supposing that there was a difference in doctrine between the two schools.

the author of *On ancient medicine* assumes to be as old as medicine itself, is correlated with the stages of disease preceding and following crisis.

The division of the items of diet into SITIA, RUPHEMATA and POTA is taken for granted by the author of *Regimen in acute diseases*, and indeed provides the basic structure of his treatise. He discusses first the use of RUPHEMATA (chs10–48: in fact PTISANE is the only form of RUPHEMA which he discusses, since he uses it as an example to make certain points of his own concerning the administration of diet); second, POTA (chs.49–64: wine, hydromel, oxymel, vinegar, water and other drinks, in that order). There is however no section on solid foods, SITIA, but instead a section on baths (ch.65–end). This omission is at first sight problematic. But the author's topic is the treatment of acute diseases, and, as we shall see, the general practice of the Hippocratic writers was to give no solid food until after the crisis, and this is a period which the author of *Regimen in acute diseases* appears to exclude from his discussion.<sup>53</sup> Apart from the general arrangement of the treatise, he mentions the distinction specifically in a number of passages. In ch.26 he criticizes "the physicians . . . for they all wish at the beginning of a disease to reduce the patient by starvation for two, three, or even more days before administering gruel (RUPHEMATA) and drink (POMATA)" (trans.Jones). As indicated above, he is for the most part concerned with drink and gruel alone (chs.19 and 20; ch.60) but the full range drink-gruel-solid food is mentioned in ch.44.<sup>54</sup> The distinction is also recurrent in the second, traditionally "spurious" part of *Regimen in acute diseases*: ch.11, p.73, 14–22 Joly: "diet the patient with gruel at first, and hydromel for a drink; subsequently with solid food (SITIA),—boiled fish, a little dilute wine at nightfall, and during the day dilute hydromel." (This passage partly corresponds to ch.19 of the first part of *Regimen in acute diseases*. Compare further, from the second part of *Regimen in acute diseases*, ch.13 (p.74, 9–10 Joly); ch.16 (p.76, 1–2 Joly); ch.27 (p.81, 17–20 Joly) and ch.54 (p.92, 17–22). This last passage in a way sums up the whole message of *Regimen in acute diseases*:

The essence of the art of diet (DIAITETIKE) is to observe and be on one's guard, during lengthy illness, for the increase and remission of fever, so as to be fully prepared for the times when it is not proper to administer solid foods (SITIA), and to know when they should be administered and when it is safe to do so. This is when it is as far removed as possible from the increase (sc. of fever).

This is a particularly valuable passage. The rather restricted sense which the author gives to dietetics corresponds more closely to the dietetics which we find in the therapeutic texts than it does to the dietetics of *On diet*, which also includes "diet of the healthy" (DIAITA HYGIEINON), or "hygiene". This difference may imply a historical development, as I shall suggest later.

To summarize at this point: the commonplace practice of medicine which we see reflected in *Regimen in acute diseases*, and which we must distinguish from the technical

<sup>53</sup> His attitude may be illustrated from 2.9 ad fin., where the patient is regarded as being in safety, ASPHALEIA, after the crisis.

<sup>54</sup> SITIA may be mentioned along with RUPHEMATA at the end of ch. 39, but the reading is doubtful.

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modifications which the author himself proposes, was to impose a very sparse diet upon the patient up till the time of crisis. There was evidently a tendency by some physicians to starve the patient altogether at the beginning of the illness (a tendency against which the author protests), and in any case it was assumed that the diet of the patient in the critical period should consist only of liquids and gruels. Physicians varied in their predilection for this or that form of gruel, and for the length of time during which it should be administered; but they seem to have shared the assumption that gruel in at least some form should be given, and that its administration should be determined by the expected occurrence of a crisis. Thus what the author of *Regimen in acute diseases* says and implies about his contemporaries and his predecessors is consistent with what the author of *Ancient medicine* says, namely that the dietetic structure fluids-gruels-solids is deeply established in Greek medicine.

#### THE PRESENCE AND FUNCTION OF THIS STRUCTURE IN THERAPEUTIC TEXTS

My purpose in the third part of this paper is to illustrate (i) the omnipresence of this structure in the therapeutic texts, and (ii) its actual use, (a) in cases in which the treatment is simply dietetic, and (b) in cases where the treatment is complicated by non-dietetic means. The presentation of this material is necessarily tedious, and requires some words of justification. It is at first sight difficult to make "sense" of the therapies in the Hippocratic Corpus, and the historians have not usually attempted to do so. So far as they have discussed these texts at all, they have contented themselves with selective lists of the therapeutic means which appear in them, pharmacological, dietetic, and surgical.<sup>55</sup> But such lists, in the absence of any attempt to comprehend any rationale which may lie behind them, are of scant use to the reader, who would be more profitably occupied in reading the texts themselves. Or, when historians have attempted explanations, these consist for the most part in vague references to humoral theory. This is unsatisfactory, both because it begs an important historical question, which is as yet unanswered, and because as soon as one attempts seriously to apply humoral theory to very elaborate preparations or diets, one finds it extremely limited as an explanation. The only resource then is to label individual items or individual procedures as "empiric" and to turn to more rewarding topics. It is of course true that therapeutics forms the most arcane part of the material with which the historian of ancient, and not so ancient medicine has to deal. It is arcane because the historian usually lacks the wide range of information—much of it psychological and cultural—

<sup>55</sup> This was the approach of the seventeenth- and eighteenth-century historians, such as Le Clerc, Schulze, and Sprengel, who were familiar with therapeutic systems which still had a great deal in common with the ancient systems from which they were ultimately derived. They could therefore afford to take a pragmatic attitude to the history of therapy, and were interested in what "discoveries" the ancients had made (cf. Daniel Le Clerc, *Histoire de la médecine*, Geneva, 1696, "Avertissement"). This approach is not open to the twentieth-century historian who, if he is of a positivist turn of mind will be unsympathetic to or even impatient with ancient therapies, and will have no wish to write what he can only regard as a catalogue of errors (so E. H. Ackerknecht describes this attitude: *Therapie von den Primitiven bis zum 20 Jahrhundert*, Stuttgart, F. Enke, 1970, p. 1.). However, the work of Dietlinde Goltz, op. cit., note 2 above, has opened up new possibilities for the understanding of Hippocratic therapeutics. Dr. Goltz's knowledge of the Babylonian literature uniquely provides her with an objective standpoint, and also with a set of descriptive categories which the purely classical philologist lacks. The present essay is directly inspired by Dr. Goltz's approach, which may be described as structural.

which largely determines therapies, even where there is an articulate theory behind it. In areas such as early Greek medicine where our sources of information are highly fragmentary, one might well despair of making any sense of therapy at all. What one can do, however, is to look for recurrent patterns in the physician's procedure; and if one finds them, one can at least give an external description of therapy, a thing which, though humble, is something better than a bad *précis* or unfounded conjecture. In this sense, what follows is intended as a contribution to the understanding of early Greek therapy, as well as to its history.

(i)<sup>56</sup> *Diseases* 2, ch. 27 (7.44, 15–18 Li.): “[in a form of angina] if the patient survives for five days and the fever remits, let him take gruels (RUPHEMATA) for the first few days. When he begins on solid food (SITIA), he should eat those which are as oily and fatty as possible . . .” Ibid., ch. 51 (7.80, 4–6. The disease is called phthisis of the spine): “for as long as he is taking the milk diet, let him take a gruel of spelt (CHONDRON RUPHEIN) for his evening meal, but abstain from solid food (SITIA). When the milk diet finishes, restore him with solid food (SITIA), beginning with what is most laxative. . . .” Ibid., ch. 67 (7.102, 13–20. “The fever called murderous”): “do not administer either solid food (SITION) or gruel (RUPHEMA) for seven days . . . [after the ninth day] let him take solid food (SITION) in very small quantity. . . .” *Diseases* 3, ch. 10 (7.130=p. 9, 3–4 Potter): “[In angina] let him take as a gruel (RUPHEIN) the juice of peeled barley. When the disease remits and the patient takes solid food (SITIA). . . .” Ibid., ch. 11 (7.132=p. 9, 19–21 Potter): “[In icterus] when he retires, give the hydromel prescribed above, and wine, and gruels (RUPHEMATA). But he should not abstain from solid food (ME ASITEEIN).”

These passages already illustrate the extent to which gruels and solid foods are contrasted, and considered as forms of alimentation appropriate for different stages of the disease, particularly stages marked by the occurrence of a crisis and/or remission of fever. The function of the words as anticipated rubrics is also, I think, apparent in the first and the penultimate passages.

*Internal affections* ch. 38 (7.260, 19–20): “[In a case of icterus] apply the same treatments as in the previous case: the same purgatives (PHARMAKA), vapour baths, baths, foods [the word here is EDESMATA], drinks, and gruels (RUPHEMATA).”

<sup>56</sup> The texts from which my material is drawn are *Diseases* 2 and 3, *Internal affections*, *Affections*, *Diseases of women* 1 and 2, and *Fractures*. For the purposes of this paper I treat them simply as therapeutic texts, without reference to the question of their mutual relations or of their relations to a particular school or schools (cf. note 52 above). They are in any case the only texts we possess which give detailed therapies for internal illness. It is not plausible to suppose that only one school was concerned with internal medicine: that is not what *Regimen in acute diseases* suggests, and the evidence from *Fractures* and from references to therapy in *Epidemics* 5 and 7 is absolutely opposed to it. To suggest that *Fractures* (so F. Z. Ermerin in his edition of *Hippocrates Works*, 3 vols., Leyden, 1859–64, vol. III, p. viii) and *Epidemics* 5 and 7 emanate from the Cnidian school or are influenced by that school because they show agreements in therapy with *Diseases* 2 and 3 is a strange proceeding.

There are no doubt differences in date between these texts, and even between different parts of the same text (see the studies of Grensemann, *op. cit.*, note 21 above, and Jouanna, *op. cit.*, note 43 above). If the passages I cite should prove all to come from early strata, so much the better for my thesis; if, as is more likely, they extend over a considerable range of time, then they may also be taken as witness to the persistence of certain techniques of, and attitudes to, therapy.



### *A structural pattern in Greek dietetics*

Ibid., ch. 24 (7.228, 9–13. A variety of dropsy): “Let him abstain from food for the first ten days, for these days decide (KRINEIN: cf. KRISIS) whether the disease is fatal or not. For a gruel let him take (RUPHEIN) juice of peeled barley . . . let him drink white wine of Mende . . . when the ten days have passed. let him eat solid food (SITIA) which is pure [or “unmixed”, KATHARA].” Ibid., ch. 49 (7.290, 19–20. One of a group of diseases called “thick”): “If it benefits, give solid food (SITIA); if not, gruels (RUPHEMATA) of peeled barley or millet.”

*Affections* ch. 14 (6.222, 15–17. A fever called “burning”): “while there is fever, treat (THERAPEUEIN)<sup>57</sup> with gruels and drinks; while there is no fever, give solid foods (SITIA) as well.” Ibid., ch. 18 (6.226. 11–13. In intermittent fever): “when the patient is suffering an attack, diet him (DIAITAN) with gruel (RUPHEMA) and drink (POTON); between attacks, with solid food (SITIA) which is laxative.” Ibid., ch. 23 (6.234, 21–23): “Apply [in dysentery] the drinks (POMATA) gruels (RUPHEMATA) and solid foods (SITIA) which are described in the ‘Pharmakitis’.”<sup>58</sup> Further, chapters 39 and 40 are devoted respectively to a discussion of solid food and drink (SITIA, POTA 6.248, 16) and to gruels (RUPHEMATA 6.250, 4). The writer specifies these as peeled barley (PTISANE), millet (KENCHROS), meal (ALETON) and spelt (CHONDROS); but others beside these are mentioned in the therapeutic texts.<sup>59</sup>

The same dietetic structure occurs in the gynaecological texts *Diseases of women* 1 and 2. 1.52 (8.110, 15–112, 5): “Let the patient drink the [preparation] from barley meal . . . let her take as a gruel (RUPHEIN) juice of pomegranate . . . she must abstain from solid food (SITIA) until the fever is resolved . . . . . give her solid food which is light . . . when the fever remits.” Ibid., 2.110 (8.236, 8): “Diet (DIAITAN) if they are without fever, with solids (SITIA), but if they have fever, with gruels (RUPHEMATA).” Ibid., 2.119 (8.258, 16–17): “[In a case of leucorrhea] for the evening meal she should have no solid food, but let her take a little gruel (RUPHEMA), and drink sweet white wine after it.”

Finally an example from the surgical treatise *On fractures*—which, if it can be meaningfully regarded as belonging to a particular “school”, certainly belongs to the school of Cos, not of Cnidus—ch. 11 (Withington, op. cit., footnote 1, vol III, pp. 124–125): “If there is continuous fever, do not purge (PHARMAKEUEIN) but abstain from solid food (SITIA) and gruels (RUPHEMATA), and for drink (POTON) use water and not wine, but oxymel. (Cf. also ch. 36 (pp. 180–181 Withington).)

The above passages indicate the distribution of this dietetic structure among the therapeutic texts. They also to some extent indicate the use to which it is put.

<sup>57</sup> “Treatment” (THERAPEIA) and “dieting” are here treated as virtually equivalent. Cf. Goltz., op. cit., note 2 above, p. 288, referred to in note 48 above.

<sup>58</sup> This is a work, or section of a work, to which the author refers several times. We do not possess it, but it no doubt corresponded in form and content to the bald lists of prescriptions such as are found at the end of *Diseases* 3 or *Diseases of women*.

<sup>59</sup> *Diseases of women*, 2.110 (VIII, 236, 9ff. Li.) mentions ELYMOS (a kind of millet = *Setaria italica* according to H. G. Liddell, R. Scott, and H. S. Jones, *A Greek English lexicon*, 2 vols., Oxford, Clarendon Press, [1940]), lentil broth, boiled barley meal, boiled spelt, boiled ZEIA (= *Triticum monococcum* according to Liddell, Scott, Jones, *ibid.*). *Internal affections* 16 (VII, 206, 2–3) mentions wheat meal with honey added. But almost any cereal or legume could provide the base of a gruel. Cf. Darmstaedter, op. cit., note 40 above.

(iia) Some more extended passages will show how this kind of diet may be the primary or even the sole means of therapy in particular cases.

*Internal affections* ch. 24 (7.226, 13–228, 18): Dropsy comes from the liver, when phlegm arrives in the liver and the liver absorbs it and becomes saturated. The phlegm immediately causes a burning heat and inflation in the liver. Eventually it becomes filled with water, and a mordant pain attacks the body; there is swelling in the lower legs and feet and the liver becomes hard and swells, and the region about the clavicles grows emaciated.

To this case give, at the beginning of the illness, if there is pain in the liver, origanum brayed and steeped in juice of silphium to the quantity of a vetch seed: give this as a draught in a half kotyle<sup>60</sup> measure of white wine; give goat's milk also, mixing with it hydromel to a third of its quantity, in a cup of four kotylai. Let him abstain from solid food (SITIA) for the first ten days, for these decide whether the illness is going to be fatal or not. For a gruel let him take juice of peeled barley, pouring boiled honey into it, and let him drink white wine of Mende or any other which he finds most appetizing, diluted. When the ten days are up, let him take solid food (SITIA) which is pure (KATHARA: "préparations non mélangées" Littré); for meat let him have the flesh of a cockerel which is grilled and hot. Let him also have boiled whelp's meat and for fish let him have galeos and torpedo grilled. Let him drink the same wine.

If the illness does not cease by these means, when he is at his fattest and the liver at its most distended, cauterize him with the irons, for this is the quickest way to make him healthy. You must burn eight eschars.

In this case the tenth day is critical. Up to this time the patient is put on a potion and gruel, but receives solid food after it. Although a humoral cause (phlegm) is assigned to the disease, there is no attempt to treat this cause specifically: the origanum and the silphium administered in the potion are given merely as anodynes, as we shall see from the next passage.

*Ibid.*, ch. 27 (7.236,8–240,5). Hepatitis. This disease comes from black bile when it flows into the liver. It occurs mostly in autumn, at the change of the year. He suffers the following: acute pain attacks the liver, under the bottom ribs and in the shoulder and the clavicle and under the nipple; there is great suffocation, and sometimes he vomits a livid-coloured bile. There is shivering and intense fever for the first days, which then becomes milder; and when he is touched he feels pain in the liver; his complexion is sub-livid; the food which he has eaten suffocates him in its arrival and burns him and causes griping. He suffers these things at the beginning, but as the disease advances the fevers release him; after only a little food he is full; the pain remains in the liver alone, and this pain is sometimes intense and sometimes fades and becomes less, but sometimes it grips him acutely, and in many cases he expires suddenly.

It benefits this case, when the pain is present, to apply the same treatments, especially the same fomentations, as for pleurisy. When the pain remits, bathe him with much hot water and give him hydromel to drink, and an astringent sweet white wine, whichever kind benefits him, and the same gruels (RUPHEMATA) as for a pleuritic case. For the pain you should give him this drink: take a boiled hen's egg, crush the yolk, pour in a half kotyle of juice of strychnos, and a half kotyle of dilute hydromel. Filter this and give it to him to drink: this will stop the pain. Continue with this each day until the pain ceases. Let him also drink juice of silphium to the quantity of a vetch-pod, with origanum brayed and steeped in white wine: let him drink this while fasting. Let him also drink it after the drugs (PHARMAKA) which were given for pain in pleurisy. Let him also drink goat's milk, mixing with it a third part of honey, the quantity of the milk to be four kotylai. Let him drink this in the morning, when he is not taking the other drinks. Let him refrain from solid food (SITIA), until the disease reaches its crisis: the crisis comes usually in seven days, for in these it is made clear whether the disease is fatal or not . . . (p. 238,23). After the crisis of the disease, treat him by giving solid food (SITIA) in small quantity, which is pure (KATHARA). If it is his custom to eat bread, let him eat bread which is hot and as pure as possible; but if he is accustomed to polenta, let him eat that which has been mixed

<sup>60</sup> The Attic *kotyle* was 0.226 litres (Viedebandt in Pauly and Wissowa, *op. cit.*, note 22 above, XI, 2, 1546ff.

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beforehand and is not kneaded. For meat let him have boiled whelp's meat or pigeon or young chicken, in each case boiled; and for fish galeos, torpedo, stingray, and little skates, boiled in each case. Let him bathe each day, guard against the cold, and walk about for a little, until he is in safety.

As in the previous case, although the cause is described as black bile, the treatment does not appear to be directed against the cause.<sup>61</sup> What specific treatment there is, is directed against the pain, as in the previous instance.

*Diseases of women* 1.52 (8.110, 11–112,5). If the uterus is in pain in consequence of parturition, there is mild fever, the lower belly burns within, and sometimes swelling comes up on the hip; there is pain in the lower belly and the flanks; stools are bilious and foul-smelling; and if the belly is not stopped, she dies suddenly.

In this case one must cool the belly, taking care that it does not become chilled. Let her drink, if the flux is not stopped, the preparation from barley meal or from bread or from flour meal. For a gruel (RUPHEIN), mix the juice of vinous pomegranate with water, sprinkle lentil meal upon it and boil, mixing with it lentils, cummin, salt, oil and vinegar. Give this as a gruel cold, and lentil broth with vinegar, and vinous Pramnian wine to drink after. She must abstain from solid food [or possibly "from other food"] until the fever remits. If you think it appropriate, let her bathe also. If she is weak, she should have a drink made from meal from barley-groats; if even weaker, she should drink it in cold water. Let her take light food (SITION) of a kind which will not be laxative, when the fever remits.

This disease is acute and deadly.

These cases are representative of a large number in the therapeutic texts, in which the therapy is almost entirely dietetic, and is not complicated by any more active intervention such as purging or bleeding. Cauterization is recommended in *Internal affections* ch. 24, but only as a last resort, if the disease does not respond to the dietetic measures suggested.<sup>62</sup> Otherwise the only specific remedies are for the alleviation of pain, which is always the first concern of the Greek physician. To what extent is this dietetic treatment regarded as contributing directly to the patient's recovery? The decision is, literally, left to the disease itself: for it is the critical period, that is to say the course which the disease spontaneously runs, and not the physician, which decides whether the patient will die or survive. The structure of the diet is made to depend upon this crisis: liquids and gruels before the crisis, and solid food only after. This might suggest that these are special cases, in which because of their severity or because of past experience, the physician has made a conscious decision to "leave things to nature" and to abstain from what we might regard as more active intervention; a decision which he would not regard as ideal, and which he might not have made in other circumstances. Certainly the case from *Diseases of women* is described as "acute and deadly". But on the other hand, there is neither a positive nor a negative correlation in the therapeutic texts between such prognoses and a dietetic, non-active therapy; and there are besides

<sup>61</sup> In this respect it is interesting that there are good reasons for believing that the aetiological remarks in *Internal affections* represent a subsequent addition to a tradition which is already established: see Jouanna, op. cit., note 43 above pp. 176–260. In that case, one would not expect them to affect the therapy.

<sup>62</sup> This is generally true of all these texts: cautery or the knife is recommended only when other means have failed. In this respect they obey the principle formulated in *Aphorisms* 7.87 (Jones, op. cit., note 1 above, vol. IV, pp. 216–217): "Those diseases that medicines (PHARMAKA: perhaps "purgers") do not cure are cured by the knife. Those that the knife does not cure are cured by fire. Those that fire does not cure must be considered incurable."

cases in which the writer expressly says that the treatment is unlikely to help although he still recommends it.<sup>63</sup> On the whole, these texts do not suggest any conscious distinction between dietetic and other forms of therapy in this respect: there is no reason to suppose that diet is regarded as merely passive. But of course in the absence of any specific discussion of this question in the texts it is not possible to make an objective decision. In the meantime we should be careful not to import modern assumptions about the role of diet into our reading of the texts.

(iib) My final example, *Diseases* 2.67 (7.102 Li.), is a more elaborate variation upon this simple structure. It also serves as an example of the way in which these therapies can be approached most usefully: that is, by attempting in the first instance to establish what the structure is, rather than by attempting to justify the individual items of a therapy by reference to some causal system, humoral or otherwise.

*Disease* 2.67; Murderous<sup>64</sup> [disease]. There is fever and chill; he feels that his brows are overhanging; he has pain in the head; and he vomits saliva which is hot, and much bile; sometimes his stools are bilious too. His eyes are too big for their sockets; he has pain in his neck and in his groin. He is weak, and he raves. This man dies on the seventh day or earlier: if he escapes these, then he usually recovers. But the disease is deadly.

To this man you must apply cold compresses, on his abdomen and on his head. For a drink, bray parched barley along with its husks and steep it in water; drain off this water and use it to make hydromel, which you are to give to him diluted. Give him no solid food and no gruel for seven days, unless you consider him to be too weak. If so, then give him the juice of peeled barley cold, thin, and small in quantity, twice a day, and water to drink with it. When the seven days are up, and the fever remits, give him millet (KENCHROS) as an electuary; and for his evening meal give him pumpkin and beets in small quantity, and white wine diluted to drink with it, until the ninth day. After this, let him have solid food in very small quantity, breakfasting on millet. He must abstain from bathing as long as the pain and fever persist, but when they are over, let him bathe with much water. If his bowels do not move, use a mild clyster or suppositories.

When he has recovered his strength, apply a mild drug (PHARMAKON) to his nostrils, and purge his belly downwards; then give him asses' milk to drink.<sup>65</sup>

This is evidently a severe and dangerous disease: the writer says that it is THANATODES (which means "deadly" rather than fatal, and does not imply that the illness is incurable). The seventh day is the critical day, and this as usual divides the treatment into two periods. For the first period, the critical period, the patient should receive nutriment in liquid form only, but this is to be supplemented by gruel if he is dangerously weak: the gruel however must be very thin. Solid food is given not after the seventh but after the ninth day: in the intervening two days he gets an electuary of

<sup>63</sup> E.g. *Diseases* 2.20 (an acute brain condition in which the patient usually dies in three days. After prescribing, the author says: "You will help him most by doing this, but few escape such a disease" (34,23-24).

<sup>64</sup> On the primitive elements embodied in this description and in the symptomatology, especially the overhanging brows, see Kudlien, 'Early Greek primitive medicine', op. cit., note 6 above, pp. 326-328.

<sup>65</sup> Kudlien, cited above, finds a primitive and magical explanation in the prescription of asses' milk for this disease. Some such explanation may lie at its origin, but on the other hand it is an extremely common prescription in all these texts, and is the usual follow-up treatment after purgation. Asses' milk was considered to keep the bowels open. It is used in fifteen cases in *Diseases* 2; in all but two of these it follows purgation, and in the two exceptions (chs. 48 and 50) it is itself used as a purge.

millet, with vegetables (not here regarded as solid food) in the evening. So much for the dietetic branch of the therapy. The other branch consists in the application of refrigerants to the areas where there is pain (these are prescribed first, as measures for the relief of pain almost always are in these texts); and purgation at the end of the illness, when the patient is strong enough to tolerate it.

There are several complicating factors here. One of these is the use of a purge. We are not told *what* the patient is to be purged of. We may guess that it is bile, since in the symptoms he is described as vomiting bile; but in many cases in this particular text where purging is recommended, there is no indication at all, either in symptoms or in prescription, of what, if any, humour is to be purged. Bile and phlegm are in fact mentioned rarely.<sup>66</sup> We may suppose either that in the writer's milieu, it would be so obvious (from the symptoms?) what was causing the disease that explicit prescription was felt to be unnecessary, or that there is in fact no coherent humoral system behind these therapies; but in either case we would be guessing. It is more useful therefore to ask in what cases purging is employed and in what cases it is not; what if any are the common factors in these cases; at what stages in the illness is it employed; and whether its employment modifies other, recurrent, features of the therapy. In brief form the answers are as follows. All the cases described in *Diseases 2*, with six exceptions, involve the removal of noxious matter, either by surgery, or by spontaneous purgation (haemorrhage for example, or expectoration in respiratory conditions), or by artificial purgation. There are twenty-seven examples of artificial purgation. The patient is most commonly purged at the beginning of treatment (sixteen cases);<sup>67</sup> but in a considerable number he is purged at the end of treatment (eleven cases). Purgation at the beginning is obviously the preferred treatment. The cases in which it is deferred to the end are on the whole like the present case: cases in which there is acute fever and a critical day which the patient must safely weather before his recovery becomes likely. Chapters 21 (7.36) and 41 (7.58) offer a reasonably close comparison to ch. 67. In ch. 21, as in ch. 67, treatment is governed by the expectation of a crisis which should occur on the seventh day; but the patient's condition is graver than in ch. 67, since he is in a coma. He is kept alive by having hydromel instilled into his mouth, and is given solid food only after the crisis, "when he has escaped the disease". Finally, "if you think him strong enough", he is to be purged, "for if you do not purge there is fear that

<sup>66</sup> The author mentions the purging of a specified humour only in chapters 13 (VII, 24, 1), 15 (28,8) and 38 (54,16); the humour bile is mentioned as a cause in ch. 41 (58,21).

<sup>67</sup> Chapters 13 (22,24-24,1); 15 (28,7-10); 43 (60,5-8); 48 (72,20-23); 49 (76,2-3); 50 (76,18-23); 51 (78,24-80,1); 52 (80,13-14); 55 (86,7-10); 66 (100,16-17); 68 (104,7-8); 70 (106, 16-17); 71 (108,9-11); 72 (110,5-7); 73 (112,2); 74 (112,20). Artelt, op. cit., note 47 above, pp. 69ff., attempted to use the principle expressed in *Aphorisms* 1.22, *Regimen in acute diseases*, and *Epidemics* 7.60 (V, 426 Li.) and 5.64 (V, 242) that humours should not be purged until they are concocted as a criterion for deciding which texts embody "older" Cnidian doctrine; *Diseases 2* he thought was one of these because it often recommends purging at the beginning of a disease. This however is a fair example of the quite unnecessary confusion which assumptions about the existence of distinct schools can import into the study of these texts. There is in fact no contradiction on this point between *Regimen in acute diseases* and *Diseases 2*. The cases for which an initial purge is recommended in *Diseases 2* are cases in which there is no crisis, hence no initial period in which humours become concocted. Moreover most of these cases are chronic diseases, not the acute diseases which are the subject of *Regimen in acute diseases*. Cf. chapters 55 (88,1); 66 (102,1); 68 (104, 12-13); 70 (108,2); 71 (108,23-24); 72 (110,12-13); 73 (112,11-12); 74 (112,25-26). But where diseases are acute, and where there is a critical period, the initial treatment in *Diseases 2* is by diet, not purging.

the disease will return" (p. 36, 12–13). In the case described in ch. 41, a fever, the patient dies on the seventh or ninth day, unless a favourable crisis occurs on the seventh. He is to be given hydromel and a gruel of peeled barley up to the seventh day, solid food thereafter, and finally when the illness is over he is to be purged: "for in some cases the disease returns, if he continues unpurged." (p. 58, 20).<sup>68</sup>

These three cases have a further similarity, the use of hydromel in the critical stage of the disease. Hydromel is a mixture of honey and water which apart from its uses as a diuretic and as an expectorant, was associated with, literally, a starvation diet: the author of *Regimen in acute diseases* mentions that it was used by those who have determined to starve themselves to death.<sup>69</sup> Its use in these passages and in others of *Diseases 2* is consistent with this: to provide a bare minimum which will keep the patient alive over a limited period of time.

In respect of these two features we can see both a rationale for the treatment and a consistency of pattern with other passages. The gravity of the patient's condition during the critical phase of the disease precludes purging until the end, and suggests the use of hydromel as part of a very reduced diet during this phase.<sup>70</sup>

Ch. 67 shows a variant on the basic dietetic structure [POTON/RUPHEMA/SITION] by introducing a transitional stage of diet, in the form of millet, administered after crisis for a period of two days before solid food is given. Precisely the same therapy, including this variant, is given in ch. 44 (7.62). This is a case of pleuritis, in which the symptoms include fever, coughing, difficulty in breathing, pain in the back and chest, and also in the groin. Crisis occurs on the seventh day; if not, on the eleventh or fourteenth. The symptoms are not greatly different from those in ch. 67. It is of course recognized as a different disease: hence there is no purgation, because in

<sup>68</sup> This is consistent with *Aphorisms* 2.12 (Jones, op. cit., note 1 above, vol. IV, pp.110–111): "Matters left behind in diseases after the crisis are wont to cause relapses." It is worth noting that a text universally regarded as Coan recommends purging by hellebore on the first day, in a case of fracture where fever is present (*Fractures*, ch. 36 (iii, 180–181 Withington)).

<sup>69</sup> "Hydromel has been condemned by the public on the ground that it weakens those who drink it, and for this reason it has the reputation of hastening death. This reputation it has won through those who starve themselves to death, some of whom use hydromel as a drink, under the impression that it will hasten their end." (ch. 56, Jones, op. cit., note 1 above, vol. II, pp. 110–111.). The author would have approved of the practice of *Diseases 2*: "The use of hydromel, without gruel, instead of other drink in acute diseases will cause many successes and few failures." (Ibid., ch. 55).

<sup>70</sup> This pattern is also present in *Affections* 30 (VI, 242); *Diseases* 2.12 (VII, 18–22); 2.16 (VII, 28–30); and 2.69 (VII, 104–106). In all these passages, along with those mentioned in the text, the therapy is identical structurally, although there are variations in detail. The physician first takes measures against the pain and discomfort, with applications that cool or heat. These measures may include the application of a clyster. (This is regarded as quite distinct from *purgation* (KATHARSIS) by a purgative drug (PHARMAKON). The distinction is clearly expressed in *Regimen in acute diseases* 2.17 (76, 11ff. Joly, op. cit., note 4 above): "do not purge (PHARMAKEUE) such cases, but use a clyster if you think it necessary. . . . Relieve the belly by a clyster, but do not apply purges (PHARMAKA) to such cases . . .". This is so in all the cases mentioned above, and seems to be standard procedure. In addition, in *Diseases* 2.12 and 69, the herb called LINOZOSTIS (= *Mercurialis annua*) is added to the gruel (20,18–23 and 104,22). This is evidently not regarded as a purgative (PHARMAKON) but as what *Regimen in acute diseases* ch. 23 calls "those evacuants (HYPELATA) which are given in gruels" and which, according to that chapter, are used to relieve pain by evacuating the bowel, precisely as in these cases. The patient is next dieted with a gruel, abstaining from solid food until the pain ceases. Finally he is purged.

We can I think regard this structure as one of those standard procedures, to be applied in cases of a certain kind, of which any craft (TECHNE), and not just the craft of medicine, is largely composed.

### *A structural pattern in Greek dietetics*

pleuritis and peripneumonia purgation takes the form of expectoration. Otherwise the therapy is virtually identical: fomentations (CHLIASMATA) to alleviate the pain, drink and gruel up to the crisis (the drink being a form of oxymel, and the gruel millet); then for a period of *two* days (corresponding to the period from the seventh to the ninth day in ch. 67) a gruel of millet, with beets; after this period he changes to a solid diet, though a light one, and continues to breakfast on millet. The same dietetic structure appears again in ch. 12 (7.18–22). This is a disease of the head, in which the crisis occurs on the ninth day in the form of a spontaneous outbreak of water and mucus through the nose and ears. The diet consists of drink and gruel up to the crisis, then, for three days, an electuary (as in ch. 67) of millet, along with pumpkin or beets; “then let him have solid food which is as mild and evacuable as possible, continually but gradually increasing the amount of solid food.” (p. 22, 4–5). The transitional period of a millet diet is here three days, not two, perhaps in proportion to the greater length of the critical period which is nine days instead of seven.<sup>71</sup> Whether this is so or not, the intention behind the procedure is clear from the words “gradually increasing the amount of solid food.” Millet is a transitional diet in cases where the patient has been gravely ill.

This use of millet provides a clue to a possible further variant in dietetic pattern. Ch. 44, discussed above, is the first of three varieties of pleuritis. In the second variety, ch. 45, the therapy is too cursorily described to be informative, but in the third variety, ch. 46 (7.64), there are some similarities with the therapy of ch.44. In this case the crisis occurs at fourteen days. Prior to the crisis the diet consists of “the drink made from coarse barley meal” (p. 54, 15–16) and a gruel of the juice of peeled barley with pomegranate juice added; after the crisis the patient is to breakfast on millet, and in the evening to eat poultry, soup, and SITIA small in quantity. This is precisely the same as the post-critical diet given in ch. 44. Occurring in a different part of the text, at ch.56, is a disease which undoubtedly belongs with chapters 44–46, since it describes a condition which is called “pleurisy affecting the back” in *Diseases* 3, 16 (7.144 Li.= p. 17, 18ff. Potter.)<sup>72</sup> The therapy in ch. 56 is identical in its post-critical part with that of chapters 44 and 46. When these three therapies are set out in parallel columns, we can see very clearly how simple the basic structure is, and how easy it is, given this structure, to ring the changes upon it. I am reminded of the techniques of oral composition which have left their traces in the Homeric poems, and which allow for similar variations upon basic patterns. The analogy is not as wild as it might seem, if we remember that Greek medicine too was a technique which must have been orally transmitted before it was entrusted to writing.<sup>73</sup>

<sup>71</sup> Here again we find an agreement with *Regimen in acute diseases*, which also recognizes this transitional post-crisis period, and adds an explanation: “[gruel should be given] for two days after the crisis, in such cases as lead you to suppose that the crisis will be on the fifth, seventh, or ninth day, so as to make sure of both the even and the odd day. Afterwards you must administer gruel in the morning, but you may change to solid food in the evening.” (ch. 13, Jones, op. cit., note 1 above, vol. II, pp. 72–73). The most economical explanation of this and other agreements is that the author is referring to standard practice, which we find represented in *Diseases* 2.

<sup>72</sup> The virtual identity of the *symptoms* with those of ch. 44 was recognized by Boncompagni, op. cit., note 52 above, p. 215, who cites it as an example of the Cnidian multiplication of diseases of which *Regimen in acute diseases* complains. See also Jouanna, op. cit., note 43 above, p. 421, who treats it as parallel to the passage in *Diseases* 3.

<sup>73</sup> Goltz (op. cit., note 2 above, pp. 304–305) touches upon this question, but she concludes that

	CHAPTER 44	CHAPTER 56	CHAPTER 46
CRITICAL STAGE	<i>Drink</i> : a form of oxymel (honey and vinegar).  <i>Gruel</i> : millet, dilute white wine.  <i>Fomentations</i> .	<i>Drink</i> : hydromel (honey and water) + celery or fennel.  <i>Gruel</i> : peeled barley, dilute white wine.  <i>Fomentations</i> and warm baths for pain.	<i>Drink</i> : preparation from barley meal. Dilute white wine.  <i>Gruel</i> : peeled barley + honey or pomegranate.
CRISIS	[7 days]	14 days	14 days
TRANSITION	2 days <i>Gruel</i> of millet, beet.	—	—
POST-CRITICAL	Broth made from whelp's meat or fowl with a little meat. Morning meal: millet. Evening meal: SITIA in small quantity.		

#### CONCLUSIONS

The author of *Ancient medicine* regards the administration of diet in a structure of liquids/gruels/solids as coterminous with the art of medicine. Although we must make allowance for polemic exaggeration, the author must have felt it plausible to emphasize the element of diet in this way; and an examination of the actual therapeutic practice recorded in the Hippocratic Corpus bears his contention out to a considerable extent. Since these texts apparently represent the commonplace level of medicine which we find reflected in *Regimen in acute diseases*, it is reasonable to suppose that this dietetic structure is, as the author of *Ancient medicine* says it is, traditional.<sup>74</sup>

A gradation of diet has an obvious use where the course of the disease also traverses a gradient in severity; and in fact an examination of the texts shows that the application of this dietetic structure matches the regular division of acute diseases into critical and postcritical stages. This fact suggests a further conclusion: that the conception of

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the form of the therapeutic texts does not correspond to an originally oral tradition, because of the necessity for precise wording and because, in lists of prescriptions, there is no narrative structure to aid the memory. However, it should not be too difficult to find examples of the oral tradition of equally complex and unstructured material in non-literate cultures. The modern scholar, not surprisingly, often finds it difficult fully to accept the possibilities implied by the existence of an oral tradition.

<sup>74</sup> *Regimen in acute diseases* ch. 9 says that the study of diet "to restore the ill to health, to preserve the health of those who are already healthy, and to bring those who are in training into peak condition" (although in 2.54 the conception of diet is more narrowly therapeutic). Cf. a similar passage in *Ancient medicine* ch. 14, where the usefulness of diet is "for him who is healthy, him who is recovering from a disease, and for him who is ill." It is impossible in the regimes described in *On diet* Bk. 3 to distinguish between hygiene and therapeutic diet.



disease as a process with a turning-point—and all which that conception implies for the physician's relation to his patient, for "expectant" therapy, and the like—is as old as the dietetic structure, and indeed that the two are complementary.

Dietetics in this primitive sense is dissimilar enough to the dietetics discussed in the first part of this paper, for that to seem to fourth-century writers such as Plato a new invention. The latter worked by reference to the various qualities of foodstuffs, to the kinship of these qualities with elements in the body, and to the consequent effect of both food and exercise in compensating defects and imbalances in the body, or in maintaining a balance where it existed. There was, moreover, no sharp distinction between therapy and hygiene in this dietetics, which could be applied over a lifetime as hygiene, or as therapy in the case of chronic disease. It was this latter aspect to which Plato objected. The primitive dietetics differed from the new in both these respects. The concept behind it was not so much one of balance, as the more commonsense concept of the inflammatory effect of solid food on patients in a state of weakness or of fever or both. Second, it was radically different from normal diet, and was therefore strictly limited by the eventual removal of the condition for which it was adopted.

Despite these dissimilarities, the primitive structure was in no way incompatible with the new dietetics. Specific compensatory effects could no less plausibly be attributed to drinks and gruels than to the solid foods from which they were in any case made.<sup>75</sup> However, it is in the post-critical phase of illness, when the patient is already taking solid food, that the new kind of dietetics comes into its own, and it is here that dietetic prescriptions become most elaborate. This is clear in the text *Internal affections*, in which the elaborate regimens devised by the author are applied towards the end of an illness, rather than in its critical phase.<sup>76</sup> We can already see this tendency in a simpler (or more abbreviated) form in *Diseases 2*.<sup>77</sup> I conjecture that it is at this point, in the post-critical phase of disease, that the new dietetics is coupled on to the old. In other words, it is accommodated within a pre-existent structure.

I remarked at the beginning that, so far as we can tell, surgery came first in Greek medicine, and internal medicine developed only later.<sup>78</sup> We cannot date this development, although the demonstration of a dietetic structure applied to internal illness may

<sup>75</sup> Thus drinks and gruels are included in diets which are said to be drying or cooling in *Internal affections* and *Diseases of women*. The effects of barley as they are described in *On diet* 2.40 apply also to barley gruel: "barley in its own nature, is cold, moist and drying, but it has something purgative from the juice of the husks. This is proved by boiling unwinnowed barley, the decoction of which is very purgative; but if it be winnowed, it is more cooling and astringent." (Jones, op. cit., note 1 above, vol. IV, pp. 306–307).

<sup>76</sup> Cf. the elaborate diet in ch. 17 (a disease of the kidneys): the patient's food is to be divided into ten equal parts each day for a period of ten days. On the first day he is to eat nine-tenths, and walk ten stades (=2000 metres), on the second day eight-tenths and twenty stades and so on up to 100 hundred stades, when the whole process is set in reverse and the food gradually increased while the distance is decreased. (VII, 208, 8ff.) This is not an acute disease, and has no clearly marked critical and post-critical period, but obviously such a regimen could only apply to patients not in a critical state. For an example of a post-critical diet, see ch. 27 (238,23–240,5) cited above, in which three kinds of meat are specified as alternatives, and four kinds of fish.

<sup>77</sup> *Diseases 2* works with a classification of meats into beef, mutton, pork, fowl, and whelp, and also classifies foods by their effects into laxative (MALTHAKA, DIACHORETIKA); oily (LIPARA); salty (HALUKA); pungent (DRIMEA); sharp (OXEA); fatty (PIA); cold (PSUCHRA); and briny (HALMURA, possibly the same as HALUKA above).

<sup>78</sup> Cf. Kudlien, op. cit., note 3 above.

incline us to put it rather early. But no doubt the general picture is true. If it is, then it is relevant to remark that both the concept of illness as a process, and the application of a graded diet to that process, are eminently appropriate to the inflammation and fever which may accompany recovery from a wound. Both may belong originally to the surgeon rather than to the internalist; and one passage already cited shows that simple graded diet was applied in traumatic cases.<sup>79</sup>

#### SUMMARY

The conventional view that dietetics was a fifth-century importation into Greek medicine is not incompatible with the existence of a more primitive dietetic pattern. Evidence of the nature of this pattern can be found in *On ancient medicine* and its existence and function can be demonstrated in a number of texts of the Hippocratic corpus. It is tentatively concluded that this structure was originally applied in traumatic cases, and this conclusion is compatible with the hypothesis that Greek medicine originated in surgery.

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<sup>79</sup> *Fractures* 11 (Withington, op. cit., note 1 above, vol. III, pp. 124–125). The case is necrosis and attendant fever, caused by damage to the heel. In chapter 35–36 (pp. 178–181) a compound fracture of the thigh is attended by similar conditions, and diet is used here too. Dietetic treatment in dislocations is also mentioned in *Fractures* ch. 7 and ch. 8 (Withington, op. cit., note 1 above, vol. III, pp. 112–113 and 116–117) and *Instruments of reduction* chapters 33, 35, and 37 (ibid., pp. 430–431, 434–435, 436–437). A “low” or “strict” diet is specified in each case. There is no reason for regarding this as a modern innovation: from the earliest times the surgeon must have regarded the prescription of a diet as one of his duties. Cf. *Affections* ch. 38 (VI, 246, 26–248, 1 Li.); “Traumatic cases should be fasted, and the contents of their bowels removed by clyster or purge. Give water and vinegar to drink, and gruel (RUPHEIN).”

The occurrence of fever and critical periods in traumatic cases is noted in *Diseases* 4.48 (VII, 576–578 Li. = Joly, op. cit., note 34 above, 103, 17–104, 20) and is given the same pathological explanation as in non-traumatic cases. *Fractures* ch. 31 (Withington, op. cit., note 1 above, vol. III, pp. 170–171) mentions as a common opinion the view that “all diseases are wounds”, with specific reference to critical periods. To my mind, the evidence that dietetics first arose in connexion with surgery is overwhelming.