

## Introduction

*It is all too easy to imprison oneself within the following dilemma. Either we read the philosophies of the past so as to make them relevant to our contemporary problems and enterprises, transmuting them as far as possible into what they would have been if they were part of the present-day philosophy, and minimising or ignoring or even on occasion misrepresenting that which refuses such transmutation because it is inextricably bound up with that in the past which makes it radically different from present-day philosophy; or instead we take great care to read them in their own terms, carefully preserving their idiosyncratic and specific character, so that they cannot emerge into the present except as a set of museum pieces.*

Macintyre, A. 1984.

The tension between anachronism and antiquarianism: I believe the only possible resolution lies in an approach that not only sheds light on the meaning of an old medicinal system for the people who used it, but also attempts to find how this meaning can be relevant to us now.

The greater significance of such an approach for modern herbalists, as compared to medical practitioners, lies both in the fact that herbalists tend still to make use of categories derived from medieval medicine, and that at the same time there has been no serious attempt to discuss the significance of this past tradition from an historical point of view. It is not as if comparative analyses have not been tried (Holmes etc.), but these analyses have usually focussed on the recovery of ancient therapeutic systems and on their applicability in modern practice. These approaches exemplify the anachronistic attitude, and are in any way premature, given the dearth of works dealing with more fundamental issues.

There are, however, other levels of comparison which are still very relevant to modern herbalism. Any discussion of the past is significant if it reveals us what other people thought and did, and why, instead of telling us what we should think and do. Critical reflection on the past is humbling and gives practitioners new perspectives; it also reveals the risk of using the past as a crutch or a justification. Thus, the relevance of this process ceases to lie exclusively in what categories we can resuscitate to modern use, and reveals itself in the same act of historical analysis.

This paper cannot but be just a small piece in the context of the above outlined approach, but I believe it is a valuable piece of research in its own right.

The codex that has been here partially translated is an interesting document: although indebted to the Salernitan literature and to a certain extent to other works of popular medicine (see chapter I.1.), it also has a coherence and a homogeneity of therapeutics that indicate a degree of originality (bearing in mind that it is a Medieval work and, as such, always relatively original).

My choice was guided by many factors: the text had not been previously translated into English, and it belongs to my country of origin medical tradition. Moreover, it is an example of that kind of literature which, more than herbals and university textbooks, can provide a degree of insight into the actual practice of medicine. It was written in a period in which, although university education was already established and university educated *physici* already were forming an influent professional group, the medical market was still open to a variety of health professionals competing and exchanging experiences.

In line with the ideas of Jardine (1991), a description of the significance of this work has been attempted by exploring what kind of theoretical background (chptr I.1.) and education (I.2.) the author was likely to have, and what was the reality of the practice of medicine in his times (I.3.). I have then examined in more detail the contemporary ideas about the body and its physiology (II.)

and the ideas about herbal therapy (III.). I have then isolated for a more detailed study a recipe on hepatic problems. This has meant examining the role of the liver in contemporary physiology and the general approach to its treatment (IV.), prior to the extensive discussion on the materia medica and the rationale of the recipe itself (V.).

Technical points aside, I also hope that the paper will show how modern ideas about the nature of medicine in the Middle Ages, and in particular the idea of a sharp division between learned and doctrinaire academic medicine and the earnest empiricism of folk herbalists, are often oversimplifications of an intricate issue.

### **Technical Introduction.**

The manuscript upon which this translation and commentary are based was found by Carlo Castellani when at the **Biblioteca Governativa e Civica** of **Cremona** during a systematic exploration of its manuscript collection. It was coded **AA. 1.98**, and was catalogued as: *Anonimo, Secreti Medicinali - sec. XV*. It belonged to the *Libreria Civica, Araldi Erizzo* collection. (Castellani 1959: xiii). It contains 346 recipes, of which 214 (up to folio 41 verso) are divided into chapters on plasters, ointments, powders, oils, eyes (mainly eyewashes), waters and pills. The *Incipit* contains the list of chapters and gives also the name of the author: 'Magistro Guasparino of Venice, surgeon, who lives in Verona at Castel de San Felice'.

The manuscript is clearly divided into two sections, the first of which follows the ordering given in the *Incipit* and is written in vernacular Italian, while the second part has no obvious ordering and is written in non-scholastic Latin and, moreover, offers many recipes for pestilence which are completely absent in the first section. Castellani (1959: xx) advances the hypothesis that the manuscript is a XV-century translation of an older Latin collection by Magistro Guasparino, who probably wrote between the end of the XIII and the first half of the XIV century. The author of the translation then probably added new recipes from his own experience to the text.

It seems that the author of the first part of the manuscript was a learned physician, heavily influenced by Arabic medicine, probably through the works of the Salernitan School (Castellani 1959: xxxiii). Guasparino was probably addressing other physicians and not the general public (there are a few technical pharmacological indications). Although other versions of the manuscript could not be found in the **State Archives** of **Verona**, it seems plausible that the codex had a certain diffusion amongst physicians (Castellani 1959: xxxii).

The chapter on powders that has been translated here (see chapter V) belongs to the first part of the manuscript. This is for a number of reasons: firstly, it appeared that the first part could relate more easily to modern herbalist practice, since we tend not to use magical spells or substances of animal origin in our therapies. Secondly, the first part offered a well-organised text divided into sections; this has given me the opportunity to translate a self-contained chapter on powders which are, I believe, the closest pharmaceutical form to modern herbal practice to be found in the codex.

CHRONOLOGICAL TABLE

Period	Event
950s	<b>Salerno</b> starts to emerge as a centre of medical practice.
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11th century	<b>Macer Floridus</b> .
1037	Death of <b>Ibn Sina</b> (Avicenna)
1058-1087	<b>Desiderius</b> Abbot of Monte Cassino
1063	<b>Alphanus</b> travels to Constantinople and translates <i>On The Nature of Man</i> by Nemesius of Emesia.
1070-1097	<b>Constantine</b> translates <i>De Coitu</i> and <i>Viaticum</i> by <b>Ibn al-Jazzar</b> ; <i>Pantegni</i> by <b>al-Majusi</b> (Haly Abbas), <i>Tegni</i> from <b>Galen</b> ; commentaries by Galen on Hippocratic <i>Aphorisms</i> and <i>Prognostics</i> ; <i>Medical Questions</i> by <b>Hunayn</b> ; <i>Isagoge</i> by <b>Johannitius</b> .
1080-1200	School of <b>Salerno</b> (medical education)
1087 c.	Death of <b>Constantinus</b>
1095-1270	The Crusades
1120s	End of translation activity after Constantinus
1130	<b>Trota</b> (trotula) of Salerno
1140 onwards	Translation from Arabic to Latin in Spain and in Constantinople. <b>Gerard of Cremona</b> (fl 1150-87 in Toledo) and his colleagues translated <b>Galen's</b> <i>Methodus Medendi</i> , <i>Canon</i> by <b>Ibn Sina</b> (Avicenna); <i>Kitab al-Mansuri</i> (Liber ad Almansorem) by <b>al-Razi</b> (Rhazes). In Constantinople <b>Burgundio</b> (1110-93) made similar translation, with a better rendering and wider range ( <i>On Crises</i> , <i>On the Natural Faculties</i> )
1150 s onwards	The Salernitan community of physicians starts to produce commentaries on <i>Articella</i> .
1179	Death of <b>Hildegard of Bingen</b>
c. 1180	University of <b>Bologna</b>
1187	Death of <b>Gerard of Cremona</b>
1193	Death of <b>Burgundio da Pisa</b>
1222	University of <b>Padua</b>
1277	Death of <b>Petrus Hispanus</b>
1280	<b>Arnau de Vilanova</b> translates Avicenna's <i>On the Properties of the Heart</i> . Death of <b>Albertus Magnus</b>
1282-3	Translation of Rhazes' <i>Continens</i> . <b>Arnau de Vilanova</b> translates Galen's <i>On Rigour</i> . Translation of Averroes' <i>Colliget</i>
1295	Death of <b>Taddeo Alderotti</b>

Period	Event
1313	Death of <b>Arnau de Vilanova</b>
1320s	<b>Niccolo da Reggio</b> translates Galen's <i>De usu partium</i> , <i>On Prognosis</i> , <i>On cause</i>
1321	Death of <b>Dante</b>
1347-51	Fist epidemic of plague.

## I. Setting the scene: from Salerno to the Black Death.

Given that, as we have observed above, Mo Guasparino seems to have been influenced by Salernitan texts, and that he almost certainly wrote the *Antidotarium* before the first outbreak of plague, it seems appropriate to limit our review of the evolution of medical literature, theory and practice to the period between the 11th century, when Salerno started to emerge as a centre of medical learning, and the second half of the 14th century, the time of the first epidemic (1347-51).

### I. 1. Medicinal theory and literature in the early and late Middle Ages.

The conditions of practice and learning in the early Middle Ages are difficult to assess, but there is little doubt that while practical and popular medicine were relatively untouched by the fall of the Roman Empire, theoretical, learned medicine declined to a greater extent. Some of the ancient Greek and Roman medical heritage survived, often in a Christian context or through encyclopaedic works like the *Etymologies* of **Isidore of Seville** (ca. 570-636), but the emphasis was mainly on practical works. As Nutton (1995b: 86) states, a "substratum of classical, mainly Methodist, therapeutics remained, along with a modicum of classical theory, enough to explain diagnosis and treatment. The emphasis, however, was on what worked".

The start of the 11th century coincided with the beginning of a demographic boom that would last until the 13th century. The consequent urbanisation and improved economic conditions, together with a shift from a religious to a more secular context for healing practices, were important determinants for the growth of a strong medical community in Salerno. (Siraisi 1990: 13 ss. Garcia Ballester, L., French, LK., Arrizabalaga, J. and Cunningham, A. 1994: 13 ss. Kristeller 1956). Around the same period, the Abbey of Montecassino, near the city, was becoming an increasingly important centre of translation. Thanks to the activity of the archbishop of Salerno **Alphanus** and one of the monks at Montecassino, **Constantine the African**, from the 1060s to the 1080s important medical Arabic and Greek texts were translated into Latin (see chronological table). But it was not until the 1150s that the Salernitan community of physicians, which had a certain command of the newly-introduced Aristotelian logic and pedagogy, came into contact with this corpus of translations (later to be known collectively as *Articella*). This encounter would have important consequences: it would produce a series of commentaries that would set the standards for a new pedagogy which in turn would help establish the core curriculum for the future teaching of medicine and its Aristotelization (Garcia Ballester *et al.* 1994: 8 ss. Jacquart 1988. Bloch 1986.). The consequences of the encounter between Aristotelian rational analysis and the Aristotelian Galenism of Constantine's Corpus of translation, between philosophy and practical medicine, were to transform the conceptualisation of Medieval medicine. Thenceforth, medicine began to be considered more an *ars* (that is, an operative and rational activity) than a mere empirical activity, and was considered able to understand and to interfere with the relationships between men (Microcosm) and the cosmos (Macrocosm) (see chapter II on the role of humoral theory). With increased emphasis placed on links with natural philosophy in the university setting, medicine would eventually reach the status of *scientia*, that is, of the knowledge of the human body. (Ballester *et al.* 1994: 8-13. Nutton, 1995a). The rational character of therapy is noticeable in the first part of our manuscript, especially when compared to the second part with its recipes rich in strange ingredients and popular magic. (Castellani 1959: xxxvi-xxxix).

Another important wave of translations was to come from Spain and Constantinople (see Table), with the translation of the *Canon* of Avicenna and other Galenic treatises which, together with the *Articella*, would become the main textbooks of the medicinal curricula at universities. (Garcia Ballester *et al.*, 1994. Jacquart, 1990.)

Paradoxically, while this wave of new translations deepened knowledge of theoretical medicine, it also reduced its scope. While pre-Salernitan medicine was influenced by Methodism and Hippocratic medicine, the new learned medicine used almost exclusively a Galenic framework, and a Galenic reading of ancient medicine. (Garcia Ballester *et al.* 1994. Nutton 1995a: 142)

This narrowing of scope would become more evident as the new universities started to organise their teaching around this select corpus of works, the knowledge of which will define what a proper *physicians* is.

At the time the translators were active and the commentaries were being written, there continued to be a large output of purely practical collections of recipes, like the *Antidotarius magnus seu universalis* (IX sec., unknown author) in Salerno, which culminated around the 1200 with the production of the

famous *Antidotarius magnus* by Magister Nicolaus, a major influence on Mo Guasparino and 'without doubt one of the most influential texts in medieval literature, and essential for both physicians and apothecaries' (Ballester *et al.* 1994: 28). This influence on our manuscript is evident in the similar *Materia Medica* (rich in *exotica*), in the evident polypharmacism (of Arabic origins) and in the similar structure of the *Antidotarium* (Castellani 1959: xxxiii). However our codex offers a greater variety of compositions and pharmaceuticals preparations, such as the eyewashes, absent in the Salernitan text (Castellani 1959: xxxv).

Perhaps the best known work of the School of Salerno is the *Regimen sanitatis salernitanus*. A treatise of medicine, hygiene and therapy in verse, it was written for the first time by Nicolaus Praepositus around the 1100, and was subsequently rewritten many times and with many different titles (*Regimen sanitatis*, *Flos medicinae*, *Lilium medicinae*, *Herbarius salernitanus*).

Although this 'Fachliterature' had a 'complex relationship with medical texts in Latin and it deeply influenced the world of medical practice, it was often produced and used by anonymous practitioners mainly of non-academic origin, who did not spurn expressions derived from common speech.' (Ballester *et al.* 1994: 3). It was not necessarily incompatible with the theoretical literature: rather it interacted with it, making use of the new technical language.

## ***1.2. Teaching of medicine***

Between the 12th and the 13th century the first universities appeared in France, Italy, England and the Iberian peninsula. Leaving aside the Salernitan school (which became a university when its importance as a teaching centre had already declined), the most important universities up to the 14th century were Paris, Montpellier and Bologna (which around 1200 housed the most important medical faculty in Europe). Padua would only later become the most prominent centre of medical studies and research of the later 15th century.

*At the origin of these new developments* there was the multiplication, during the 12th century Renaissance, of schools providing Latin literacy, the intense translating activity, the impact of Aristotelian logic together with the availability of new theoretical texts, and the desire of learned physicians to acquire the status of professionals (following the example of already established professions like Law). (Siraisi 1990: 49).

The general increase in Latin literacy meant that the teaching of medicine was far from being the prerogative of university faculties, and that *medici* outside the university could still receive a comparable education. The institutionalisation of medicine was however extremely important for other reasons: it was influential for the future development of the profession because it linked medicine with other branches of knowledge and in particular with Aristotelian natural philosophy. It also promoted the creation of an influential community of university-educated *physicians* and the perpetuation of a certain body of knowledge.

Medicine was, together with Law and Theology, one of the most important faculties. All three of them presupposed a background in the liberal arts (in the sense that students had previous degrees in liberal arts or were studying arts concurrently). These studies included Logic, Disputations and Aristotelian natural philosophy, along with some Arithmetic, Geometry, Astronomy and Music theory. According to **Pietro d'Abano** the three subjects most important for a future physician were **Logic** 'because it is the condiment of all sciences', **Natural philosophy** because 'it shows the principles of everything', and **Astronomy/Astrology** because 'it is directive of judgements' (Siraisi 1990: 67).

The structure and curriculum of the main medicinal faculties were very similar in all the main universities. The typical books studied, and present in a physician's library, were Avicenna's *Canon*, the Hippocratic *Aphorisms* and the brief Galenic compendium *Tegni* (also called *Microtechne* or *Ars parva*). In addition, the student would have read Aristotle as part of his overall education in the arts.

We know that from at least the second half of the 14th century the three principal subjects taught as part of university medical training were **theorica** (the most important one, which included physiology and the principles of medicine), **practica** (teaching on specific diseases, signs and symptoms, and treatment) and **surgery**. Earlier curricula would probably have followed this same structure, perhaps in a less systematic fashion. (Park, 1985. Nutton, 1995a. Siraisi, 1990).

The three main categories of disease taught were *solutio continuitatis* (trauma), *morbus in complexione* (complexional imbalance) and *morbus in compositione* (congenital malformations). The three kinds of possible intervention were **diet** (the main treatment because it was the least disruptive to the patient's

physiology), internal and external **medication** (similar to dietary treatment but more violent, it consisted mainly of herbs, acting on complexional balance, evacuation of humours or more specific effects) and **surgery**. (Siraisi 1990: 137)

This highly structured and theoretical curriculum did not necessarily perfectly reflect the actual teaching activity. The idea of the medieval university teacher as sclerotised and a mere reherser of textual knowledge with no connection to practice is in need of a correction. McVaugh and Ballester (1995) argue that relying solely on 'important' texts can be misleading and does not account for the individuality of the teachers and their use of the texts. An example of notes taken during a university lecture by Arnau de Villanova 'shows us a teacher trying to wean his students from a dependence upon fixed rules as they treat their patients'. Premuda (1977-78) has also pointed out that we should not be fooled into thinking of a myopic and traditionalistic University, since already between 400 and 500 there existed a gap between *praxis* and *theoria*. On a superficial level, the teaching was traditionalistic and attached to a preexisting model for want of a better, but on a practical level teachers were often using original and practical projects.

We know nothing directly about the education of Mo Guasparino. Although the *Incipit* of the codex states that he was a surgeon, Castellani (1959: xxxvi) infers from the quality and type of recipes in the *Antidotarium* that he was a physician practicing surgery. Being native of Venice, he could have studied at the university there, or in Verona. The latter never became a university site, even after pope Benedetto XII gave his concession on the 22nd of September 1339. This does not mean, however, that there was no teaching activity; the city statute of 1228 and the subsequent ones of the 1276 mention the duty to employ a good teacher of *physica*, that is, of medicine, and the duty to ease the access to study for those willing to learn (Scarcella 1988). It is also possible that the author studied elsewhere, such as in Pavia, Bologna or Padua.

### ***1.3. Conditions of practice***

The rise of university education and the constitution of the first professional organisations (Guilds), with their subsequent definition of standards of education, led in the 12th-13th century to the stratification of medical practitioners, with the university physician occupying the highest position (Siraisi, 1990) This stratification, however, did not provide a sharp division of roles of the type we are used to in modern society. At least until the thirteenth century, although the scholastic model was becoming more influential, there were still many doctors who 'did not consider academic medicine to be something necessary for proper professional activity' (Garcia Ballester *et al.* 1994: 6). Moreover, definitions of what a proper doctor was were fluid, and civil authorities licensed *medici* to practise without a university degree. It is a fact that between the 13th and 15th centuries, medical faculties trained only a minority of practising *medici*. (Siraisi 1990: 63-65)

It is likely that university educated *physici*, learned *medici*, surgeons, empirics, herbalists, folk healers and the providers of domestic medicine all belonged to a continuum of medical care with blurred internal boundaries. While the university physicians tended to occupy a more prestigious position, all the practitioners probably worked in an overlapping market, and collaboration and mutual respect were as likely as competition. As Cipolla (1976) and Park (1985) have argued, the idea of a group of learned physicians 'catering for the rich citizens and leaving the rest of society in the hands of various different charlatans' (Park 1985: 47) is no longer a sustainable one, and should give way to a more complex idea of interaction and subtle reciprocal influences. In fact, domestic 'medicine ... drew on traditional beliefs as well as simplified and antiquated versions of the theory taught to medical students...For the most part...there was little sense of competition between domestic and professional medicine', since the first was for minor or chronic illnesses, the second for acute ones (Park 1985: 49). At the same time it is also clear that university books were usually abandoned for the more useful *Practica*, which 'were been used as primers for medical students and handbooks or "vademecum" for the practising physician' (Wear 1985: 119). In fact it has been argued (Riddle 1990.) that 'the general practitioner of the later Middle Ages reacted to the learned infatuation with theoretical medicine by largely ignoring it'.

A description of the Medieval medical community would therefore be extremely partial if it were to concentrate solely on one sector (physicians and university texts) and discard the other (the rest of the practitioners and the technical literature). This approach would miss the important connections and influences among practitioners which formed an 'incipient network of medical care and attention' (Garcia Ballester *et al.* 1994). The existence and spreading of this network in 13th century Italy is evidence of the wide acceptance of the work done by medical practitioners on the part of

society (or at least that part of society that was able to make decisions), and of the 'reasonably satisfactory response to the problems that illness produced for the inhabitants of towns and cities and also of villages (Garcia Ballester *et al.* 1994: 6-8. Siraisi 1990: 42 ss).

Although, as we have observed before, Verona never developed a university, it had an active medical policy, and the city statutes of 1276 regulated very strictly medical conduct, duties as well as benefits for the medical profession. Doctors were exempted from paying city taxes and from serving in the military, in exchange for free services to citizens. It is important to stress how the statutes do not mention university education as a prerequisite for the exemption from duties, but simply the judgment of two honorable citizens on the doctor's education and morality (Scarcella 1988).

## II. Traditional physiology and the idea of body.

*Quindi parliamo e quindi ridiam noi;  
quindi facciam le lagrime e ' sospiri  
che per lo monte aver sentiti puoi.*

Dante, La Commedia  
Purgatorio, XXV, 103-105

### II. I. The Body.

A study of the bases for herbal treatment involves an analysis of ideas about the human body and its functions. However, if there is anything productive coming out of the post-modernist debate, it is perhaps that we are rendered aware that ideas about anatomy, physiology and materialism cannot be examined in isolation from the overall cultural context, because they offer 'intellectual conceptualisations (or 'frames') in the same way as do the manifestly less naturalistic discourses of fashion or ascetism' (Kay & Rubin 1994: 1).

Firstly, unlike in modern times, anatomy and even more so physiology were not independent subjects of study, nor were they studied only by medical students. They were an integral part of natural philosophy and as such were discussed by theologians, natural philosophers and medici alike, since the terminology used in the debated was common to all (Siraisi 1990: 50-53). In particular, from the 13th century onwards, with the deeper infiltration of Aristotelian notion of hylomorphism and its utilisation in the eschatological discussion, the human body became more and more part of theological discourse. To our modern eyes, which cannot but see the world through the filter of Cartesian dualism, Middle Ages offers somewhat disturbing images of the intermingling of spirituality and bodiliness, of the mixing of genders, of the blurring of bodily boundaries.

Thus, although there is no doubt that 'medieval writers...frequently saw disease as a condition to be avoided...it is also true that sickness and suffering were sometimes seen as conditions "to be endured" rather than "cured" '. (Bynum, 1989, p. 167) Moreover, the so common cases of fustigation, punishment, or torture of the human flesh, considered today as a negation of the physical, were at those times a way of elevating the physical to the divine.

According to Bynum (1989, p. 162), this somatic aspect is

derived from the fact that by the 13th century the prevalent concept of person was of a psychosomatic unity, [in that] the orthodox position in the eschatology required resurrection of body as well as soul at the end of time, and the philosophical, medical, and folk understandings of body saw men and women as variations on a single physiological structure.

Nowhere is the concept of embodied spirituality so poetically as in Dante's quartine. The poet, in XXV canto of his Purgatory, does not use the scholastic concept of a separate *anima* but follows instead an Aristotelian idea of matter and form where the *anima* is the form of the body and as such not separable. At the embryological level, he makes Stazio say, the rational spirit is *blown* into every single human being by God, and it assimilates in itself the already formed vegetative and sensitive spirits (Dante Purg. XXV, 68-75). But it is in the following verses that the Poet describes the ineffable unity of body and soul and reveals how the rational spirit ('the heat of the sun') and the animal spirits ('the juice which flows from the vine') become one new substance ('wine').

*E perche' meno ammiri la parola,  
guarda il calor del sol che si fa vino,*

*giunti a l'omor che de la vite cola.*

This new corporeality was as much the result of the theological approach and Aristotelianism as of the humoral paradigm. This paradigm meant 'that persons could be born in a wide range of shapes and with clusters of characteristics produced by the constellation of cosmic, climatic, somatic and humoral conditions of conception and generation' (Rubin 1994: 106), and meant that the coexistence of male and female characteristics in hermaphrodites could be explained by the medical theory. (Rubin 1994: 103 ss.).

This idea, together with the cult of relics as a site of the sacred, the Sacred Host as the ultimate and unique relic of Jesus, the visions of the Host as flesh and the Eucharist as symbolic, but quite real, cannibalism, the use of bodily functions and excretions as means of salvation, healing, elevation - swallowing the sputum of saints, the drinking of their bath water, of their breast milk - moreover, the manipulation of bodies through fustigation, self-torture, starvation, crucifixion, hanging that, as we have seen before, were seen more as means of elevation through the body than in spite of the body, all this reveals how different the conceptualisation of the medieval body was

## **II. 2. The Humoral Paradigm**

At the very base of the medical theory Medieval authors derived from Arabic medicine is the concept of the basic constituents of the human body, the so-called 'things natural' (humours, members, virtues/energies, operations, spirits), which were one of a group of three categories: the naturals, the non-naturals and the contra-naturals. For the present purposes we will detail the dynamics of the humours only. Mention of other categories will be made in the remainder of the text when needed.

### **a. The Things Natural**

#### **The humours**

In humoral theory the human body, like everything living or inanimate, is composed of four **elements** (*elementa*): fire, air, earth and water. The four **qualities** (*commixtiones*) of hot, cold, moist and dry are attributed, two by two (compound qualities) to each element: fire is hot and dry, water is cold and moist, air is hot and moist and earth is cold and dry. Pure elements (*elementa*) are not visible *per se* in the world, and they show themselves as compound elements (*elementata*) and are represented in the body as **humours** (*compositiones*): air as blood, fire as red or yellow bile, water as phlegm and earth as melancholia or black bile. Medicine and physiology are thus put in a correspondence schema of cosmic representation. (Johannitus, 1974. Jaquart & Micheau, 1990).

The humoral system possesses a great capacity for organising the world, because it underlines both the identity of cosmic elements (macrocosm) and human beings (microcosm). It defines the four principal temperaments and it associates them with seasons and life stages; it allows for the association of the somatic sphere with the psychic one. (Thomasset 1994)

Like everything else, food and drink are composed of those elements and are transformed in the organism into humours through various digestions that refine the matter and discard those components of food which are in excess or are not good. The refined humours circulate through the entire body and provide appropriate nutriment to the different members according to their different temperaments (see figure 1). Thus, they guarantee the nutrition, the balance, the temperamentum or crasis, and the good health of the body.

Moreover, foods can be easily classified under these categories, and used in a rational dietetics in order to correct imbalances. As for herbal remedies there is no doubt that the humoral doctrine is the most important theory used because is easy and plausible to apply, especially in conjunction with organoleptic properties. It is flexible and it can be extended to aetiology, therapy, prognosis, diagnosis (urine) and drug action. (Stannard, 1985a)

According to Johannitus (in Grant, 1974) the other Naturals were:

1.the **members**, that is organs like brain, liver, heart and testicles (principal members); stomach, kidneys, intestines (dependent on the principals); and parts of the body like arteries, veins, bones, cartilages.

2.the **virtues/energies**: Natural energy, Spiritual energy and Animal energy.

3.the **operations**. There are four *individual* operations:

3.1.Appetite (heat and dryness)

3.2.Digestion (heat and moisture)

3.3.Retention (cold and dryness)

3.4.Expulsion (cold and moisture)

3.5.and many *compound* operations, like Desire and Carrying off.

4.the **spirits** (*pneumata*). There are three pneumata:

4.1.*Vital pneuma*, which originates in the heart and diffuses through the body by means of the arteries.

4.2.*Psychic pneuma*, which is formed from vital pneuma in the coroidal plexus at the base of the brain. It fills the brain and it circulates through the body by means of the nerves.

4.3.*Natural pneuma*, which resides in the liver and is diffused through the body by means of the veins.

**b. The Six Non-Naturals** were the physiological, psychological and environmental conditions affecting health, and were described as coupled opposites, like Exercise and Rest, Repletion and Excretion, Sleep and Walking, or as single items, like Airs, Food and Drink, Passions and Emotions. (Jacquart, 1996)

**c. The Contra-Naturals** were all the pathological conditions. There was no clear distinction between causes of disease, diseases themselves and sequels to diseases.

### III. Herbal Therapeutics

When we look at medieval technical medical literature we find that the rationales behind the recipes are very rarely given (Mo Guasparino, for instance, neglects the rationale completely). Stannard thinks (1985a) this is due to the fact that the distance between us and the medieval world has made obscure what was once common knowledge and did not need to be rendered explicit; moreover, part of the specialist knowledge was transmitted orally and, as Park (1985: 48) points out, we know next to nothing about oral tradition because of the dearth of information sources. Thirdly, some of the properties of the plants might have been obvious to anyone able to appreciate organoleptic properties and to associate them with properties using the humoralistic paradigm. As we have noted above (Chapter I. 3.), medical ideas were circulated amongst the various categories of practitioners, and medical therapy reflected a variety of approaches. Even the humoralistic system, the only theoretical framework for the use of plants made explicit, is not used in the same degree by different authors. Mo Guasparino, for instance, makes no mention of the grading of the different simples in 1st, 2nd, 3rd or 4th degree of the different qualities, a differentiation present in many other medical works since the Byzantine school (Castellani: 1959). He does, however, have other bases for the rationale of his recipes, as do the majority of medieval authors (Stannard, 1985a).

For instance, plants were used because of properties which were not deductible from their humoral balance, such as the property to open passages (*virtus aperiendi*), to disperse, to mature or solve (*maturativa* or *resolutiva*) (see chapter V.2.). Plants were also used for their highly theoretical properties, such as divine (*virtus divina*), blood-creating (*virtus generandi sanguinem*), or occult (*vis occulta*) properties (Stannard, 1985a).

Other frameworks used in conjunction with the previous ones were the Doctrine of Signature; Word Sympathy/Magic; Numerology and Astrology.

#### IV. Liver and Hepatic Therapy in Medieval Herbalism.

The liver plays a pivotal role in the physiology of humours (see Fig. 1). In this context, it is the most important nutritive organ, the seat of the natural pneuma and of the vegetative functions (Anatomia Magistri Nicolai 1974: 727). It is the site of the fire (*ignes*) which digests the juices (*chyle*) from the food (Isidore of Seville 1974: 722). The end product of digestion is blood plus a 'foam' (*cholera* = red or yellow bile) and a sediment (*melancholia* = black bile) (Fig. 1). If the digestion is weakened there will be excess of phlegm, which is undigested blood. When the digestion is excessive (too hot) we find abnormal amounts of red and black bile (Avicenna 1930). The liver has a number of auxiliary organs which nourish, protect and drain it. Thus, it is nourished by the veins, protected by the omentum and the peritoneum, and its humours are drained by different organs: the gall bladder drains, and is nourished by, the red bile, the spleen drains, and is nourished by, the black bile, brain, heart and stomach drain, and are nourished by, the phlegm, and the capillary veins and ureters drain the urine to the bladder (Fig. 1) (Anatomia Magistri Nicolai 1974).

The blood in the liver is thinner than that in the arteries, in order to pass easily through the small pores of the liver matter. When the blood leaves the liver, the excess wateriness is sent to the kidneys, and red and black bile and phlegm go to the respective draining organs. A balanced admixture of blood and the other humours circulates around the body to nourish it. (Avicenna 1930)

According to Stannard (1988), in the Middle Ages there were many hepatic therapies but herbal therapy was the most commonly employed one. Approximately two hundred herbs have been described for use in hepatic problems, the majority being indigenous or naturalised, with few exotica.

The 'Fachliterature' reviewed by Stannard (1988) reveals a whole range of problems affecting the liver, and of categories of remedies to use.

Probably the most frequently mentioned complaint was that of obstructed or blocked liver, or liver passages, for which complaint there were used plants with a *virtus aperiendi*, the property of opening passages (cfr. chapter III). The plants with this kind of property were typically diuretic and plants for urinary problems, or emmenagogues (cfr. chapter V.2.) such as *Pimpinella*, *Apium*, *Asparagus*, *Foeniculum*, *Petroselinum*, *Ruta* and *Allium sativum*.

A second important complaint was that of an impure liver, usually due to a collection of impure, undigested or excessively viscous humours. Plants thought to be purifying were *Origanum*, *Potentilla* and *Hypericum*.

Temperature could also affect the functionality of the liver. A heated liver would produce an unbalanced mixture of humours (see chapter II) and a cold liver would not digest food and humours as it should, producing excessive phlegm and possibly causing obstruction (Johannitus 1974). Cooling plants were needed in the first instance, such as *Atriplex hortensis*, *Chicorium intybus*, *Solatrum niger* and *Viola odorata*. Cooling and drying plants might have been used when an excess of hot humours was present: *Berberis*, *Citrus medica*, *Rosa*, *Santalum* and *Vitis*. For a cold liver the kind of plants used would have been *Piper nigrum*, *Cuminum* and *Serpillum*.

As with the blockage of the liver, there are other conditions affecting this organ which are not strictly connected with the theory of humours. Hardness of the liver is one example, and the plants used are chosen for their intrinsic properties, independently from their temperaments. Thus, *Althea*, *Mentha*, *Melissa*, *Bryonia*, *Costus* and *Capparus* have different temperaments but they all possess *virtutes dissolvendi et consumendi, mollificativa et resolutiva* (**traduci**). The same is true for plants used for tumours or swellings, which were chosen more for their *virtus dissolvendi* (*Artemisia absinthium*) or following the doctrine of Signature (yellow blossoms = yellow bile) than for their humoral balance (Stannard 1988).

The last category of disease deals with the painful liver. The pain can be caused by a variety of causes, like obstruction, cold liver and/or humours or no obvious cause. Some of the plants used were *Foeniculum*, *Laurus*, *Cichorium endivia*, *Matricaria*, *Asarum europeum*, *Pastinaca sativa* and *Prunus cerasus* (Stannard, 1988).

## V.2. *The plants in the recipe*

The plants used in the recipe will be studied for their use by classical and medieval medical authors

*Nasturtium officinale* R. Br. / *Lepidium sativum* L.

Cruciferae

**Watercress**

In the codex, Guasparino uses various names (see above) that in all probability refer to the same botanical entity, *Nasturtium officinale* R. Br. / *Lepidium sativum* L. (Watercress) of the Cruciferae family. This confusion was not uncommon in the Middle Ages, since the vernacular name **was** the scientific name, especially for exotica (Stannard 1985b), and since naturalistic illustrations of plants were usually extremely rare. Moreover, in this particular case it is possible to pinpoint one precise source of confusion. The Greek name for some plants of the Cruciferae (*Lepidium* and *Eruca*), *kardamon* (Hippocrates, On Regimen 54 (VI 558L)) was often confused with *kardamomon*, the Greek name for small cardamon (Meyerhof, 1979); hence the ambiguity in several Medieval herbals and in Guasparino's.

Watercress was well known in Antiquity and it is referred to by Hippocrates (On Regimen 54 (VI 558 L.), Theophrastus (Enquiry into Plants, 1.12.1-7, 7.1.2-3, 7.1.6, 7.4.1, 7.5.5), Celsus (De Medicina, I.200 ff., I.210), Dioscorides (2.284) and Pliny (20.50). Maimonides' *Glossary of Drug Names* (Meyerhof, 1979) lists it under the name *huruf*.

While Celsus simply regards *kardamon* as a food and a diuretic, the Hippocratic physician of 'On Regimen' was able to give some indications as to its properties and contraindications. Thus, 'it is heating and melts the flesh', but 'it congeals the white phlegm (causes strangury), and its use should be controlled and it is forbidden for the phlegmatic individual' (Stannard, 1961). Gargilius Martialis, a Roman *medicus* whose texts were very influential in the Middle Ages (Riddle, qqq) gives a detailed list of actions and indications for watercress. According to him, it can be used for coughs and pain in the chest, for dandruff and baldness, sciatic pain, snake poison, teething, toothache, ulcers and worms. He agrees with Hippocrates about its heating ('caustic') property, and he likens it to *Ruta* for its action against libido, perhaps because it destroys sperm with its excessive heat. It is used to 'mature' boils and carbuncles, as a purgative and to loosen up the phlegm that collects in the chest (Tapper, 1980).

If we move on to texts and herbals around the time of the Salerno school, we find more detailed descriptions, which tend to confirm prior uses but add new ones and offer a more detailed grading of the temperament. Trota of Salerno (Hiersemann, 1921) cites *nasturtia*. The famous *Flos Medicinæ Salernitanæ* (Pazzini, 1954) reports its ability to maintain healthy hair and to relieve toothache. The *Tavola Salernitana* (Caturegli, della Capanna, 1968) has *Nasturtium* as hot in the 3rd degree and dry in the 4th degree, and as provoking menstruation and haemorrhoids (these last two being properties not accounted for by the temperaments, but rather by an un-mentioned 'virtus aperiendi').

Rufinus, in his *Herbal* (Thorndike, 1946), for *Nasturtium* records a description in the *Macer Floridus* almost identical to that of Gargilius Martialis, but also reports also it as being hot and dry in the 4th degree and as being able to eliminate excess of humours (*superfluum humiditatem cerebri*) when used as a sneeze, to mature undigested ones (*humore glutinoso*) and to replenish exhausted ones and soothe the nerves after a fever.

*Nasturtium*'s resolute and maturative properties are stressed by Albertus Magnus in his *De Vegetalibus* (Biewer, 1992), who likens it to raphanus and mentions a specific warming and drying action on stomach and liver. Albertus suggests an aperient action when he says that it enhances menses and 'pushes' the foetus. Interestingly, he also thinks that *Nasturtium* is good for coitus, a claim somehow in contradiction with other authors warning about the dangers for the sperm and the dampening effect on libido. A similar position can be found in the various manuscripts of the *Tacuinum Sanitatis* (Cogliati Arano, 1976) where the action of watercress is to increase coitus and sperm! The temperament they ascribe to *Nasturtium* is hot and dry in the 1st degree; this difference in temperament might explain such a different description (hot and dry temperaments are usually thought of as tonics (Stannard, 1988), but an excess of heat can be destructive).

Watercress is the single remedy most often used by Guasparino in the chapter on powders (present in 16 recipes over 32), and it is represented well over the whole of the *Antidotarium* (29 recipes over 346). It clearly represented an important simple in Guasparino's *Materia Medica*, and his use of it reflects contemporary knowledge; Nasturtium is present in recipes for headache, stomach problems, digestive problems, liver block, stones, excess of humours, pains from cold and diarrhoea.

Later herbals continue to mention Nasturtium both in Italy (*Herbolario volgare*, 1979; Gasparini Leporace, Pollacci e Maffei, 1952; Durante, 1585) and outside (Bahn, 1940; Ebel, 1939), with very similar descriptions.

The rationale behind the uses of Nasturtium resides both in its balance of humours (its temperament as explained by the Humoralistic theory) and in its intrinsic properties not formally explained by theory. Thus its actions on different members like liver, brain and stomach and its action on pains caused by cold can be ascribed to its heating and drying properties. But other of its actions are, at least in part, accounted for by unexplained intrinsic properties (maturative, resolutive, aperient). In fact, the uppermost activity of Nasturtium seems to be that of 'resolving' or 'maturing' excesses of putrid, cold or raw humours.

*Pimpinella anisum* L.

Apiaceae (Umbelliferae)

### **Aniseed**

Pimpinella is probably one of the oldest known herbs to be used for medicinal purposes. The Greek name for it, *Anison*, comes from Egypt, the region where the plant probably originated (Meyerhof, 1979). Theophrastus (I, 12, 1), Celsus (I.200 ff., 490. I.206, 210, 340, 418) and Dioscorides (III, 56) mention it. Maimonides calls it Anisun and says it is 'the seed of the "Roman fennel".' (Meyerhof, 1979). Celsus uses it for flatulence and as a diuretic.

Around the 11th-12th century it is mentioned by Trota (Hiersemann, 1921) and by Constantine the African (Malato, Martini, 1962); according this author, Anise increases the semen, excites coitus and, like Ginger, increases libido (*venerem movet*). Anise is also listed in the *Tavola Salernitana* (Caturegli, della Capanna, 1968) as hot in the 3rd degree, and as a hot diuretic. Moreover, the flowers have the ability to provoke internal sweat (*de provocantibus sudorem intus*). The *Regimen Sanitatis Salernitanus* (Barbensi, 1947) claims that the best variety is the sweet one and that it clears the face and it supports the stomach.

We can already see that independently from the actions related to its temperament, Anise 'opens passages'. This impression is confirmed by Albertus Magnus (Biewer, 1992), who makes specific mention of this intrinsic 'virtus aperiendi', the capacity to open and force things out of passages, and to the derived capacity to increase lactation, urine flow and menstruation, and to purge leukorrhoea and poison, and to solve kidney blocks.

A further confirmation comes from Bernard of Gordon (1550) who stresses that the aromatic seeds of Fennel and Anise are hot and dry and exceedingly aperient and *subtiliative* (they render subtle) in relation to the material in the stomach, so much so that they have to be counteracted by styptic simples.

Rufinus (Thorndike, 1946) adds that Anisun supports stomach, liver and spleen, and that it solves indigestion, acid regurgitation and intestinal colics.

A glossary of medieval terms of the XIV century (Masino, 1988; Russo, 1991) reports these properties for Pimpinella: stomachic, digestive, carminative, pectoral, galactagogue and useful for colics.

Aniseed is certainly an important plant for the *Materia Medica* of Guasparino. It appears in 13 recipes in the chapter on powders and in 22 over the whole of the manuscript. The author uses it in recipes for excess of humours when it causes head problems (headaches, vision problem, humours in the head) or when it causes digestive problems (cold and contaminated stomach, vomit, indigestion, constipation, liver disease).

A later author, Hermannu de Sancto Portu (Ebel, 1939), reports for Anise the same actions of earlier writers, adding that it is hot and dry in the 2nd degree, and that fumigations with it are beneficial for headaches and in general for excess of humours. Castore (1585) gives both internal and external uses, and describes the use of the 'smell' of Aniseed (perhaps fumigations) for hiccup, insomnia and renal stones, and the tradition of putting the seeds under the pillow to avoid nightmares. As an internal remedy, since it is hot and dry in the 3rd degree, it cures all the ailments due to cold and wind, and purges the stomach of excess of humours.

There is no doubt that the most prominent property of Anise is its 'virtus aperiendi', its capacity to open passages and free the flow of humours and drain excesses from various members, in particular the brain (usually from phlegm), the liver (usually from cholera) and the stomach (cold or undigested humours), and the promotion of physiological activities like lactation, urination, and semen production. These actions are relatively unrelated to the Humoralistic framework. However, actions are never clearly attributable to a single factor, and certainly the heating and drying properties play an important part both in the resolution of humoral imbalances (by drying up excesses and by heating cold humours) and in the influencing of activities (tonifying action on libido). Important also are the organoleptic properties, whereby the aromatic component of aniseed accounts for its calming and cleansing actions.

In modern folk tradition, Aniseed is still used as a strong infusion or decoction for intestinal colics. Oil of aniseed diluted in double the amount of spirit is used for hair lice (Coltro, 1983), probably a derivation of the Medieval use to clear putrid humours and dandruff in the head.

*Pistacia lentiscus* L.

Anacardiaceae

### **Mastic**

Mastic is the resin obtained from the tree *Pistacia lentiscus* L. Although now cultivated in the western Mediterranean region, the tree originated in the eastern regions, and during the Middle Ages both the resin and parts of the plant was imported, and as such were considered exotica (Riddle 1992).

Moses Maimonides (Meyerhof 1979) gives three botanical sources for mastic: *Mastika*, the Arabic-Syriac transcription of the Greek term *mastikhe*, which designates *Pistacia lentiscus* L.; *Habba Hadra*, which collapses two species in one, *Pistacia lentiscus* and *Pistacia therebinthus*; *Butm*, which again designates both 'the mastic tree *mastaka*', really *Pistacia therebinthus*, and 'the wild therebinth...*ad-darw* (the lentisk)', really *Pistacia lentiscus* L.

It was certainly well known in Salerno, since it is cited by Trota (Hiersemann 1921), Circa Instans and Alexander (both quoted by Rufinus, in Thorndike 1946), and Constantine the African (Malato and de Martini 1962).

Rufinus (Thorndike, 1946) has Dioscorides explaining that mastic is the resin of the tree called lentiscus. He then quotes from the *Circa Instans*, *Alexander*, the *Liber Graduum* and *Ysaac*.

All the authors agree that Mastic is hot and dry in the 2nd degree. Circa Instans and Alexander give a detailed description, claiming that the resin has styptic, vulnerary, consolidating and supporting properties. Its main action is said to be on stomach and digestion in general: it supports digestion in convalescents and debilitated patients, it eliminates wind and abdominal distension, it calms the vomit and violent diarrhoea. It also prevents problems and aches by controlling the flow of humours from the head to the eyes and teeth and from the stomach to the head, and by eliminating superfluous humours from the brain. It heals the gums and consolidates the teeth. It reduces swellings and distension in liver and intestines by consuming cold humours (by drying and heating actions) and reduces the yellow bile of furuncles and boils.

The Tavola Salernitana lists lentiscus as a styptic, dry in the 2nd degree (the resin) or in the 3rd (the lentiscus). As with almost any simple in the hot and dry category, Constantine the African considers it a tonic for libido (*coitus excitant*).

Although present in only nine recipes of the chapter on powder, mastic is probably the most used plant in the Antidotarium, being present in 38 recipes out of a total of 346. Guasparino seems to follow the Salernitan rationale for its use, another confirmation of the strong influence of those works on our author. He uses Pistacia in recipes for cold and cold humours, and pain caused by cold. Many recipes deal with the digestive tract, and we find recipes for stomach, liver and digestive problems, vomit and constipation. The oil of mastic is said to soothe the nerves and joints, and to 'reduce' hard swellings and pain.

Guasparino describes also the external use of Mastic as a vulnerary, for broken bones, for red pustules, for cancer and fistulae.

A diary of a XIV Century apothecary in Imola (Gaddoni and Bughetti 1995) has eleven entries for Mastic (mastrexe) between May 1356 and October 1367.

Durante (1585) too distinguishes between internal and external uses. Internally he uses fruits, roots, barks and leaves for dysentery and diarrhoea, blood in the sputum (or vomiting blood; 'sputi del sangue'), gastrointestinal and uterine ulcers. He uses the resin for weak stomach, intestines and liver, and for 'old' coughs. Externally he uses a decoction of the leaf as a vulnerary and astringent (plaster for wounds and broken bones, mouthwash for gums and teeth, and as a lotion to stop menorrhagia)

The most important action of mastic is again an action not directly understandable through the humoral theory. It has the ability to draw things together thanks to its 'constrictive', 'glutinous' nature. It is therefore a vulnerary and a styptic, but also a 'reductive' in that it reduces excess humours. By the same token, it is a supportive remedy that renders things more solid and strong. Being hot and dry it is a tonic and comforts all members of the body, especially the liver and stomach.

*Dianthus barbatus* L. (Caryophyllaceae)/*Sygyzium aromaticum* (L.) Merr. et L.M. Perry (Myrtaceae)/*Nardostachys jatamansi* DC. (Valerianaceae).

The uncertainty about the identity of this plant comes first of all from an uncertainty about which botanical entity the author refers to when he uses the term 'foljio', whether it is *Nardostachys jatamansi* or 'garofali' (Castellani, 1959). The second source of uncertainty is the identity of the term 'garofali' which could refer to *Dianthus barbatus* or to *Sygyzium aromaticum* (Daems 1993).

Included among the hot and comforting styptics in Tavola Salernitana (Caturegli et al. 1968), it is said by Rufinus (Thorndike 1946) to be a comforting remedy for convalescents and a specific simple for supporting a weakness of the heart, either caused by excess cold, excess heat, obstruction or depletion of the 'spiritum' (vital pneuma. See chapter II); however, it should not be used when the weakness is caused by a depletion of humours. It is also indicated for liver pain, stones and kidneys problems.

After *Nasturtium*, *Pimpinella* and *Pistacia*, this is the most used plant in the chapter on powders (it is present in 13 recipes), and indeed one of the most used ones in the Antidotarium (28 recipes overall). For Mo Guasparino the single most important indication for 'garofali' seems to be stomach problems, usually of the cold type or with excess of black bile (110, 114, 115, 117, 127, 203, 294). Other uses of 'garofali' and 'foljio' include aid to digestion (103, 201), resolution of stones (104, 128), liver obstruction (105) and sudden diarrhoea (211). It is used as a laxative (112, 124) and is present in a recipe for the heart (a cordial: 116) and in one for the quartan fevers (205).

An apothecary's book (Gaddoni et al, 1995) reports twenty-nine entries for 'garoffani, garafani' between 1356 and 1367.

[gariofilus in TS 'de stipticis calidis confortantibus'].

[ spica nardi in TS 'de diureticis calidis' and 'de vomitum provocantibus']. Nardus in Rufinus (Thorndike 1946) (lunga lista vedere prima se ne val ela pena)

*Myristica fragrans* Houtt.

Myristicaceae

### **Nutmeg**

Nutmeg is certainly one of the exotica in the recipe. It is indigenous to the Molucca Islands, and, according to Meyerhof ( ), the Greeks did not mention it other than during the Byzantine period. The nut was introduced by the Arabs to Europe in the second half of the twelfth century (Evans 1989: p. 450). Maimonides (Meyerhof 1979)( ) gives the Arabic name of Gawz Bawwa, meaning nut with a scented aroma. One reason to believe that the remedy was available to Italian physicians in the 14th century is the twelve entries in an apothecary's book (Gaddoni *et al*, 1995) between 1356 and 1367 for 'nuxi moscatte'.

Its 'intrinsic heat', similar, according to the ancients (Mantegazza, 1988), to that of Cinnamon and Frankincense, linked Nutmeg to the realm of the sun, to the spiritual world, and because of this, the plant was thought to be particularly useful in purification of the terrestrial putredines (let's not forget the psychotropic properties of nutmeg!). There is no doubt about the heating and supporting (note) properties accorded to this remedy by the Salernitan authors: in the Tavola Salernitana (Caturegli *et al*. 1968) it is a styptic remedy hot in the 2nd degree, which supports the heat ( ). Indications for use in Rufinus (Thorndike 1946) are cold stomach, indigestion and (pallor/jaundice), painful stomach and intestines and blockage of the liver passages. Reflecting the above-mentioned supposed link of nutmeg with the spiritual realm, it is said to comfort the spiritus and the brain, and to reduce excesses of humours in the head.

Guasparino uses nutmeg extensively for cold or depleted conditions, as in the recipes for cold or excess of melancholy in the stomach, or for indigestion (105, 114, 117, 127, 197, 201), or as in the cordial one (116) and in the one 'to give a good colour' (103). Its depurative properties are put to use in recipes for liver problems or liver stone (104, 105, 128), for headache and eyesight problems (106, 200) and for excess of sputum, viscous humours (constipation) and bad breath (208, 112, 202).

*Carum carvi* L.

Umbelliferae/Apiaceae

### **Caraway**

Cited in Dioscorides (III, 57). The name comes from the Greek *karo* or *karyia* and was known in Latin as *carnabadium* (Meyerhof, 1979). Quoted in *De Aegritudinem Curatione* by Trota (Hiersemann 1921), it is classified as a hot diuretic and dry in the 3rd degree by the Tavola Salernitana (Caturegli *et al*. 1968), and it is said by Rufinus (Thorndike 1946) to be supporting for the digestion and for the stomach, to cause appetite and urination and to expel wind. It is also beneficial in case of the disease of the stone and it kills intestinal 'worms'. Albertus Magnus (Biewer 1992) reports it to be hot and dry and agrees with Rufinus (Thorndike 1946) on the other properties.

Caraway is present in 10 recipes of the chapter on powders. The author makes use of its heating and drying properties by using it in many cases of cold or excessive humours affecting the stomach or the liver (105, 110, 127, 128, 201, 333), and in laxative recipes (where it might have played the double role of carminative and of counteracting the damaging effects of purgatives like Senna or Rhubarb; see 123, 124, 131).

*Salvia officinalis* L.

Lamiaceae

**Sage**

According to Hort (1916), the sages Theophrastus writes about (6.1.4; 6.2.5) are *Salvia triloba* and *Salvia calcyna*. The *Tavola Salernitana* (Caturegli et al. 1968) lists *Salvia agrestis* as a haemopoietic, and the author of the *Regimen sanitatis salernitanum* (Barbensi 1947. Pazzini 1948) holds sage in such a great esteem that the reason why it cannot prevent death, he writes, is that no medicament can. He then goes on to say that *Salvia* comforts the nerves, stops the tremors and calms acute fevers. A recipe is then given to heal the 'paralitica membra'\*\*\*, containing sage, castoreum (see note n. ), lavender, primula, nasturtium and athanasia \*\*\*.

Pseudoapuleius (Howald and Sigerist 1927: CII) gives two indications for *Salvia*: perianal and urethral pruritus or irritation.

It is warm in the 1st degree and dry in the 2nd according to the *Tacuinum Sanitatis* (Cogliati Arano 1976: Paris f. 34) and it is good for paralysis and the nerves\*\*\*.

Rufinus (Thorndike 1946) highlights the purifying and solutive properties of Sage, with particular regard to gynaecological problems, and its aperient action on the urinary tract and digestive system.

*Glycyrrhiza glabra* L.

Leguminosae

**Liquorice**

Cited by Theophrastus (IX, 13, 2) and Dioscorides (III, 5). Maimonides (Meyerhof 1979) gives the Arabic name, which is *Sus*.

Liquorice is mentioned by Trota of Salerno (Hierseman 1921) and is listed in the *Tavola Salernitana* (Caturegli et al. 1968) as a humid diuretic. Rufinus (Thorndike 1946) gives a list of properties for Liquorice: it is good for coughs and bad chest, it soothes 'roughness' of the stomach and the throat and mitigates kidneys and bladder pain. It is a diuretic and an emmenagogue, it heals all the swellings and it keeps the fever down.

Liquorice is present in only 9 recipes of the *Antidotarium*, 6 of which in the chapter on powders. It is used mainly as a laxative (107, 123, 131) but is also present in recipes for cold or excessive humours (105, 117, 208) Although this might seem a contradiction because of the humid nature of Liquorice, its function in the recipe might be one of preventing the damage that the very hot and dry plants might cause (see section VI. 3). Because of its slight aperient nature (it is a diuretic) its use for liver stones might have the double rationale of helping the other remedies in opening the passages, and of restraining their excessive activity.

*Levisticum officinale* W.D.J.

Umbelliferae / Apiaceae

### **Lovage**

Cited in Dioscorides (III, 51), and in Maimonides (Meyerhof 1979), which gives the Arabic name *Kasim*

Listed as a hot diuretic in the *Tavola Salernitana* (Caturegli et al. 1968), it is another example of a plant with an aperient property, as testified by the description by Rufinus (Thorndike 1946), who writes of *Levisticum* that it is an aid to digestion and is used for distension, and for obstruction of liver and spleen. It is useful against wind and pain in stomach and intestines, and it is a diuretic and an emmenagogue.

Guasparino seems to use the plant in a similar way, since he has it in recipes for the liver occlusion and for the stone (105, 104), for generalised cold and cold stomach (126, 117, 105), for headaches and eyesight problems (both of which were usually caused by excess of humours that needed to be drained or resolved, hence the use of aperients; see 106, 126, 222), and flank pain (again usually caused by blockage; see 209).

*Mentha* species

Lamiaceae

### **Mints**

Mention to mints can be found in Hippocrates (Jones 1931: Bk II. 54.37); Gargilius Martialis (Tapper 1980: 24); Pliny (Jones 1969: 20.53.147-51); Dioscorides (Wellmann 1958: 3.34).

Avicenna (1930) states that Mint is hot and dry in the 2nd degree, strengthens the stomach and prevents decay, and that it soothes phlegmatic nausea, strengthens the appetite and renders subtle.

In her extensive review of the uses of Mint in ancient history, Tappert (1980) gives a list of 17 indications ranging from digestive to gynaecological troubles, from convulsions and fainting to burns and bruises.

With reference to the digestive system it is said that 'Mint was beneficial to all parts of the digestive system and the liver and the spleen' (Tapper 1980: 156) and that Gargilius uses dry powdered mint in hot water to clean everything harmful to the stomach (Tapper 1980: 24)

*Calaminta*, *menta* and *mentastrum* are mentioned in *De Aegritudinem Curatione* by Trota (Hiersemann 1921). The last two are also listed in *Tavola Salernitana* (Caturegli et al. 1968) as provoking menses and hemorrhoids, while the *Regimen Sanitatis Salernitanum* (Barbensi 1947) stresses mint's good anthelmintic property.....

Rufinus (Thorndike 1946) gives also an impressive list of indications for mint. Of interest here its aperient action, its cleansing and reducing properties and its heating and supportive qualities .

Dynamidia: Cooling [Warming in some later Mss]..

*Cuscuta epithymum* (L.) L.

Convolvulaceae

**Dodder**

Cited in Dioscorides (IV, 177), and in Maimonides (Meyerhof 1979) under the Arabic name of Kasut. According to Meyerhof (1979) fresh dodder juice was used as a constituent of hepatic and gastric remedies.

Cited in De Aegritudinem Curatione by Trota (Hiersemann 1921), Dodder is hot and dry in the 3rd degree according to the author of the Tavola Salernitana (Caturegli et al. 1968); both this author and Rufinus agree on the purgative qualities of Dodder, in that it is a hot diuretic and drains phlegm and melancholy. Moreover, it can be used for the quartan fevers, for haemorrhoids and all the diseases from melancholy. It reduces spleen swellings? and can be used in case of strangury .

*Origanum majorana* L.

Lamiaceae

**Sweet Marjoram**

Cited in Theophrastus (VI, 1-8) and Dioscorides (III, 39). Its Greek name is *myos otis*, its Arabic name *adan al-far* and its Persian one *Marzangus* (Meyerhof 1979).

The Tacuinum Sanitatis (Cogliati Arano 1976:Vienna 33v) considers Origanum warm and dry in the 3rd degree. The best quality is the small and aromatic one which is useful for cold and humid stomach. It purifies the blood and it is good for cold/humid temperaments, old people and the autumn season.

Rufinus (Thorndike 1946) quotes it as being used for cold diseases, such as cold and painful stomach, depleted digestion and wind, and cold humours in the head. Also used to supports all the members (organs) and to purge superfluous humours from the uterus.

Similarly, Guasparino uses it for cold humours and gout (88, 333), indigestion and liver occlusion (105), as a cordial (116) and 'to give a good colour' (103). Interestingly, considering the modern use in aromatherapy, it is present in a recipe for muscle, shoulder and knee aches (78).

*Lavandula* species

Lamiaceae

**Lavanders**

The name of the genera, *Lavandula*, comes from the Syriac *Lebonta* (Meyerhof 1979).

Trota, in her De Aegritudinem Curatione (Hiersemann 1921), cites 'spica', and we find 'sticados' in the Tavola Salernitana (Caturegli et al. 1968), in the list of the remedies which cause haemorrhoids and menstruation, and which are hot comforting styptics and dry in the 2nd degree

Guasparino uses it for digestive (201) and liver problems (105, 213) as well as for cold stomach (117, 213). It is also used in recipes for the quartan fever (205), constipation (120) and to soothe the nerves (72, 74).

*Crocus sativus* L.

Iridaceae

**Saffron**

Present in Theophrastus EiP (4.3.1; 6.6.5, 10; 6.8.3; 7.7.4; 9.7.3), Celsus (I. 296, 316; II. 6, 10, 20, 22, 54, 168, 194-220, 214) which uses it as a diuretic, an antidote, an ointment for headaches, a wound cleanser, a remedy against scabies and an ingredient of eye salves. Dioscorides (I, 26-27 and 54) and Albertus Magnus (Biewer 1992: VI. 297-98).

According to Mantegazza (1988) crocus was appreciated by the ancient authors not only for its purported pharmacological activity, but also because of its intense red colour, which was responsible for Saffron's action over the sexual energies and the genital apparatus.\*\*\* guarda Costant Afric

A '*Crocus affricanus*' is mentioned by Trota (Hiersemann 1921) in *De Aeplitudinem Curatione*. According to the *Tavola Salernitana* (Caturegli et al. 1968), crocus is hot in the 2nd degree and dry in the 1st or 2nd degree, it is a comforting styptic and causes vomit. (or eruption?). In the *Regimen sanitatis salernitanum* (Barbensi 1947. Pazzini 1948) it is said of crocus that it is a supporting (note) of the depleted organs and it heals the liver.

*Cuminum cyminum* L.

Umbelliferae/Apiaceae)

**Cumin**

Cited in Theophrastus (VII, 3 and VIII, 8), Dioscorides (III, 20) and Maimonides (Meyerhof 1979).

The *Tavola Salernitana* (Caturegli et al. 1968) reports it to be hot and dry in the 3rd degree; Albertus Magnus (Biewer 1992: VI. 303) agrees on the temperament and goes on to write that it expels and resolves wind, and that it possesses the drying and styptic virtues. According to Rufinus (Thorndike 1946) Cumin has a particular affinity for liver, being used for pain in the liver and jaundice. Its heating temperament makes it useful for all sorts of cold derived illnesses or for depleted conditions, while its styptic nature makes it a good remedy to reduce excesses and excessive flows and wind. Not only it is good for these illnesses, it also relieves the pain caused by them.

We find the same indication for pain in Guasparino, where he uses Cumin for pain in the body (33), injured but not broken bones (40) and the beginning of a disease or a pain (24). Used often also for cold or contaminated stomach (115, 117, 105, 333).

*Papaver somniferum* L.

Papaveraceae

**Opium Poppy**

With no doubt one of the *exotica* in the *Antidotarium* with the most ancient record. Scarborough (1995 :pp. 4-23) gives many sources in the ancient world which clearly referred to the Opium Poppy: Homer's '*Odyssey*'s, Theophrastus' '*Enquiry into plants*' (1.12.2), the Hippocratic Corpus (*Regimen Hippocratis*: 45.29), Dioscorides' '*De materia medica*' (IV, 647. Latin Dioscorides 59-60), Pliny the Elder's '*Natural History*' (29.76.198-78.206), Galen's '*Antidotes*' and '*Compounding drugs according to place [on the body]*' and Celsus' '*De medicina*' (I. 210, 272, 296, 418, 448, 458; II. 54, 60; however,

according to Spencer [1938] he refers here to *Papaver rhoeas*). Dioscorides uses poppy latex in a recipe for earache containing also almond oil, saffron and myrrh (Scarborough 1995: 13-14. See Gargilius Martialis). Nicander of Colophon (II century BC) lists some antidotes to poppy poisoning: 'hot wine, grapes syrup, oil of roses, olive oil and Iris oil' (Scarborough 1995: 11)

Maimonides (Meyerhof 1979) has two entries, one for the latex from opium poppy (35, Ufiyun) and one for the opium poppy itself (401, Hashas).

Dynamidia (Rose 1963) characterises *Papaverum* as 'restringent, replenishing and most strong'.

Gargilius Martialis ( Tappert 1980: 19) gives the use of *meconium* (cooked head and leaves) for 'ills of the body which demand moderate cooling'. Various part of the plant can be used for earaches (juice with rose oil), joint disease (leaves cooked in rose oil), sleeplessness (decoction of the heads) and swellings (crushed seeds with vinegar and honey). The author of the *Tavola Salernitana* (Caturegli et al. 1968) lists the Opium Poppy as a humid diuretic and as a sudorific. Rufinus (Thorndike 1946: 2) reports its use to treat hot abscesses, a heated liver, the sacred fire (?) and in general all excesses of heat. Because of its humidity, it is said to be useful against dry conditions (particularly in the chest) and consumption of the organs. It is said to cause sleep and (in slight contrast with its diuretic activity) to be useful against diarrhoea and menorrhagia.

A search in a 14th century apothecary book has revealed seven entries for 'pavaro' (Gaddoni *et al.* 1995).

Guasparino has used *Papaverum somniferum* only in the recipe under study, and has used *Papaver rhoeas* only in other two recipes (103, 190).

#### ?Elettaria? or Nasturtium?

[cardamomum in De Aegritudinem Curatione HIERSEMANN by Trota (Hiersemann 1921); grana solis in TS 'de diureticis calidis' ] in Rufinus (Thorndike 1946): 35. Amomum./ Menstrua provocat. Dolorem vule placat. Epilenticis nefreticis et podagricis optimum est. Ad crapulam et ebrietatem disolvendam est."

### V.3. Analysis

When looking at the contents of the recipe, two things are evident, first that the author has used a great number of plants (eighteen), and second that there are plants that, at least in the Middle Ages, were not widely available in the Mediterranean regions and would have been difficult and expensive to obtain, the so-called exotica: *Pistacia*, *Dianthus* or *Syzygium*, *Myristica*, *Papaverum*, *Nardostachys jatamansi*, *Elettaria cardamomum*, *Crocus sativus*.

This last observation should not surprise us, since a major part of the drugs used in early Middle Ages Antidotaria were of eastern origins (Riddle, 1992). As Stannard (1985b) points out, the mere fact that the plants are mentioned in a recipe does not grant that the plants were actually available, and that is why an analysis of contemporary apothecaries' books (Gaddoni et al. 1995) and of possible contrafactions\*\*\* or qui-pro-quo (Cappelletti ) is a better tool in providing evidence for actual availability.

The rationale for the utilisation of these exotica in the recipe under discussion follows in my opinion the general tendency of the period, which was to use them as 'stimulants for such things as syncope and chronic catarrh, as antispasmodics and a 'comforter' of stomachic and intestinal disorders, and as a remedy for various nervous afflictions' (Riddle, 1992).

As for the polypharmacism, a look at the other recipes in the chapter on powders (and, for that matter, in the rest of the Antidotarium) will reveal that it is quite a consistent strategy for Mo Guasparino. The average number of plants used in a single recipe is 10.4, and even without counting those recipes with a exceedingly high number of plants, the average remain 9.7; moreover, the 50% of all the recipes in the chapter on powder include between 6 and 13 plants.

It has already been pointed out (Chp. I) that this polypharmacism is an indication of the influences of Arabic medicine on the Author. But what were the theoretical justifications for using compound

recipes? Matthaeus Platearius (1974: 787), an author most certainly read by Mo Guasparino, gives three main reasons.

The first one is that by using different plants we can achieve greater efficacy than by using simples when treating diseases which are of a composite nature. [Composite diseases call for composite medicines, and simples are not enough.]

Secondly, there is the case of the combination of illnesses which affect the body in different ways (i.e. when one is heating and the other is cooling); since one medicine is unable to have different effects on different balances, compounding is again the best way to deal with the problem.

Thirdly, the compounding of plants could be used to repress the harmful properties of some plants with the opposite properties of other plants (i.e. in a disease of a cold and humid temperament hot and dry plants are used to address the imbalance of humours, while a cold and humid plant is used to lessen the violence of the previous plants and avoid damage to the organs) or with specific, restorative properties.

This last point is, as we shall see, of particular importance in determining the rationale of the recipe. For the same reason, we need now to examine how the contemporaries of Mo Guasparino would have considered and treated the illness he is addressing with this recipe.

The heading of the recipe reads 'Indigestion, catarrh, liver obstruction'. According to Johannitus (1974) indigestion is caused by a lack of *operative energy* and by cold, which lead to incomplete digestion and transformation of food into humours in the liver, with subsequent overabundance of white (cold) phlegm (the catarrh of the title). This conditions of cold and excess of humours are amongst the most common causes of obstruction of the liver. ( ) (Bernard of Gordon 1974: 789. Avicenna 1930. Johannitus 1974).

The phlegmatic matter needs hot and dry conditions in order to be digested. This can be achieved with hot and dry herbs; however, care must be taken that excessive external heat does not make the humours decay, rather than to mature. This danger can be avoided by mitigating the heat and dryness of the herbs by adding cold and humid remedies.

The second step is to use remedies which 'render subtle' (Mentha, Pimpinella according to ) in order to counteract the gross, viscous and ventose phlegm, and remedies which evacuate the crude humours (aperients and solutive herbs). Again, care must be taken that the solutive remedies like Pimpinella ( ) (potentially dangerous because of their strenuous action) do not cause harm to the liver (which, because of its porousness, is very responsive to dissolution. Matt. Plat). They should therefore be counteracted by styptic remedies like Mastik and Garyophillos (probably Sygyzium aromaticum) (Matthaeus Platearius 1974).

As we have mentioned before, liver occlusion can be caused by excess cold or humours constricting or obstructing the pores; it can be due to a more basic deficiency of expulsive energy. If aperient medicines are needed to open up the pores (Johannitus 1974) and hot and dry ones are needed to reduce and mature the humours, 'supporting (note)' ones (diaphoretics and carminatives) are used to tonify the expulsive energy. (Matthaeus Platearius 1974)

Going back now to the recipe, we can see that the overall temperamental balance is definitely hot and dry (15 remedies), responding to the need to mature and resolve humours and to tonify the digestive organs. The usefulness of cool and humid remedies like Glycyrrhiza and Papaver lies in their ability to counteract the violent heating and drying action of the other plants.

The second important activity of the recipe as a whole is its ability to open pores, its 'virtus aperienti', due to the presence of two important aperient and solutive plants: Pimpinella and Mentha, plus many others of slight lesser strength, such as Carum, Cuminum, Cardamon, Elettaria, etc. This activity is needed in order to open the liver pores and drain the excess of bad humours, and to allow a free flow of the matured ones. To counteract the dangers posed by too violent a solutive action on the matter of the liver, styptic and consolidating remedies have been added, in particular Pistacia, but also Crocus and, to a lesser extent, Myristica and Dianthus/Sygyzium. Every remedy has its own character besides these broad categorisations, and the reader is referred to the previous chapter to have a more complete picture. It is worth mentioning here other possible reasons for the utilisation of some of the plants. Some of them seem to be particularly indicated for their activity in 'maturing' the humours: these are Nasturtium, Cuscuta, Origanum and Mentha; others seem to have been used also for their particular restorative and tonic action, such as Salvia, Myristica Dianthus/Sygyzium, Crocus and Mentha. That the tonic, restorative action is an important one in this recipe can be shown by

comparing this recipe with another 'to help and support the heart' (Rx 116). Of the 16 plant remedies used in this other recipe, 7 are also present in our recipe. Similarly, it is possible to show similarities between this recipe and other ones dealing with cold and/or contaminated stomach (Rx 114, 115, 117).

On the bases of our knowledge of Guasparino's intellectual/medical environment, these are reasonable conclusions to draw. Naturally, there are many other factors involved too, but, as Stannard (1988) has explained, these might be obscure to us now.

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