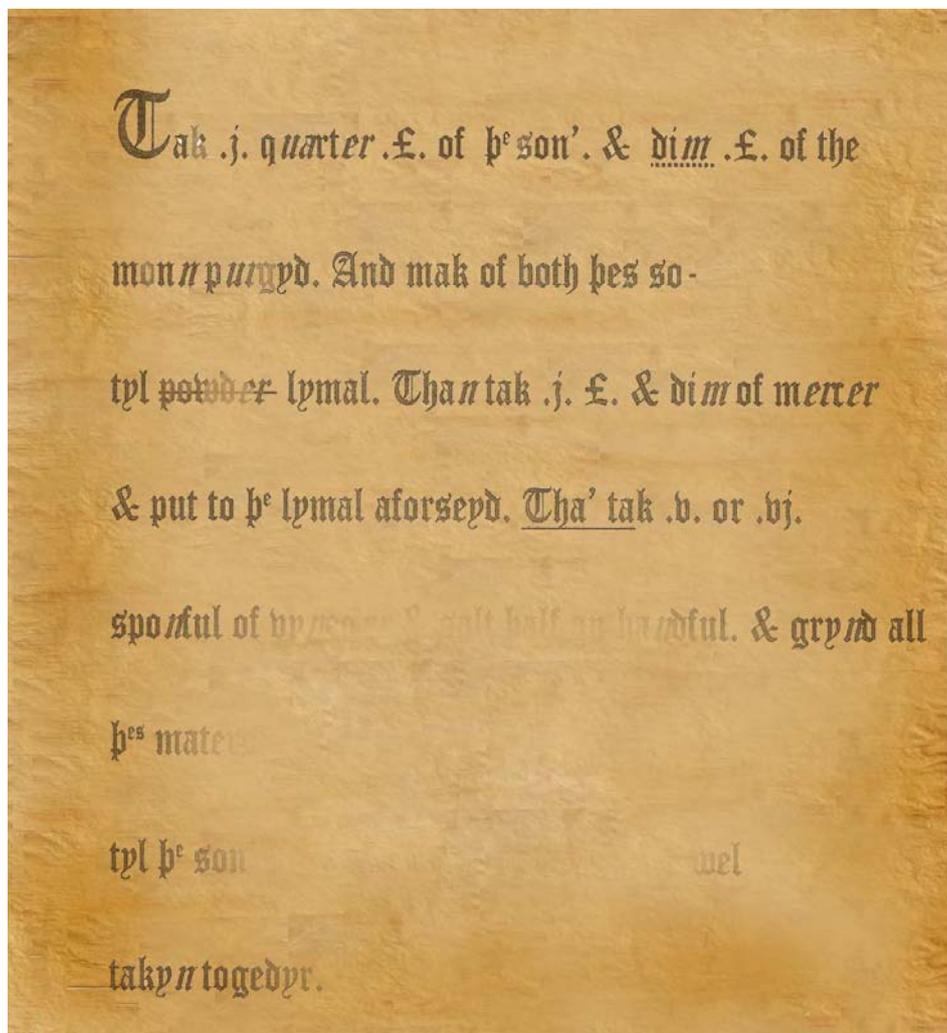


The way of obtaining the Grand Elixir:
an edition of the 'Tamyrton' text in BL Harley 1747



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Beata Wojtalik

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Author: Beata Wojtalik (Author's signature)
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Abstract

This thesis consists of an edition of an alchemical text found in the fifteenth-century manuscript BL Harley 1747. The text is catalogued as ‘The way of obtaining the grand Elixir’ and is attributed to ‘Tamyrtone’; it is, however, not obvious from the text whether the name Tamyrtone, which is prefixed to the text, is meant to refer to an author or an addressee.

The text has not been edited before. The manuscript has been dated to the fifteenth century, a period when the production of texts in the vernacular was expanding in the whole of Latin Europe. The increase of literacy was a driving force to what has later come to be known as the process of vernacularization. The late fifteenth century, bridging the late medieval and early modern periods, witnessed an ever growing interest in the translation of scientific writings into the vernacular. As such texts had earlier been available only in Latin, new terminology and writing conventions were now developed in the vernacular. This process may best be seen in texts on medicine. However, many other scientific writings, in subjects such as alchemy, astrology, astronomy, geometry, chiromancy etc., appeared in great numbers. Alchemical texts, alongside writings on medicine, seem to be the most numerous. However, while medical writings have received a great deal of attention of linguists in recent years, alchemical texts are still very little studied.

The present thesis provides a diplomatic edition of the text, with notes, glossary and translation. In addition, the thesis aims to place the text into its historical, textual and linguistic context. Firstly, it considers the text both as part of the alchemical tradition in general and as part of the vernacular text production in late medieval England in particular. The text is also be considered from the point of view of text type, a question that is made challenging by the complex conventions of alchemical texts. An attempt is made to address the question of authorship, and to shed some light on the question whether the text might have been written by or for Tamyrtone. Finally, a dialectal analysis situates the text in its geographical and linguistic context in fifteenth-century England.

The study of the text makes up Part I of this thesis, which consists of seven chapters. The second chapter provides a description of the manuscript context and the physical characteristics of the text, as well as a summary of its content. Chapter 3 examines the alchemical tradition, starting from the roots of alchemy in Egypt and going through the Greek, Chinese and Arabic fundamentals of the alchemical lore, concluding with a discussion of the alchemical practices of medieval Europe. This chapter also provides a description of the

alchemical elements and the use of mystical language in alchemical texts. Chapter 4 looks at the alchemical process as described in the ‘Tamyrtone’ text, and at the vessels used in the process of transmutation. Chapter 5 discusses the context of late medieval English text production, the text type and the authorship question, and Chapter 6 provides a brief analysis of the dialect. Finally, in Chapter 7, an attempt is made to bring together the different strands of study and make some concluding remarks on the vernacular text production in Late Medieval English based on the ‘Tamyrtone’ text.

Part II of the thesis is an edition of *The way of obtaining the Grand Elixir*, followed by explanatory notes and a glossary. The transcription made for this edition will be included in the Middle English Grammar Corpus (version 2010.1. and later; cf Stenroos *et al.* 2008-). A translation of the text is provided as an Appendix.

Table of Contents

PART I. CONTEXT AND LANGUAGE

1. Introduction	7
2. The text	
2.1. The manuscript	10
2.2. Summary of the text	12
3. The alchemical tradition	
3.1. The roots of alchemy	14
3.2. The ‘great art’ of Egypt and the theories of Aristotle	15
3.3. Chinese and Indian alchemy	17
3.4. The Arabic roots of European alchemy	18
3.5. The alchemical elements	20
3.6. The language of alchemy	23
4. The alchemical process in the ‘Tamyrtone’ text	
4.1. The process of transmutation	27
4.2. The vessels used in the process of transmutation	31
5. The context of late medieval English text production	
5.1. Scientific writing and the process of vernacularisation in medieval England	34
5.2. Scientific writing in the late Middle Ages	36
5.3. The ‘Tamyrtone’ text as a text-type	41
5.4. The authorship	43
6. The dialect	
6.1. Preliminaries: the study of Middle English dialects	
6.1.1. The variability of Middle English	46
6.1.2. Making sense of the variation: the <i>LALME</i> approach	47

6.1.3. Non-regional variation in written Middle English	50
6.2. The ‘Tamyrtone’ text	
6.2.1. The Norfolk context	52
6.2.2. The dialectal characteristics of the ‘Tamyrtone’ text	55
6.2.3. Morphology	57
6.2.4. The use of <i>he</i> for inanimate objects	60
7. Concluding discussion	62
PART II. THE EDITION	
Notes on the editorial conventions	64
<i>The Way of obtaining the Grand Elixir</i>	68
Explanatory notes	76
Glossary	78
BIBLIOGRAPHY	91
APPENDIX: the translation	98

PART I. CONTEXT AND LANGUAGE

1. Introduction

This thesis is an edition of an alchemical text on *The way of obtaining the Grand Elixir*. The text is found in British Library MS. Harley 1747, folios 41v-44r. It has no title in the manuscript; the title used here is the descriptive label given in the manuscript catalogue. The name ‘Tamyrtone’ appears prefixed to the text; it is, however, not obvious from the text whether it is meant to refer to an author or an addressee.

The manuscript is of duodecimo format and contains seventeen alchemical texts. Sixteen of them are in Latin; the ‘Tamyrtone’ text is the only text written in English. The text was localized in Norfolk in LALME, and forms the basis for the LALME Linguistic Profile 4627.

The manuscript has been dated to the fifteenth century, a period when the production of texts in the vernacular was expanding in the whole of Latin Europe. The increase of literacy was a driving force to what has later come to be known as the process of vernacularization. The late fifteenth century, bridging the late medieval and early modern periods, witnessed an ever growing interest in the translation of scientific writings into the vernacular. As such texts had earlier been available only in Latin, new terminology and writing conventions were now developed in the vernacular. This process may best be seen in texts on medicine, which ‘appear to have been in the forefront of the vernacularization movement’ (Grund, 2007: 77). However, many other scientific writings, in subjects such as alchemy, astrology, astronomy, geometry and chiromancy appeared in great numbers. Alchemical texts, alongside writings on medicine, seem to be the most numerous. However, while medical writings have received a great deal of attention by scholars in recent years, alchemical texts are still very little studied. Grund (2007: 77) suggests two reasons for this. The first one is the lack of editions of medieval alchemical texts in English, making this a little known area. The second reason is the ambiguous status of alchemy as a science. It is perceived by modern scientists as a pseudo-science or rather an occult discipline, although it was closely connected to other medieval scientific practices, especially medicine, and forms an important part of the development leading to modern natural science (Taavitsainen and Pahta, 2004; Grund, 2007: 76-77).

The way of obtaining the Grand Elixir is a fairly short and strongly dialectal text. It has not been edited before, and it is thus not easily available. This makes the text an excellent

research object for a Master thesis dealing with both linguistic and historical features. The text is written in prose and consists of a recipe for producing the Grand Elixir, also known as the philosophers' stone, and the object of desire of the medieval alchemists. No alchemist called Tamyrtone seems to be recorded and it is not obvious whether the recipe is a translation of an original text in Latin or a copy of a text originally composed in English.

The present thesis provides an edition of *The way of obtaining the Grand Elixir*, followed by a glossary, explanatory notes and translation. The hope is that, by providing a good diplomatic edition, the text will be available not only for philologists and linguists but also for historians. The transcription of the text made for this edition is included in the forthcoming version of the Middle English Grammar Corpus (MEG-C), the work which is ongoing at the University of Stavanger under the leadership of Professor Merja Stenroos. This electronic corpus includes the texts mapped in the *Linguistic Atlas of Late Medieval English* (McIntosh, Samuels and Benskin, 1986; henceforth LALME). The thesis as a whole contributes to the Middle English Grammar Project.

The second aim of the thesis is to place the text into its textual, historical and linguistic context. Firstly, it considers the text both as part of the alchemical tradition in general and as part of the vernacular text production in late medieval England in particular. The text is also to be considered from the point of view of text type, a question that is made challenging by the complex conventions of alchemical texts. An attempt is made to address the question of authorship, and to shed some light on the question whether the text might have been written by or for Tamyrtone. Finally, a dialectal analysis situates the text in its geographical and linguistic context in fifteenth-century England.

The study of the text makes up Part I of this thesis, which consists of seven chapters. The second chapter provides a description of the manuscript context and the physical characteristics of the text, as well as a summary of its content. Chapter 3 examines the alchemical tradition, starting from the roots of alchemy in Egypt and going through the Greek, Chinese and Arabic fundamentals of the alchemical lore, concluding with a discussion of the alchemical practices of medieval Europe. This chapter also provides a description of the alchemical elements and the use of mystical language in alchemical texts. Chapter 4 looks at the alchemical process as described in the 'Tamyrtone' text, and at the vessels used in the process of transmutation. Chapter 5 discusses the context of late medieval English text production, the text type and the authorship question, and Chapter 6 provides a brief analysis of the dialect. Finally, in Chapter 7, an attempt is made to bring together the different strands of study and make some concluding remarks on the vernacular text production in Late

Medieval English based on the 'Tamyrtone' text.

Part II of the thesis consists of the edition of the text followed by explanatory notes and a glossary. A translation of the transcribed text is provided as an Appendix.

2. The text

2.1. The manuscript

The way of obtaining the Grand Elixir forms part of a collection of alchemical treatises in British Library MS. Harley 1747. The manuscript is of duodecimo format; it is written on parchment and contains 17 items. The edited text is found on folios 39r-42r; however, some pages seem to have been lost from the manuscript, as there is a gap in the medieval foliation: the present text begins on a folio marked 41, which follows directly on folio 38.

The titles of the treatises contained in the manuscript are listed as follows, according to the manuscript catalogue¹:

ff. 1-14	<i>Tractatus Alchymicus Domini Johannis Sawtre Monarchi de Thorneye</i>
ff. 15	<i>Tabula Capitulorum praecedentis Libri</i>
ff. 15b-16	<i>Excerpta minutaia, e Libro qui intitulator Speculum Secretorum Alkimie</i>
ff. 16	<i>Ex Hermete</i>
ff. 16-20	<i>Expositio Ortolani super praedictum Textum Hermetis.</i>
ff. 20	<i>Tractatulus qui incipit 'Ecce quod queris'</i> <i>Tractatus dictus Prosa Aque Vite; et incipit Flores Secretorum</i>
ff. 28b-31	<i>De Composizione Lapidis Philosophorum</i> <i>Begins: 'Quoniam Ignis hujus'</i>
ff. 31-32	<i>Tractatus qui incipit, 'Quoniam in Libris Philosophorum'</i>
ff. 32b-33	<i>Tractatus qui incipit, 'Ex diversis libris'</i>
ff. 33-37	<i>Benedicti Quaestiones de Lapide Philosophorum</i>
ff. 37-41	<i>Excerptum ex Libro qui incipit, 'Quia potius'</i>
ff. 41-44	<i>The way of obtaining the Grand Elixir, according to Tamyrtone;</i> <i>in English</i>
ff. 44b-45	<i>Excerpta ex Libro duorum Verborum, qui incipit, 'Hic est Liber paritatis'</i>

¹ The catalogue entry is viewed at [URL]: <http://www.levity.com/alchemy/almss3.html>

ff. 45-48	<i>Visio cujusdam Alchymici</i>
ff. 48-51b	<i>Tractatus qui dicitur Secretum meum mihi</i>
ff. 51b	<i>De formatione Adae in Campo Damasci</i>

The manuscript was donated to the British Museum by Henry Worsley (1675-1741), the second son of Sir Robert Worsley, 3rd baronet of the Worsley Baronetcy of Appuldurcombe in the County of Hampshire. Henry Worsley was four times M.P. for Newtown, envoy at the court of Portugal (1714-21) and governor of Barbados (1721-31), captain of the Windward Islands and their ambassador to the Court of Portugal. He was also a highly respected scholar and manuscript collector. Before December 1712, he donated to Robert Harley several manuscripts from his own collection (now Harley 1585-1747, 1811, 1812) (Nuvoloni, 2008: 6).

The present text is the only English text in the manuscript among sixteen texts written in Latin. It was localized in Norfolk in LALME as Linguistic Profile 4627. The localization places the dialect approximately in the area around the villages of Holt, Glanford or Brinton, perhaps particularly pointing to the Holt area.

The text is written by a single scribe. Each page consists of 22 lines of text. It is written in a fifteenth-century minuscule script that may be described as secretary with *anglicana* features, as well as occasional *textura* features such as biting (e.g. the **d** and **o** in *done*, line 25). The hand is legible and clear; only a few words at the end of lines 35, 36, 37 and 38 are not clearly legible because of a smudge. There are no illuminations or illustrations, with one exception: between lines 57-59, there is a drawing of a phial used in the alchemical laboratory. The drawing forms part of the text and clearly represents the simplest way of explaining the shape of the vessel.

There are some marginalia in Latin both in the left-hand and right-hand margins. These notes may be interpreted as keywords that are meant to help the reader find the right place quickly. As Latin was still the usual language of these texts, the Latin terminology would be well known by those for whom the text was intended; it was much more standardized than any English terminology, which would be an advantage when consulting the text quickly. The Arabic numerals 1-4 appear in the margins in four places (lines 16-22; 93-97; 117-118 and 146-148), where they indicate lists of various kinds. Not all of these lists seem to have a pragmatic function related to the instructions, but perhaps a mystical one: for example, the numbers on lines 146-148 refer to the four comparisons of the elixir (to fire, musk, rennet and yeast).

The most interesting detail, however, is the word ‘Tamyrtone’, which appears at the beginning of the present text in the left top corner. Because the alchemical lore was a secret branch of knowledge, nothing was generally explained in a straightforward way. Authors concealed their names, claiming that what was written must stand in its own right. It is not entirely clear what the function of the heading might have been: it could have been referred either to an author or an addressee. This question will be discussed in Section 5.4., and it will be suggested that the name might possibly be read as an anagram concealing the name of the late-fifteenth century alchemist Thomas Norton (see pp. 43-46).

2.2. Summary of the text

The way of obtaining the Grand Elixir gives instructions for preparing the philosophers’ stone, or an elixir of life. It is an example of a type of text which gained enormous popularity in the fifteenth century. Because of the very mysterious, symbolic, and allegorical language of the present text, extremely common in alchemical writings, it should not be taken for granted that it is simply a description of the process ongoing in the laboratory. It may also be read as a description of a transformation of human soul. These ‘two faces’ of alchemy are discussed in Chapter 3 (see pp. 14 and 23). The contents of *The way of obtaining the Grand Elixir* may be summarized as follows.

The text does not have any introduction to what is going to be described. The author goes straight to the description of the stages that an alchemist must follow if he wants to be successful in the process of transmutation. The text very clearly divides the process into three parts: putting the substance into its *prima materia* 1-33; the white work (lines 1-106); and the red work (106-150).

In lines 1-15, the author gives precise instructions for how to change a substance into its *prima materia*. The instructions for this first stage of the Great Work make clear what ingredients an alchemist must work with and how to deal with them; the exact proportions of the ingredients he should add and the kind of a vessel that should be used are also described. The instructions require special knowledge: the practitioner must take such ingredients as *the sun* and *the moon* and change their consistence (l.1-3; see also p. 28).

Lines 15-33 describe what changes will happen to the substance when it is placed in the furnace and heated. Its consistence will go through the following stages: firstly, it will

form a solid mass; next it will be reduced to a powder, and finally, with continuous firing, it will turn again into the solid mass. At this point, the substance changes its colour. The author mentions a typical display of many different colours, warning the practitioner that only the white and shiny colour will guarantee success. He also informs that, having obtained such a colour, the alchemist has finished the first stage of the preparation of a substance for further transformation. He has now got a *white stone (silver/mercury)* and may carry on his experiment (see p. 29).

Lines 33-67 deal with the next stage in the process, known as ‘an alchemical wedding’ (see p. 29). During this process the substance must go through the stages of death and rebirth. A description of the method of checking whether the substance (called the spirit in the text) is dead or not is given in lines 43-49. After this, the alchemist may continue his work to the red stage. The process of the chemical wedding, the proportions of elements and the vessels to be used are described in lines 49-67 (see also p. 29).

The next lines, 67-81, describe a very important procedure: the making of the medicine (the white elixir), which should be of the consistence of wax and easy for melting. Then the text gives a very precise description of the process of increasing the preciousness of the stone. The procedure is here compared to the processes ongoing in nature. The perfection of the mater depends on the recurrent action of casting parts of metal to mercury and in this way increasing its goodness of perfection (lines 81-105).

Lines 106-150, finally instruct the alchemist how to carry out the red work. The process is similar to that of the white work. Here, the author humanizes the work by comparing it to the processes ongoing inside the human body. He warns the practitioner that he must follow the sequence of procedures if he wants to be successful. Then he gives a short description of the red work, assuring the reader that if he follows the instruction he will achieve the final stage of perfection.

Lines 150-155 contain a concluding section. The author states he has done his best and revealed the practice of ‘this worthy science’ as clearly as God had given him the grace to do. The text finishes with a conventional formula: ‘I can do no more, but may he that made both you and me bring us to the bliss and joy of his majesty’.

3. The alchemical tradition

3.1. The roots of alchemy

The popular conception of alchemy has to do with experiments attempting to produce gold. However, the production of gold is not the only aspect of the complex set of ideas and practices that fall under the heading of alchemy. Sheppard (1986: 13-17) has identified alchemy as follows:

Alchemy is the art of liberating parts of the Cosmos from temporal existence and achieving perfection which, for metals is gold, and for man, longevity, then immortality and, finally, redemption. Material perfection was sought through the action of a preparation (Philosopher's Stone for metals; Elixir of Life for humans), while spiritual ennoblement resulted from some form of inner revelation or other enlightenment

Alchemy thus involves a correlation between intellect, body and soul, as well as the combination of philosophy, religion, craft, theory and practice, vision and experiment. With roots in Egyptian technology, Greek philosophy and Eastern mysticism, alchemy has a dual aim, comprising both an exoteric and an esoteric direction. The former (materialistic or metallurgical) is preoccupied with the transformation of base metals into gold and/or silver and becomes a forerunner of scientific experimentalism in Europe. The latter (mystical) is anchored to religious beliefs and philosophical contemplation about the unity of elements, the secrets of creation and the human existence. The two kinds of alchemy, exoteric and esoteric, relate to each other, as both are striving towards perfection and the regeneration of the soul, with the aim to become wealthy either in the material world or in the mystical one. On the one hand, alchemy is a laboratory activity imitating natural processes, on the other the transformation of the human soul. 'In both cases, however, alchemy involves attempts to improve something, whether metals or humans' (Karpenko, 1998: 64).

According to the *Oxford English Dictionary*, the word *alchemy* is most popularly linked to the Greek form *Khem* or *Khamè* (or hieroglyphic *Khmi*), which could mean 'the land of black soil' and is the ancient name of Egypt (Linden, 2005: 5). The name was used by the

Greeks in connection with the interest in the Great Art of Egypt after Alexander the Great had conquered the country in the 4th century B.C. The term might also be derived from Greek *chyma* - to throw or to fuse a metal (Holmyard, 1990: 19). Later, the word *alchemy* was adopted by Arabs as *al-kīmīyā*, adding the Arabic definite article *al*. In the 8th century, the term came to be used in Europe, as the practice of alchemy spread via Spain.

The roots of alchemy, however, lie not only in the ancient cultures of Egypt and Greece, but also in China and India. Several thinkers and religious leaders of these different cultures have had a significant influence on the later thinkers and practitioners of alchemy in Europe. These include, among others, Socrates, Buddha, Confucius, Zoroaster, Aristotle, Hermes Trismegistus and Jabir (Abu Musa Jabir ibn Hayyan). They all developed the idea of the unity between microcosm and macrocosm and changed the way of perceiving the world (Kohn, 2001: 11).

3.2. The ‘great art’ of Egypt and the theories of Aristotle

Even though the roots of alchemy are complex, Egypt may be considered to have the strongest claim to be called the motherland of alchemy. In ancient Egypt, the fear of death among the ruling classes had resulted in a perpetual striving for immortality. It was commonly believed that human existence is not terminated by death, and that life after death is possible; however, it was believed that only a perfectly preserved body could achieve immortality. This pushed the Egyptians to search for a way of preserving human bodies.

As embalming techniques required good quality balms, the Egyptians started to experiment with different substances; in this way, they developed basic skills of chemistry. Once they possessed such skills, they engaged themselves in processes such as metallurgy, glass-making, gold-smiting and tinting. That, in turn, resulted in the desire to enhance one’s life while still alive. Wealth, longevity and the possibility to cure all sicknesses were believed to be accessible by the production of a proper medicine or an elixir of life. The exoteric nature of alchemical practices was mainly based on metallurgy, however, pharmaceutical remedies were also important (Linden, 2005: 3-5; Karpenko, 1998: 64):

The first [aim] was a change of the economic situation by artificial production of precious metals, the second was yet more an immediate

influence on individuals by curing illnesses, not to mention the possibility to extend life (Karpenko, 1998: 64)

While, in ancient Egypt, the parallel growth of interest in the improvement of human existence and the believe in life after death led to the development of craft tradition, based on metallurgy and chemistry, a new direction of thought, the 'hylozoistic conception of the universe', flourished in Greece (Linden, 2005: 8).

In his theory of four elements (earth, water, air, fire) and in his philosophy of the 'essential unity of matter' (Reither, 1976), Aristotle tried to explain the formation of metals and minerals. He claimed that the evolution of gold is a natural process which is ongoing in nature through the heat of the sun. In his treatise, *Meteorology*, he discussed the possibility of changing one form of matter into another (elemental transmutation). He theorized that exchanging one or both of two qualities of each element (dryness, coldness, hotness, moisture) it was possible to change the elements themselves. That theory later became the basis for the Jabirian sulphur-mercury theory (Moran, 2005: 26).

The Egyptian and Greek traditions came together in the great Egyptian city of Alexandria, which is generally regarded as the centre of early alchemy. After Alexander the Great had invaded and conquered Alexandria, Greek philosophers became fascinated with the efforts Egyptians made on their way to become wealthy and immortal. As the two world views mixed and influenced each other, the Greek idea of the four elements gradually merged with the 'sacred Art' of Egypt. From the meeting of those two cultures originated the myth of the Greco-Egyptian god: the 'Thrice-Great' Hermes Trismegistus.

Little is known about Hermes Trismegistus and there is much confusion on the nature of this figure. He seems to be a fusion of the Egyptian Toth and the Greek Hermes, both of them associated with the moon, magic and medicine. According to Fowden (in Linden, 2005: 10), he was believed to be of both divine and human nature, the origin 'of cosmic order and of religious and civil institutions'.

There is a vast number of works attributed to Hermes Trismegistus, however, estimates of their exact number vary greatly. Manetho (in Linden, 2005: 10), suggests that there are thirty-six thousand five hundred and fifty-five works attributed to Hermes. Selecus (in Linden, 2005: 10)², on the other thand, suggests twenty thousand of works. The most important work is the cryptic *Tabula Smaragdina* or 'Emerald Table', claimed to have been found in Hermes'

² Manetho and Seleucus are also cited in Copenhaver (1992).

tomb by Alexander the Great. The *Tabula Smaragdina*, which may be interpreted in many ways, reveals the secret of the preparation of the philosophers' stone and is generally recognized as the foundational text of alchemy. However, there are doubts about the authorship; among other things, it has been suggested that the original tablet was inscribed in Phoenician characters (Fowden in Linden, 2005: 11). Hermes himself is regarded as the founder of alchemical theory and practice and the holder of all the secrets of the 'hermetic Art' (Linden, 2005: 11).

3.3. Chinese and Indian alchemy

Another tradition that came to contribute to the development of alchemy arose independently in China. This tradition had some similarities with the Greco-Egyptian thinking; most importantly, the ideas of the unity of matter and the correlation between macrocosm and microcosm. However, the Chinese alchemical tradition also shows significant differences from the Western one. Strongly influenced by Taoism, it rests on three foundations: the opposition of *Yin* and *Yang*, the philosophy of Lao Tzu (c. 600 B.C.) described in his treatise entitled *Tao Te Ching* (The Way of Life) and the concept of *Chi*.

The Chinese theory of cosmos involved five elements, rather than the four characteristic of Western thought. According to this theory, all things were made of earth, water, air, fire and wood. These elements evolved from a struggle between the forces of *Yin* and *Yang*. *Yin* and *Yang*, present in the whole universe, are two opposite powers which at the same time complement each other. The *Yin*, associated with the moon, is dark, negative and feminine, while the *Yang*, associated with the sun, is bright, positive and masculine. Only an equilibrium between these two can guarantee harmony.

In the alchemical process, the alchemist strove for the unity of *Yin* and *Yang*, or the *Tao*. When he finally achieved unity and harmony of himself in his inner laboratory, he possessed a medicine called the *Elixir* – the key to immortality (Linden, 2005: 6). *Chi* is the result of *Yin* – *Yang* interaction. It might be described as an invisible energy (vital energy), and it is present both in the universe and in a body and flows freely filling them inside.

Chinese alchemy was a rather esoteric discipline, focusing more on the human body than on chemical practices conducted in the laboratory. The core of Chinese alchemy is self-

cultivation and the transformation of the human soul, aiming towards personal harmony, spiritual perfection, harmony with the universe, longevity and even immortality.

The Chinese *Tao* had much in common with the Hindu *ayurveda*, a medical tradition which existed concurrently in ancient India. *Ayurveda* was the ‘science of longevity’ (Linden, 2005: 7) and its aim was to produce a medicine (Elixir) to prolong human life, and in the end cause the human to be united with the supreme god Siva.

According to Deshpande (1987: 15-16), the parallel growth of interest in alchemy in China and India was made possible by Buddhist monk-travelers. Intense contacts between monks, trained not only in Buddhist philosophy but also in contemporary science and secular arts, ‘continued for over thousand years from the early centuries of the Christian Era’ (Deshpande, 1987: 15). It was thanks to these travelers that the alchemical practices of these two cultures came to permeate each other, with ideas, experiences and scientific knowledge being shared. In both China and India, works on alchemical operations draw on experience of one of the other. In China, alchemical practices were based on many Indian texts. Similarly, Indian dictionaries, compendia and other scientific and alchemical works pointed the origin of many alchemical recipes to China.

The connections of Chinese and Indian alchemy to medicine attracted contemporary Arabian scholars. They came to be interested in finding a universal panacea capable not only of curing all the diseases (the Grand Elixir of Longevity) but also of transforming base metals into precious ones (Deshpande, 1987: 15; Linden, 2005: 7).

3.4. The Arabic roots of European alchemy

Islamic culture and religion had a great influence on European alchemy. In the eight century, the Arabs conquered Egypt, Persia, Asia Minor, North Africa, Gibraltar and Spain; in addition to spreading their own culture and religion, they very quickly assimilated the culture, world view and knowledge of the conquered countries. Greek manuscripts, including alchemical ones, were widely studied and translated into Arabic (Reidy, 1975: lix). The Islamic philosophers developed and systemized the Greek learning, adding their own observations about medicine, alchemy and astronomy (Getz, 1998: 38). Jabir (Abu Musa Jābir ibn Hayyān, c. 721-815) and al-Rāzī (Abū Bakr Muhammad ibn Zakarīyā, c. 865-923) were the most prolific Islamic writers whose works and ideas influenced western medieval Europe (Hamed

Abdel-reheem Ead, 1996-2002).

Jabir, a doctor and practitioner of alchemy, developed the sulphur-mercury theory of metals, which became the central idea of alchemy in the medieval world. His belief, based on the Aristotelian theory of nature, was that all metals are built up of sulphur and mercury, and that they are generated inside the earth by mixing ashy sulphur with the wet principle of mercury. He claimed that, during the metallurgic process of transmutation of common metals into precious ones, an alchemist must first:

reduce gold and silver to their supposed 'seeds' or 'souls'. The next step on the way to obtain a transforming tincture is to join them, through distillation, with the original *prima materia*, or Mercury, in the heavens, and then recombine the purified parts' (Gold, Silver, and Mercury) (Moran, 2005: 27)

Al-Rāzī, the Persian physician and alchemist, was the author of enormous volumes on medicine, astronomy and alchemy. Many of them were important and practical works used widely by western scholars in the Middle Ages. *Kitāb al-Asrār* or the *Book of Secrets*, a manual of laboratory procedures, described in a very organized way the specifications for proportions, temperature, timing and endpoints, needed for achieving reproducibility in the laboratories; he here employs basically the same principles that are used today. According to Moran (2007: 34), there was a continuum of practical laboratory manuals from al-Rāzī's *Kitāb al-Asrār* in 920 C. E. to Libavius' *Alchemy* (published in 1597). *Alchemy* is regarded as the first chemistry text-book.

The end of the eleventh century was marked by an increasing interest in Islamic culture in Western Europe. This interest developed in parallel with the Western Christians' series of religiously-sanctioned military expeditions of looting and warfare, named the Crusades, with the goal of freeing the Eastern Christians from Islam and getting the Holy Land back (Getz, 1998: 38). At the same time Islamic spiritualism, fueled by Greek philosophy and Indian and Chinese ideas and practices, reached the Latin West by way of Spain and slowly began to filter into the Western world.

In the Spanish city of Toledo, there was a tolerance of other cultures where Arabic writings could be freely acquired by English, Jews and Greeks. In the late eleventh century, Toledo had become a centre of translation and the most important place from where Islamic scholarship, including alchemy, was transmitted to Western scientific learning (Reidy, 1975: lix; Getz, 1998: 38). It is also from here that alchemical writings and thoughts came to be transmitted to medieval England (see p. 36).

3.5. The alchemical elements

Alchemical elements play a central role in alchemical theory and practice. In the Aristotelian cosmology, an element is ‘that out of which a thing is primarily composed, which is immanent in the thing and which is indivisible according to form’ (Aristotle in Cotnoir, 2006: 25). Everything is made up of four elements: fire, air, water, and earth. Not only do these elements occupy the whole microcosm: they are also the driving force for everything in it. Each of these elements has two out of the four qualities: hot, dry, wet, and cold. One of these is the primary quality of the element, while the other is the secondary quality. Mixed in varying proportions, the alchemical elements can be rearranged and rotated, changing the relation of one element to another:

But first of these elements make thou rotacion
And into water thine earth turne first of all,
Then of thy water make ayre by levigacioun,
And ayre make fier, then Maister I will thee call
Of all our secret great and small (Ripley, in Linden, 2001:14)
‘But first make rotation of these elements
and first of all turn your earth into water,
then make air from your water by levigation,
and make the air into fire, then I will call you Master
of all our secrets, great and small’

This representation of the matter, manifested by the classical elements, is highly symbolic and metaphorical. At the same time, it formed the basic framework not only for alchemists and philosophers but also for physicians from ca 500 B.C. up to ca 1700 A.D (Cotnoir, 2006: 25).

The medieval conception of the qualities of the elements may be briefly described as follows, based on Reid (1996-2002):

 **Fire.** The nature of *fire* is hot (primary) and dry (secondary). It is, on the one hand, life-giving, nutriting and warming (thanks to it, in the womb of the earth, all the metals are incubated). Harmony of the elementary properties is kept thanks to its penetrative power. However, that most volatile of all substances may also be a destructive power.

△ **Air.** *Air* has got a wet (primary) and hot (secondary) quality which is a combination of the qualities of two other elements: *fire* and *water*. Its semi-volatile nature has two forms: volatile and fixed. During the alchemical process it controls the fluids of water and fire, expanding them and rising, contracting and stretching.

▽ **Water.** The primary quality of water is cold while the secondary is wet. It influences the metabolism as well as catabolism of all things. It is surrounded by air and itself surrounds earth. Water is hidden in the Fire's belly. Thanks to water, substances can be molded and spread out.

▽ **Earth.** The earth is the centre of existence, and it is a compound of the three essentials: fire, air and water. Its primary quality is dryness, while the secondary is coldness. When the other three substances are placed in earth, they are fixed into a compact form. Here the Great and the Small works start. Earth is called *the prima materia* and can improve any imperfect body, whether of metals or human.

The number of metals known to the medieval alchemists was seven. These metals were:

☾ Silver, ☼ Quicksilver, ♀ Copper, ☉ Gold, ♂ Iron, ♃ Tin, ♄ Lead.

According to Aristotle, metals and minerals were formed through the twofold exhalation given off by the earth under the influence of the sun. One exhalation, a smoky one, was hot fiery and dry and came from the earth and air; the other one, a moist, cool and aqueous vapour, was derived from the moisture within the earth and on its surface. When adopted by the Arabs, Aristotle's two terrestrial exhalations, smoke and vapour, were incorporated into a new theory. In Arabic alchemy, the smoke and vapor were considered to be the origin of metals and stones and were equated with sulphur and mercury. The sulphur component came from the former (smoky vapour), that of mercury from the latter (moisture vapour) (Moran, 2005: 26).

Jabir developed a theory according to which all metals, as well as all things in nature, were a combination of two primal elements: sulphur and mercury. Here, sulphur and mercury were new names for Aristotle's two vapors. Jabir claimed that the inferior metals were essentially composed of the same constituents as gold and that the accident of combination might be rectified by a suitable treatment and by the means of a superior elixir or medicine

during the process of transmutation. The qualities of elements could be rearranged so that, during the alchemical process of transmutation, a different metal would result.

The elements were not ordinary metals; they were different from the common substances passing under these names. Rather, they were the sulphur and the mercury of the philosophers, substances extracted from 'minerals of the substances of the same names' (Ball, 2006: 78). If the qualities of elements were used in proper proportions gold could be obtained (Moran, 2005: 26; Reidy, 1975: lx).

The qualities of these two Jabirian's elements, sulphur and mercury, may be described as follows:

 **Sulphur**. Solid in nature, sulphur is a bright yellow crystalline, even though white, green or black varieties may occur. It is usually in the dead form, but becomes living when extracted from the fusible earth. In alchemy, it is an expansive force. It is also called the father of the philosopher's stone and attributed to the Sun (Sol). When thick and pure, Sulphur is extracted from the impure and united with the earth. Separated from Salt and purified mercury, it is entirely smoky and liquefies as wax (Albertus Magnus in Linden, 2005: 106; see also Paracelsus at : www.chm.bris.ac.uk/webprojects2002/crabb/history.html).

 **Mercury** is the spirit in the stone, the marvellous quicksilver or 'living silver' (Ball, 2006: 78). The nature of this integrative force is cold and moist with a mirror-like surface. This is the sperm, the origin of all metals; also known as *prima materia*. It possesses the nature of all elements and is composed of body, spirit and soul. During a long period of a mild decoction, in combination with sulphur and salt, it interweaves and balances elements joining them and hardening, forming a red stone from which an alchemist may extract quicksilver. When the equilibrium of qualities is completed the change in the element could be altered and then, in turn, all kinds of bodies can be gilded. However, when burned in the fire they will come back to a humid and fluid substance. In the alchemical process, *Mercury* is attributed to the Moon (*Luna*) and called the mother of the philosopher's stone or the wife of the Sun (Sol) (Albertus Magnus in Linden, 2005: 102, 105).

The overall relationship of Aristotle and Jabirian's elements is illustrated below:

Metal	Planet	Aristotle's element	Jabirian's element
 <i>Silver, quicksilver</i>	the Moon <i>Luna</i>	water (cold and moist)	<i>Mercury, sperm the mother</i>
 <i>Gold</i>	the Sun <i>Sol</i>	fire, earth (hot and dry)	<i>Sulphur the father</i>

When the proportions of these two ingredients were perfectly balanced, an alchemist got what he wanted: the philosophers' stone and/or the grand elixir.

The philosophers' stone was the essence of the whole alchemical lore and was perceived as a medicine capable of curing any imperfections: the diseases of a human or the imperfections of a metal, also seen as kind of a disease. In the present text, it is called a medicine, powder or elixir. In Arabic, the term *al-iksir* from Greek *xerion* means 'powder for wounds' (Grund, 2007: 82).

There is some confusion about the identity of the stone and the elixir. Some saw these two bodies as one and the same; others claimed that they were distinct substances. The former was supposedly capable of turning base metals into gold; the latter, drinkable gold, could prolong life and grant the drinker immortality. According to Taylor (in Grund, 2008: 68), 'the elixir would restore the proper balance between mercury and sulphur by changing their proportions'. Generally, it was regarded as a powerful medicine capable of curing imperfect metals and making them perfect (Grund, 2008: 68).

3.6. The language of alchemy

In alchemical texts, the process of transformation was never described directly. The language of alchemy was symbolic and allegorical. By allegory, a master provided a link between a symbolic object and its abstract meaning; the practitioner could only understand that through the process of interpretation. Some texts may be interpreted at the levels of religion, esoterism and psychology, others in terms of basic alchemical practice; many should probably be read as both.

Grund (2007: 73) gives two reasons for which alchemists never named their subject directly: one is religious; the other is social and economic.

Concerning the religious factor, it was believed that the secrets of alchemy should not be revealed to people who did not enjoy God's sanction. Thomas Norton (in Thompson, 2002: 97) and other medieval alchemists believed, that the divine art was reserved only for the holy man, not just to any scientist: 'Almightie God from great doctors hath this science forbod and grant is to few men of his merret; such as be faithful, holy and true'. Describing the process for perfecting base metals, an alchemist, using very metaphorical and symbolic language, in reality, spoke of sinfully corrupt soul and psyche of man. By using different terms for the subject, such as *the substance*, *the body*, *the matter* or *two bodies* the practitioner was able to deceive the profanes (Linden, 2005: 3-5; Grund, 2007: 79).

This professional secrecy was also applied to the chemical experiments which were ongoing in laboratories. To keep one's professional secret and retain the livelihood of the practitioner was a very important social and economic factor for keeping alchemical texts intentionally symbolic and allegorical. The reason for making the receipts unintelligible to ordinary people was that many of alchemists were sponsored by kings and had their laboratories at the sovereigns' courts (Grund, 2007: 80, see also p. 37).

Like all alchemical texts, the 'Tamyrtone' text displays a rich usage of symbols and metaphors. Apart from keeping the process secret, the metaphors also have other functions. Unintelligible for the uninitiated, allegorical language served as a communicative tool between the initiated and helped to mediate the information without revealing all the secrets. They also connect the subject with its theoretical basis in nature and the ancient theories:

Now haue 3e fulfyllyd 3our medycine in hot & colde. moyst & drye
euyne a *tempyr*' & kyndly adeqwate (ll. 140-142)
'Now you have fulfilled your medicine equally with hot and cold, moist and
dry and balanced in nature'

The hot, cold, moist and dry relate to the four elements of Aristotle fire, air, water and earth, which in the correct combination are capable of transforming any imperfect body into the precious one:

werfor' that þ^t 3e put to hym of hes owyn kynde
shal be of þ^c *sam complexioun*. þ^t he ys of (ll. 142-144)
'Therefore whatever you add to it of his own kind it will be of the same
complexion that of which it is'

The 'Tamyrtone' text also describes the alchemical process with reference to the processes ongoing inside the human body:

ffor þ^e fyrst dygestyoun of þ^e stomak kyndly wyghtyth The secund of þ^e lyuur redyth. ffor 3^e know wele þt þ^e sperme ys nat gendyrd tyl he be wele decoct in þ^e lyuur so y^t he haue takyn þer hes inwardly rednes. for but he wer' inwardly <rede> þer shuld no thyng gender of hym (ll. 117-123)

'The redness will only be extracted out when you increase the fire. For the first digestion of the stomach by nature makes white. The second digestion makes red. You know well that the sperm is not produced until it has been heated in the liver so that he has taken there his inner redness. If he was not inwardly red nothing would be produced by him'

This allegory was a way of explaining the ongoing process by analogy. It could have helped to understand the stages of the whole transformation.

Probably for the same purposes, the author describes the multiplying power of the elixir comparing the process to processes ongoing in nature:

for he ys os fyr' among wode mwske among electwaryse. and os renell of mylk ys to chese & os ferment ys to paste. and þ^e mor' þ^t he ys trauelyde þ^e mor' he ys incresyd (ll. 146-150)

'For it is like fire among wood, like musk among electuaries, and like rennet curdles milk into cheese and like yeast is for bread dough, and the more its goodness of perfection is increased, the better it is'

Thanks to such comparisons, a practitioner, by analogy, can better understand the sequence or aim of the process.

Alchemists very often applied planetary names to indicate metals. Metals, like humans, were thought to be created of sperm, which, during the alchemical process, is symbolized by mercury. In the Tamyrtone text, two opposing principles involved in the process of transmutation are represented by *the sun* and *the moon*:

Tak .j. quarter .℥. of þ^e son'. & dim .℥. of the mon' purgyd. And mak of both þes sotyl lymal. Than tak .j. ℥. & dim of mercer & put to þ^e lymal aforseyd (ll. 1-4)

'Take one quarter ounce of the sun and a half ounce of the moon, purified, and make both of them thin metal filings. Then take a pound and a half of mercury and put it to the metal filings mentioned before'

In addition, many variant terms are used for these elements. For example, sulphur is referred to as sperm; quicksilver is referred to as both silver and sperm; a mixture is another name for the sun and the moon mixed together; mercury can also symbolize the female principle and sulphur can be another word for the male principle of the stone.

By such comparisons, an alchemist tried to hinder the understanding of the whole process, which should be understandable only for initiated. There are other, partly symbolic, elements in the text, which seem to have an explanatory or visualising function. These include references to colours and to the consistence of the substance.

Colours may represent the real colours that appear during the various stages of the alchemical process ongoing in the laboratory. However, they may also have symbolic meanings, depending on the interpretation of the text. Generally, the black colour signals the first step in the process when a substance is brought to *prima materia*. White colour tells that the practitioner has obtained the elixir and that the substance now can be turned into silver:

The ...powder w^l *contynwal* fyryng wyl twrn *in-to mercury* kouerd w^l
blaknes lyk to pych ... and os p^e blaknes passyth p^e wytnes shewyth
(ll. 20-25)

‘The powder, under continuous firing will turn into mercury covered with a blackness similar to wood tar... when the blackness disappears, then the whiteness will appear’

The final stage is represented by the red colour; the elixir is now ready to change the body into gold (Grund, 2007: 83):

aftyр wyght comyth rede. Safe betwyn wyght & rede cytryne wyl shew hym. p^e
qwyche is nat stabylle for aftyr hym rednesse dwellyth nat long. at whos
komyng beth sekyr 3our werk ys done (ll. 128-133)

‘after white comes red. Except that between white and red yellow will show. This is not stable, because after, it redness will soon appear. When it does, you may be certain that your work is done’

The consistency also relates to the stages during the process of transmutation. A wax consistency meant that the substance has gone through a certain process. The function of the similes and metaphors is here descriptive: it helps the alchemist understand the process:

Ffyrst it wyl *congel* in-to an hard gobet. Then yt wyl wast vnder *in-to powder*
a lytyl & a lytyl tyl all p^e substawnse be wastyd *in-to powder* (ll. 16-19)

'First, it will congeal to a solid mass. Then, little by little, it will be reduced to powder until all the substance is reduced to powder'

yf þ^e ston melt os light ly os þ^e wax. tha' he ys redy to multyplye (ll. 66-67)
'if the stone melts as easily as the wax, then it is ready to multiply'

Generally, the recipe directs the alchemist by giving him descriptive clues. However, it does not explain procedures that are expected to be known by serious practitioners: this would presumably also help hinder the use by the uninitiated. Thus, some practical procedures are not explained, but the addressee's assumed knowledge is referred to:

Tha' set it *in 3our* furneyns makyng fyir vnder os 3^e know (ll. 14-15)
'put it into your furnace making fire underneath as you know how'

This illustrates the point that the great art of alchemy was meant to be available only for the initiated.

4. The alchemical process in the 'Tamyrtone' text

4.1. The process of transmutation

The symbolic and metaphoric language of alchemical writings, as well as the remoteness of the ancient and medieval perception of the world, make the process of alchemical transmutation very difficult to understand. During the process of transmutation, the practitioners of alchemy strove to perfect either an imperfect metal or a human body. To fulfil their desire, alchemists strove to find a powerful transmutative agent, commonly known as the philosophers' stone or the elixir. It was believed that this substance, when added to imperfect metals would transform them into silver or gold. According to Grund (2007: 68) 'the theoretical basis for this assumption was that the elixir would restore the proper balance between mercury and sulphur by changing their proportion'.

The ways of obtaining perfection were never exactly alike. However, an alchemist had to follow some general guidelines, which may be described in the following sequences of alchemical practice. Firstly, there has to be a reduction of the base substance into its basic constituents. Secondly, by such processes as calcination, sublimation, conjunction and

putrefaction, the *prima materia* is being prepared for the production of the white stone. Thirdly, the body is turned into the red stone. Fourthly, the potency of the elixir is multiplied and finally the process of transmutation is performed (Grund, 2007: 70). The Tamyrtone text seems to follow this general sequence, and to provide a recipe for how to produce both the white and the red elixir/stone.

The number of stages and their order of application could vary a great deal. The following description gives an outline of the transforming process used by several famous alchemists, including George Ripley (Linden, 2005: 16; see p. 40).

According to Ripley (cited in Linden, 2005: 17), the first step of the alchemical process is the process of reduction of substances to an ashy powder (*prima materia*) by grinding them together. This stage is also called ‘the purgation of the stone’ or the blackening, during which all the moisture is removed from the body. During this process, the substance is exposed to intense heat in a crucible. Albertus Magnus (in Linden, 2005: 106) claims that, the better the body is calcinated, the easier it is fixed. The process is completed when no salty taste can be detected. In the Tamyrtone text the practitioner is instructed:

Tak .j. quarter .℥. of ꝑ^e son’ . & diij. .℥. of the mon’ purgyd. And mak of both þes sotyl lymal. Than tak .j. ℥. & dim of mercer & put to ꝑ^e lymal aforseyd. Tha’ tak .v. or .vj. sponful of vynegre & salt half an handful. & grynd all ꝑ^{es} maters to-gedre in a treen dyshe tyl ꝑ^e son’ ꝑ^e mon’ & ꝑ^e qwyksyluer be wel takyn togedyr. Tha’ tak water mydyl hot & wasch away clen ꝑ^e salt & ꝑ^e vynegre tyl all be freshe tastyng at 3our tong (ll. 1-10)

‘Take one quarter ounce of the sun and a half ounce of the moon, purified, and make both of them thin metal filings. Then take a ounce and a half of mercury and put it to the metal filings mentioned before. Then take five or six spoonfuls of vinegar and half a handful of salt and grind all these substances together in a wooden dish, until the sun, the moon and the quicksilver are well mixed together. Then take medium hot water and wash away completely the salt and the vinegar until it is all fresh tasting to your tongue’

As noted in the previous section, the use of synonyms for the same substance was common practice among alchemists (Reidy, 1975: lviii). The Sun and the Moon are synonyms for gold and silver. The salt used during the process of calcination is the element said to be a third compound, together with mercury and sulphur, of the philosophers’ stone.

After the substance has been ground to a powder, it must be put into a well closed vessel and sublimated with a fire until all the moisture of the mixture evaporates, bringing the substance into the next level of transformation, known as the process of whitening:

put it *in-to 3our vessell* os y^e know & stoppe it wel y^t no eyr' go <in> ne owt
the *qwych myth* be *confusion'* to *3our werk*. Tha' set it *in 3our*
furneys makyng fyir vnder os 3^e know (ll. 12-15)

'put it into your vessel, as you know how, and cover it close so that no air goes
in or out, which might interfer with your work. Then put it into your furnace,
and make a fire under it, as you know how'

During the whole process, the substance goes through a sequence from black to white, with
many colours appearing between them: the process known as the peacock's tail (Linden,
2005: 17). When the substance achieves the white colour, an intermediate stage in the process
of transmutation that is associated with silver, it is ready for the process of conjunction:

Perfor wha' he ys whyt shynyng cler' in thys maner xal 3^e *gouern hym* (ll. 31-
33)

'Therefore, when he is white and shining clear, you should deal with him in the
following way'

The process of conjunction, also called 'a chemical wedding', must be fulfilled in the process
of the production of the philosopher's stone. During the process, the two opposing elements
Sulphur and Mercury (Sol and Luna, the masculine and the feminine, the human and the
divine are joined in one body. The result of this stage of the process of transformation is the
unity of opposing principles of a substance symbolized as the Hermaphrodite. The symbol of
the Hermaphrodite very often appears in medieval medical texts. By this, alchemists pointed
out to the importance of the death and rebirth as the necessary stage in the process of
transmutation:

Tak *3our vessel* and bery *hym in 3our forneys* leying sond aboue p^e *thyknes* of
an vnche & mak fyir aboue w^t a *twrfe* or *tweyn*. & *vndyr in p^e furneys* be p^e
same space of .iiij. dayes tyl al p^e *whyck y^t cleuyt* be p^e *sydys twrn p^e body* þat
he came fro and all be on *sbstawns*. *than wete 3^e wel yf* he be *shynyng whyt*;
all p^e *whyck ys ded*. & *than ys all p^e trauelle* done (ll. 33-42)

'Take your vessel and bury him to your furnace. Cover it with sand, the
thickness of an inche, and make fire above it using a turf or two, as well as
beneath in the furnace. Wait for the same period of three days until all the
quick that clings to the sides will turn to the body it came from, and all will be
of one substance. Then be assured that if it is shining white, then all the quick
is dead, and then all the work is done'

This process is always followed by the symbolic death after which the substance is turned into a white substance (quicksilver or sulphur) which becomes a base for the red elixir ready to create a new substance with new properties. To put it another way, the base metal dies and the more precious one may be produced. Once the process is successfully finished, a practitioner may then apply new procedures (Linden, 2005: 18; Moran, 2005: 27):

Qwan he holdyth whygt thus xal 3e do. Tak of þ^e whyt in þ^e glas .j. quarter & kepp þ^e oder .iiij. quarters to þ^e red werk (ll. 50-52)
'When it holds its weight you shall proceed in this way. Take one quarter of the white in the glass, and keep the other three quarters for the red work'

The process of the reddening of the substance brings the substance into perfection; the white elixir or stone is refined into a red elixir. During this process, the material is boiled and condensated in the upper cooler part of a vessel. The process is similar to the process of the production of the white elixir or stone, with other colours displayed between the white and the red (Linden, 2005: 18):

werefore 3^e nede to sethe hym wele in þ^e fyre w^t owt dred or puttyng þer to any thyng tyl he be clerr' rede ffor w^t waxyng fyr' aftyr wyght comyth rede. Safe betwyn wyght & rede cytryne wyl shew hym. þ^e qwyche is nat stabylle for aftyr hym rednesse dwellyth nat long. at whos komyng beth sekyr 3our werk ys done and þ^e reder' he ys þ^e better he ys (ll. 125-134)
'Therefor you need to place him well in the fire without worrying about it or adding anything untill he will be bright red; with increasing fire, after white comes red. Except that between white and red yellow will show, the which is not stable because after it redness will soon appear, at whose coming be certain your work is done, and the redder it is the better it is'

Having obtained the philosophers' stone or elixir, an alchemist could increase its power by the way of casting it to imperfect bodies. This stage is known as the process of nourishing the elixir, or feeding the stone with the mercury; this must be done 'out of the same things, from which at first it had its composition' (Trevisan in Linden, 2005: 137):

And compown þ^e rede w^t mercer lyk os 3^e dyd to þ^e wyght & so procede in-to infinite. ... werfor' that y^t 3e put to hym of hes owyn kynde shal be of þ^e sam complexioun. þ^t he ys of And thys is þ^e caws þ^t he may be multiplied in-to infinite (ll. 138-146)

‘And mix red elements with mercury like you did with the white and continue into infinity. Therefore whatever you add to it of his own kind it will be of the same complexion of which he is. And this is the cause why he can be multiplied to infinity’

Like the order of the alchemical stages, their definitions varied, just as there were different definitions of the goals towards which alchemists strived. Sometimes the goal was the white and/or red elixir or stone in itself; at other times it was the making of gold or the perfect divine man (Linden, 2005: 16).

The ‘Tamyrtone’ text seems to be a recipe for the whole process of transformation: it begins with turning the substance into its *prima materia*, and then goes on to producing the white elixir and the red elixir, or the philosopher’s stone, needed for the final transformation of the substance. It is not, however, obvious whether this is in the first instance a description of the chemical process carried in a laboratory, or whether it also describes the way of transforming of a human soul, as the two processes are parallel and linked by metaphor.

4.2. The vessels used in the process of transmutation

The apparatus used in alchemical operations varied according to the stage of the process and to the level of alchemy. In laboratories, there were apparatus of different shapes and materials, needed to maintain such operations as combination, heating, evaporation, separation and dissolution. At the spiritual and mystical level, the human body was a furnace to the human soul and mind in the process of transmutation. Since the language of alchemy was very metaphorical and symbolic, the names for the furnaces in both the exoteric and esoteric alchemical processes were the same. The difference consisted in the interpretation of the text.

In the ‘Tamyrtone’ text, various kinds of vessels and other equipment are referred to. In the following, an attempt is made to relate these to descriptions of apparatus used in medieval alchemical laboratories, based largely on McLean (1996-2002).

The vessels in which the alchemical process takes place could be of different forms such as crucibles, furnaces, water baths, sand baths, stills, alembics, flasks, retorts and many others. The aim was to render different degrees of heat in the furnace in which the main alchemical process took place. The fuel used to maintain the fire was made of such materials

as wood, oil, wax, charcoal and even the dried dung of horses and cattle (Holmyard, 1990: 46).

In the ‘Tamyrtone’ text, alchemical apparatus can be generally divided into that for powdering and that for applying different levels of heat. For the process of powdering, a substance was placed in a wooden dyshe and grind until all the substances were mixed together:

Tha’ tak .v. or .vj. sponful of *vynegre* & salt half an handful. & grynd all þ^{es} maters to-gedre in a treen dyshe tyl þ^e son’ þ^e mon’ & þ^e qwyksyluer be wel takyn togedyr (ll. 1-8)

‘Then take five or six spoonfulls of vinegar and half a handful of salt and grind all these substances together in a wooden dish until the sun, the moon and the quicksilver are well mixed together’

Next, the substance was placed in an open vessel for the process of calcination in which it changed its solid state into a fine powder. For the process of heating, an alchemist could use different kinds of furnaces. They were of different sizes and gave different degrees of heat and economy of fuel (Holmyard, 1990: 46). As the vessel was open, all the impurities of the primal substance were allowed to flow out of it. According to Geber (in Holmyard, 1990: 47) a furnace for the processes of calcination ‘should be made square, in length four feet, and tree feet in breadth, and let the thickness of the walls be half a foot; after this manner ... things to be calcinated, must be put into dishes or pans of most strong clay, such as of which crucibles are made, that they may persist in the asperity of fire ...’

According to Holmyard (1990: 46), for the process of fusion of elements, alchemists used an earthenware crucible. The ‘Tamyrtone’ text refers both to a crucible and a ‘cruselet’ (ll. 101, 102): the latter word seems to be unrecorded elsewhere but is presumably simply a synonym for crucible. Usually such a furnace consisted of two crucibles: the bottom one and the top one with a perforated base. A substance when placed in the upper part of the vessel and heated flowed down to the bottom of the crucible with the crude metals. All the impurities were removed and given off in the air and the substance could be changed into new pure metal. At this stage the slow precipitation of a solid could be acted on a salt with acid with the aim to release gases:

& put all þ^{is} in-to a crusyble in embyr or ellys vpon colys so yt be nat to hotte & w^tin lesse tym þan a pater noster wyghl yt wyl twrn in-to þ^e kynd of þ^e ston.

and lokyth euermore 3e haue fyre of clene kolys nowt to strong for euermor’
 afor þ^e meltyng he ys elixer & aftyr þ^e meltyng he ys metall (ll. 75-80)
 ‘and put all this into a crucible into the embers of a fire or otherwise on burning
 coal so that is not too hot, and within less time than the length a pater noster it
 will turn into the nature of the stone and make sure all the time that you have a
 fire of clean coals never too strong. Before the melting it is elixir, and after the
 melting it is metal’

For the process of the alchemical digestion, the substance to be heated was placed in a furnace called *athanor* (from Arabic al-tannur ‘the furnace’). The athanor provided heating by the slow burning of coals for a long time. This heating apparatus was a kind of deep pan with ashes inside and a lid on the top. A crucible placed in the ashes was covered with the sand so that it was surrounded underneath and above, with the aim to heat evenly the substance placed in it. It was a kind of sand-bath (Holmyard, 1990: 47). In the ‘Tamyrtone text’, the process ongoing in an athanor is described as follows:

Tak 3our vessel and bery hym in 3our forneys leying sond aboue þ^e thyknes of
 an vnche & mak fyir aboue w^t a twrfe or tweyn. & vndyr in þ^e furneys be þ^e
 same space of .iiij. dayes tyl al þ^e whyck y^t cleuyt be þ^e sydys twrnþ^e body þat
 he came fro and all be on sbstawns (ll. 33-40)
 ‘Take your vessel and bury him to your furnace. Cover it with sand, the
 thickness of an inche, and make fire above it using a turf or two, as well as
 beneath in the furnace. Wait for the same period of three days until all the
 quick that clings to the sides will turn to the body it came from, and all will be
 of one substance’.

The substance to be dissolved was placed in a small glass phial and placed in the furnace:

þan put in-to a glas[th^e] shape ... & stop yt abone & put yt in 3our furneys
 makyng vndurneth fyir os 3^e know. And be þ^e space of .iiij. howres yt wyl twrn
 in-to the vertue of þ^e ston. And than lyk os 3^e haue done w^t þis part. so do w^t
 odyr .iiij. partes of þ^e qwyksyluer. tyl yt 3eld yt to lygt meltyng os wax (ll. 57-
 63)
 ‘Then put the mixture into a glass of this shape and close it at the top and put it
 in your furnace making fire underneath as you know how, and in four hours’
 time it will turn into the power of the stone. And then just as you have done
 with this part, do with the other three parts of the quicksilver until it can be
 melted as easily as wax’

The furnace for distillation, when placed in the fire, could be used to extract oils flowing down the stem, which were then gathered in a receiver under it (Holmyard, 1990: 47). The

distilling apparatus usually comprised a flask for liquid. The top part of a still was provided with a delivery spout known as *alembic*. Sometimes an apparatus had of two or three spouts: it was then known as a *dibikos* and a *tribikos* respectively (Holmyard, 1990: 49).

The ‘Tamyrtone’ text pays considerably more attention to describing the method than to the description of the vessels themselves. This suggests that the intended reader(s) would be well familiar with the apparatus involved, and knew how they worked; again, this would help preserve the secrets from the uninitiated.

5. The context of Late Medieval English text production

5.1. Scientific writing and the process of vernacularization in medieval England

For the largely oral society of Anglo-Saxon England, Latin was the language ‘of learning, the church, government and ... the standard of literary excellence’ (Taavitsainen and Pahta, 2004: 8). Literacy practices were generally the domain of monasteries, and in general, texts on religious matters greatly outnumbered lay texts. The single very large group of non-religious texts consists of law texts, land charters and wills, the latter of which were often written in English.

In the ninth century, king Alfred the Great (ca. 849-899) carried out an educational campaign which, at least to some extent, led to a rebirth of learning after it had suffered greatly from the Viking raids. One of his main ideas was that, even though Latin learning had deteriorated, many might be able to read the vernacular. A more or less standardized form of Old English came to be used as a written language with official functions (Smith, 1996: 17). This written language, ‘Late West Saxon’, seems to have been based on a later, somewhat different form of the West Saxon used during the reign of king Alfred.

From the ninth to the twelfth century, a relatively broad range of texts was produced in the vernacular, including works on astrology, a treatise of the calculation of time, historical texts, herbals and medical texts. Sometimes, these consisted of single medical recipes in English written in the margins of Latin works. Texts such as Bald’s *Leechbook* (a recipe collections) and *Herbarium Apulei* were mostly a fairly close translations of Latin originals (Pahta & Taavitsainen, 2004: 9). Among historical texts, probably the most important is the

Anglo-Saxon Chronicle. Its 'last continuation', in the version known as the Peterborough Chronicle (entries for the years 1131-1154 written by single scribe in 1154) is very often considered to be the first Middle English text.

With the arrival of the Normans in 1066, the cultural and linguistic situation was changed. England became a multilingual society with three languages: Latin, French and English. In the early Middle Ages (1100-1375), Latin was the official written language in most of medieval Europe: it was the language of knowledge and learning, as well as of administration. England was not an exception.

In the Middle Ages, according to Clanchy (1993: 27), 'lay literacy grew out of bureaucracy, rather than from any abstract desire for education or literature'. Soon after the Conquest, the Normans found that the Anglo-Saxons had been using the vernacular (as well as Latin) in administration. As they could not themselves use English, and Latin was the natural language to use everywhere in Western Europe, they used that. The increasing number of Latin writings brought England into the mainstream of medieval literate communication. Various types of legal documents were produced, such as court documents, legislative records, records of states; however, now also private legal documents such as wills were written in Latin. Both royal proclamations and common daily transactions formed part of the administrative records. Gradually however, the writers of post-Conquest England came to use French as well. French was the language of royalty, aristocrats and high-powered officials for more than 300 years after the Norman Conquest, even though it was less and less commonly used as a mother tongue.

In the early Norman period, English came to be largely a spoken language. Those who could read and write used Latin or French, which were the official languages of written record. People at the very bottom of the feudal system spoke English; while they made up the great majority of the population, they left few written records. Written English was thus a peripheral language, even though the spoken variety was used by a great amount of people in everyday life (Clanchy, 1993 in Baugh and Cable, 2002: 113).

The re-establishment of English as a written language, known as the process of vernacularization, took place gradually from the thirteenth to the fifteenth century. According to Baugh and Cable (2002: 141), this process was fueled by several factors. McDowell (2004: 53) claims that, first and foremost, the Hundred Years' War with France (1337-1453) exerted a profound influence on the development of English. Having France for an enemy, the soldiers of king Edward III came to be actively hostile to the French language. The idea of separating England from France and from the French culture seems to have spread around the

country (Taavitsainen, 2000: 132-133). The importance of Englishness grew, something which resulted in more texts being produced in the vernacular.

During this period, there also appear authors who write in English and, for the first time, become known by name and gain a reputation as authors for works written in the vernacular. Among many others, there were two very prolific writers who significantly influenced the propagation of English: William Langland and Geoffrey Chaucer. The latter had an interest in alchemy and may have contributed greatly to alchemical texts being written in English (Grund, 2007: 88, see p. 39).

Another important factor which contributed to the rise of English was the Black Death (1348). The plague took great harvest, putting to death one third of Britain's population and leaving, among other things, a shortage of scholars capable of teaching in Latin. This led to more university staff being trained in English (Ziegler, 1991: 252-259).

According to Baugh and Cable (2002: 153) there were also other factors which propelled the process of vernacularization, such as social changes and the Lollard movement. The developing usage of English in literature and in scholarly works, including works on science, reflected the national striving toward Englishness and was another important step in the process of vernacularization.

This does not mean that English supplemented Latin completely. Rather, the two languages existed long side by side. However, Voigts (cited in Grund, 2007: 76), points out that 'the process of using English for learned science and medicine appears to have come to something like completion by 1475, for in the last quarter of the fifteenth century we can find a full range of English-language scientific and medical texts of university origin'.

5.2. Scientific writing in the late Middle Ages

At the end of the fifteenth century, utilitarian writing came to be available to readers on a variety of topics, including the field of science. Generally, branches of knowledge included such fields like 'music, physiognomy, and areas that border on the occult and magic' (Taavitsainen and Pahta, 2004: 1). Scientific writing of all kinds, including astronomy, astrology, medicine and alchemy formed an integral part of medical theory and practice.

According to Holmyard (1990: 105), the art of alchemy was introduced to the West not earlier than in the twelfth century. With the crusades, the ancient wisdom, already

possessed by the Saracens, became accessible to the Europeans. In 1141, an English scholar, Robert of Chester from Keton in Rutland lived in Spain studying alchemy and astrology. Encouraged by Peter the Venerable, the Abbot of Cluny, he translated the Koran into Latin. Later in 1144, he met another challenge and translated from Arabic the *Book of the Composition of Alchemy (Liber de Compositione Alchemiae)*; this was the first alchemical text which appeared in Latin Europe (Holmyard, 1990: 106). Among his other translations are such works as Al-Khwarizm's *Algebra*, as well as some Arabic commentaries on the *Emerald Table* (Holmyard, 1990: 97).

Through the next century, there was a growing interest in translated literature of the alchemical lore. However, the popularization on a greater scale began in the fourteenth century and continued into the early modern era. Alchemy became a familiar art in Europe and was practiced both as a laboratory venture and as a spiritual pursuit (Knapp, 2000: 577). In England, as in the whole of Europe, this formed part of an ever growing interest in scientific texts in general. The circulation of writings was spreading ever wider. Medical and alchemical writings seemed to lead the way during the process of vernacularization, broadening in this way the readership of scientific texts (Grund, 2007: 75). Alongside religious writings, short poems, chronicles, romances, cookery recipes and other practical and recreational books, scientific writing in English contributed greatly to the development of English as a written language (Knapp, 2000: 575; Baugh and Cable, 2002: 156). Alchemy attracted many medieval scholars and writers. Countless handbooks, instructions and straightforward recipes on how to produce the universal tincture (the philosophers' stone or elixir), transmute base metals into gold and prolong life appeared, mainly transcribed and translated from the large number of original treatises.

The possibility of producing gold from a pound of lead created great interest and fascination among aristocrats, nobles and kings. Alchemists very quickly became important people, and many of them had their place at the courts of English sovereigns. At the courts of Henry VI, Edward IV and Elizabeth I, alchemists carried out their experiments, being sponsored by monarchs and possessing the title of 'king's alchemist'. Their alchemical experiments, the promises of richness and of the discovery of a key to immortality, let them work for the benefit of kings despite the unsuccessful generation of gold and silver from mercury. Often alchemists became the confidential advisers to the monarch and played an important part in State affairs.

However, the lack of success in producing the transmuting tincture eventually led to the withdrawal of the practitioners of the sacred art out of the courts, and to the whole process

being viewed as a fraudulent endeavour. This disillusionment is shown in Chaucer's portrayal of an alchemist in the *Canon's Yeoman's Prologue*, lines 670-677 (Skeat, 1890):

We blondren ever and pouren in the fyr,
And for al that we fayle of our desyr,
For ever we lakken our conclusioun.
To mochel folk we doon illusioun,
And borwe gold, be it a pound or two,
Or ten, or twelve, or many sommes mo,
And make hem wenen, at the leeste weye,
That of a pound we coude make tweye!

'We are always stirring and staring into the fire,
and for all that we fail in our desire.
We never achieve the end of our work,
but bring about illusion to many people,
and borrow gold, whether it be a pound or two,
or ten, or twelve, or much more,
and make them think that, at the very least,
we can make two pounds out of one!'

Some rulers even passed laws forbidding the use of the craft; some, however legalized it and granted some practitioners a permission to carry on their efforts to multiply gold (Grund, forthcoming: 6; Hughes, 2002: 10; Thompson, 2002: 140).

It was, however, not only in the courts that alchemical practices took place. The art flourished throughout the society, attracting many people in almost all walks of life, including naive dabblers and outright swindlers (Grund, forthcoming). To change common metal into gold was not, however, their only pursuit. In the Middle Ages, alchemy had much in common with medicine and astronomy, and, with some reservation, it was perceived as equal to other scientific practices. The Pythagorean theory of counterbalancing a disease by means of the proper medicament or elixir with the right hot, cold, wet, or dry characteristics, was closely related to Aristotle's theory of the four elements. Just like a physician, an alchemist tried to extract the purest substances out of the four elements. However, his goal was a specific one: to make a mixture which would finally cure any disease.

The shared interest in improving human existence made it common practice to place medical and alchemical writings together in one codex. It was not always easy to separate the two: they were intertwined as in Rupescissa's medico-alchemical tract *Consideratione Quintae-essentiae* (cf Grund, 2007: 77) and later, in the writings of Paracelsus, who used

alchemy as a tool in his medical practices. Even later scientists, such as Robert Boyle and Isaac Newton, continued reading and copying alchemical texts which ‘provided instructions on how to produce a certain substance or carry out a certain procedure’ (Grund, forthcoming).

Reidy (1975: xxxviii) claims that, in the time of Edward IV, there were religious as well as lay people involved both in translating and copying original works and in writing their own treatises, poems and recipes on the Art of alchemy. The former very often practiced both kinds of alchemy, esoteric and exoteric. Among the best known English practitioners of alchemy were Roger Bacon, Geoffrey Chaucer, Sir George Ripley, and Thomas Norton.

Roger Bacon (c.1219-c.1292) was an English Franciscan, a scholar and a lecturer both at Oxford and at the University of Paris. Known also as *Doctor Mirabilis* ‘a great teacher’, he was a philosopher regarded as an extreme empirist. Inspired by Islamic scholars, Bacon made references to Aristotle’s theory of the origin of metals and Geber’s sulphur-mercury theory. In many ways, he was a forerunner of modern science. He stressed the importance of scientific experimentation and educational reform. He also came to be accused of witchcraft and black magic, because of his visions of future technology: the invention of flying machines, optical instruments, cars and submarines. Among his greatest works on alchemy are the *Opus Majus*, *Opus Minus*, *Opus Tertium* and *Radix Mundi* (Linden, 2003: 111).

Often regarded as the most important writer of the English late Middle Ages, Geoffrey Chaucer (c.1340-1400), drew on Greek and Roman literature. His works were bursting with mythological creatures and allegories. The widespread practice of alchemy in England is prominent in his *Canterbury Tales*. In *The Canon’s Yeoman’s Tale* he portrays a range of personal and social desires of a canon, related to the alchemical practices to which he was committed in his laboratory (Skeat, 1890):

Our lampes brenning bothe night and day,
To bringe aboute our craft, if that we may.
Our fourneys eek of calcinacioun,
And of watres albificacioun,
Unslekked lym, chalk, and gleyre of an ey,
Poudres diverse, asshes, dong, pisse, and cley,
Cered pokets, sal peter, vitriole;
And divers fyres maad of wode and cole;
Sal tartre, alkaly, and sal preparat,
And combust materes and coagulat...
And of our silver citrinacioun,
Our cementing and fermentacioun (ll. 802-817)

‘Our lamps burning both night and day,
to bring about our craft, if we can,
our furnace, too, for calcination
and waters all prepared for albication,
Unslaked lime, chalk, and egg white,
Different powders, ashes, dung, piss and clay,
little waxed bags, saltpetre, vitriol;
and different fires of wood and coal;
Potassium carbonate, alkali and salt,
and our burnt matters, and coagulate...
and our citrination of silver,
our cementing and fermentation’

In *The Canon's Yeoman's Tale*, alchemy plays a double role: it is both a literal subject and a metaphor in the story. By the way in which Chaucer described the process of transmutation and alchemical materials it was obvious that the author was familiar with the art and, what is more, he suggested ‘that he had himself lost time and money in unsuccessful attempts at transmutation’ (Holmyard, 1990: 177).

Sir George Ripley (1415-1490), is regarded as one of most famous and important alchemists of medieval England. Ripley was a canon of Bridlington who has been described as ‘a man of a quick and curious wit who spent almost his whole life in searching on the occult and abstruse causes and effects of natural things’ (Thompson, 2002: 92). He dedicated his best known work, *The Compound of Alchymie*, to King Edward IV. This text, which is written in verse, describes the twelve gates the philosopher must enter to gain the *magnum opus*. These gates are: Calcination, Solution, Separation, Conjunction, Putrefaction, Congelation, Cibation, Sublimation, Fermentation, Exaltation, Multiplication, and Projection (Thompson, 2002: 93). In his work he explains that he employs a vague language in order ‘to discourage the fools’. It must be said that he seems to have succeeded in mystifying his readers. All his writings are filled with symbolic figures of men and animals, which were used to describe alchemical processes.

Ripley was a very prolific writer and his works were widely disseminated. Some of them were produced in the form of scrolls, long, and coloured. Together with his other alchemical texts (manuscript and printed versions), these scrolls gained great attention throughout Europe and came to be translated to many languages (Thompson, 2002: 94; Linden, 2003: 141).

5.3. The ‘Tamyrtone’ text as a text-type

During the process of vernacularization, not only did the quantity of written English increase, but vernacular text-types developed norms for the creation and reception of texts. *The way of obtaining the Grand Elixir by Tamyrtone* is written in prose and shows characteristics of two quite distinct text types: the recipe and the letter.

According to Carroll (2004: 178), a medieval recipe may be structured either analytically or in a form of a list. Stannard (1982: 62-66) adds that such parts as the heading, ingredients, procedure and application could be comprised in it. He also adds that only the procedure is the part of a recipe that must be included in the instruction. The ‘Tamyrtone’ text follows this description, naming ingredients and the quantity to be used together with the instruction how to proceed with a substance:

Tak .j. quarter. ℥. of þ^e son’. & dim. ℥. of the mon’ purgyd. And mak of both þes sotyl lymal. Than tak .j. ℥. & dim of mercer & put to þ^e lymal aforseyd. Tha’ tak .v. or .vj. sponful of vynegre & salt half an handful. & grynd all þ^{es} maters to-gedre in a treen dyshe tyl þ^e son’ þ^e mon’ & þ^e qwyksyluer be wel takyn togedyr (ll. 1-8)

‘Take one quarter ounce of the sun and a half ounce of the moon, purified, and make both of them thin metal filings. Then take an ounce and a half of mercury and put to the metal filings mentioned before. Then take five or six spoonfuls of vinegar and half a handful of salt and grind all these substances together in a wooden dish until the sun, the moon and the quicksilver are well mixed together’

Despite the very mystical language used in the present text, it is very clear what the ingredients are, what quantities are to be used and what the procedure is. This kind of description, which does not separate ingredients from the procedure, continues through the whole text. The text also explains how the finished product should be applied:

Than tak þ^e .x. peny wyght aforseyd & depart hym in .x. partes and cast euyrych .j. part vpon .x. of mercer. & than 3e han .C. Than depart þ^e forseyd .C. in-to .x. partes. and cast eueryche part vpon .C. and than 3e haue .M. Than depart þ^{is} .M. in-to .x. partes & cast eueryche part vpon .M. and than 3e haue .C.M. And so depart and procede in-to infinite (ll. 83-90).

‘Then take the abovementioned, ten penny-weights, and dividet it into ten parts and then cast every part upon ten penny-weights of mercury and then you have

a hundred. Then dividert the abovementioned hundred into ten parts and cast every part to a hundred, and then you have a thousand. Then divide this hundred into ten parts and cast every part to a thousand and then you have a hundred thousand, and then continue dividing into infinity’

The heading is the only one of the elements of a recipe, as described by Stannard, that *The way of Obtaining the Grand Elixir* lacks.

Carrol (2004: 174, 181) also points out that Middle English recipes show a heavy use of imperative forms. In the ‘Tamyrtone’ text, the imperative is used throughout the whole text as short phrases such as: ‘... **tak** water mydyl hot ...’ (*take medium hot water*, l. 8); ‘... **tak** your vessel and bery hym in 3our forneys ...’ (*take your vessel and bury him to your furnace*, l. 33). According to Carrol, the imperative form *take* is used as the ‘conventional formula’ to begin instruction, however, it is not a requirement and some different forms may be used.

The ‘Tamyrtone’ text also seems to be meant to function as a recipe. According to Taavitsainen (2004: 187) the function of a recipe is to give ‘instruction on how to prepare medicine, a dish, or some household utility like ink’. Grund (2004: 187), expanded this definition beyond the household utilities, adding alchemical recipes for powder of silver and water of mercury. The ‘Tamyrtone’ text is certainly instructive, and uses words characteristic of cookery and medicinal recipes such as *mix* (l. 73), *grind* (l. 6), *melt* (l. 66) and *medicine* (l. 141). Such words do not in themselves define a text as a recipe: in some cases, there are texts which contain recipe vocabulary but are not recipes (see Carroll, 2004: 188).

At the same time, the text contains elements that are highly untypical of recipes, but that rather belong to the letter text-type. The text addresses the reader formally, as ‘ye’ rather than ‘thou’ and at the end of the text there is a conventional letter formula ‘I can do no more but ...’ This may suggest that the text was written to a real recipient who needed to be addressed politely.

On the other hand, there is neither any indication of who the sender was, nor any other information suggesting a date of production or a place where the letter comes from. Medieval letters usually consisted a lot of information which could help to name either an addressee or a sender (or both of them), as well as a date and a place of the origin of the letter. The ‘Tamyrtone’ text lacks such information; the only clue it gives to the reader is the name ‘Tamyrtone’.

The text as it survives is, of course, not an actual letter in any case: at the most it could be a copy of one. It survives in a manuscript with other alchemical texts, and its function here is that of a recipe. The lack of date and place simply reflect this fact: even if the text started

off as a ‘real’ letter, by the time it was copied into the manuscript these pieces of information would have been superfluous and confusing.

Additionally, it seems that many alchemical texts were written in letter form, presumably often as a convention, although there seem to be ‘real’ ones too. The epistolary format, consisting of an instructional text written from master to disciple, seems to go back to Hermes Trismegistus and is extremely widespread in the alchemical tradition. All the famous alchemical works are instructive, and give directions to a person, often a named one. The question whether this particular text might have been addressed to a specific person, or whether the format was purely conventional, cannot be answered with any certainty; however, the polite form of address might suggest an actual addressee of high social status. The only clue to the historical persons connected to the text is the name ‘Tamyrtone’ at the beginning; the possible significance of this should be considered next.

5.4. The authorship

The heading of the text very clearly reads ‘Tamyrtone’. The library catalogue entry interprets this as the text being ‘attributed to’ Tamyrtone; however, it is highly uncertain from the context whether the name is to be read as that of the author or that of an addressee.

No alchemist called Tamyrtone seems to be recorded. However, famous alchemists very often worked and wrote under assumed names. These were sometimes anagrams of their real names, formed by taking the first letters or syllables of their first names and surnames (Reidy, 1975: xlii).

The authors of the secret lore were often, if not always, people of great importance in the society. Attributions to authors in medieval manuscripts, moreover, generally refer to those who attained the celebrity in the world. Who could Tamyrtone be then? Taking into consideration the combination of syllables of the first name and the last name of the author, the name Tamyrtone could be divided into two parts: **TAM** and **YRTONE**. This might plausibly be analysed as an anagram of Thomas Norton, combining the common short form of Thomas (Tom or Tam) with the second part of the surname. Because alchemical writings were meant to be secretive, anagrams were frequently used; an example is the ‘Tho: Tym’

referred to as an author in Ashmole 1440³.

The well-known alchemist Thomas Norton was the son of William Norton, accounted one of the most worthy men of Bristol, who in 1414 was elected a mayor of the said town. The date of birth of Thomas is uncertain, however, Reidy (1975: xliii), suggests the year 1433. Thomas was mentioned in *The Great Red Book of Bristol* as the sheriff of Somerset (1476); a member for the Commission of the Peace of the same county (1475, 1476); and as a collector of customs and subsidies in Bristol (1477). He was also a member of the Privy Council at the court of King Edward IV.

Thomas Norton became a student of alchemy as a very young man. He learned the secrets of alchemy from George Ripley, one of the most important English alchemists of the fifteenth century (see p. 40). To learn all the secrets of the secret art, he stayed in London for forty days, gathering carefully the knowledge necessary to carry out the successful process of transmutation (Thompson, 2002: 95). As there was a shortage of gold in this period, the young alchemist knew that success might help him gain the King's favor. Because Thomas was too young, however, Ripley refused to reveal him the final secret of the red stone. This knowledge was necessary in order to multiply the coins of the King's vaults or to produce the Elixir of Life (Reidy, 1975: 1).

It was not much later, however, that Thomas finally arrived at the secret knowledge. He was scarcely twenty-eight when he succeeded in preparing the transmuting tincture. The secret was stolen from him twice: the first time by his dishonest servant, the second time by a merchant's wife. The accidents did not affect his striving towards making the Great Elixir of Gold, and his fame as an alchemist was more than local. In his most famous work, *The Ordinal of Alchemy*, he showed how contemporary alchemists skilfully intertwined mysticism and 'subtle science of holly alchyme' (Thompson, 2002: 96).

There are a few indications that the author of *The way of obtaining the Grand Elixir* might have been Thomas Norton. The idea that the name 'Tamyrtone' is an anagram of his real name is suggestive of the way in which Ashmole discovered the name of the author of *Ordinal of Alchemy*. He collected together the first line of the seventh chapter, the first word of the Ordinal's Proeme and the initial syllables of the first six chapters he formed: **To Mas Nor TON** (Reidy, 1975: xlii; Thompson, 2002: 95). Thus, we know that Norton used anagrams to sign his name.

The choice of the form 'Tamyrtone' as an anagram might have been suggested by the

³ viewed at [URL]: <http://www.levity.com/alchemy/alms5.html>

village name Tamerton: at least three villages of this name are found in the Southwest of England (Devon and Cornwall), all with the etymology ‘town on the (River) Tamar’. The Southwestern background of Norton, if nothing else, would mean that this name was familiar to him.

It needs to be considered whether the date of the present text might agree with a reference to Norton, either as an author or an addressee. Assuming that the estimate of Norton’s date of birth is reasonably close to the truth, he might have received the secret of the production of the Grand Elixir from his master George Ripley around 1460.

The catalogue dates the present texts simply to the fifteenth century. The contents give no direct clues for a more precise dating; the monk John Sawtre, cited as the author of Item 1, has been identified as ‘probably the prior of Thorney who resigned in 1402’ (Saltzman 1948, in *British History Online*)⁴, and the text could have been copied at any time after that. Compared with the text samples in Roberts (2005), the script suggests a dating in the mid- or late part of the century.

Reidy (1975: 1), suggests that, after receiving the secret, Norton played the role of the youngest and greatest alchemist of his times who carried the alchemical operations to his own satisfaction. This would agree with his name being used either as an addressee or an author, whether truthfully or not. Taking into consideration that the function of a heading in an epistolary text would generally be to indicate addressee, the former might be considered likely.

One might even speculate that the author of the present text might have been George Ripley himself. The word ‘Tamyrtone’ could refer to Thomas Norton as the addressee of a letter sent to him by his master. However, there are many surviving alchemical texts that are attributed to Ripley, especially in the Ashmole manuscript collection; transcriptions of many of these are available online. Even without going into details, a reading of these texts makes it very clear that both the vocabulary and a very different style rule out Ripley as the author of the text. To take a single example, Ripley makes constant use of the term ‘faeces’ for the stuff sticking to the sides of the vessel, while present text calls it ‘whyck’ (see e.g. Ripley’s scroll on <http://www.alchemywebsite.com/rscroll.html>).

⁴ From: ‘Houses of Benedictine monks: Abbey of Thorney’, A History of the County of Cambridge and the Isle of Ely: Volume 2 (1948), pp. 210-217. [URL]: <http://www.british-history.ac.uk/report.aspx?compid=39995>

On the other hand, references to the sources of a recipe may also appear as headers; for example, in the small recipe collection in Oxford, Bodleian MS Douce 78, edited by Thengs (2008), two recipes are preceded by headers stating that the recipe is ‘aftur þe woman of penyton’. If ‘Tamyrtone’ referred to the source or author, one might expect it to be preceded by a preposition such as ‘after’ or ‘by’; for the actual usage in medieval recipe headings, however, more detailed study would be needed. For the present purpose, it may be concluded that both interpretations are possible, depending on which text type’s conventions the name is taken to represent: the heading of a recipe or the addressee line of a letter.

6. The dialect

6.1. Preliminaries: the study of Middle English dialects

6.1.1. The variability of Middle English dialects

The study of Middle English language is a very complex task. An extensive number of texts written in a multitude of dialects from the twelfth century to the end of the fifteenth is called by Milroy (1992: 159) a ‘matter of great good fortune for dialectologists’. The extreme variety of Middle English dialects was the result of historical circumstances after the Norman Conquest, and replaced the relatively standardized use of the Late West Saxon variety of Old English. Blake (1992: 10-11) points out that:

the introduction of new spelling habits allowed the scribes to reflect more closely the speech forms that they heard daily because they were no longer confined to the straitjacket of an imposed spelling system.

Up to the nineteenth century, historical linguistics was generally concerned with the reconstruction of the spoken language. Written language was ‘considered as imperfect evidence for speech’ (Stenroos, 2008: 3). From the 1950s onwards, the study of Middle English dialects was revolutionized by the work connected to *A Linguistic Atlas of Late Medieval English* (=LALME; McIntosh, Samuels and Benskin, 1986) which was based on more than a thousand texts from the period 1325-1450. The LALME approach turned the focus from the reconstruction of speech to the study of the written language directly. This new approach became the fundamental idea to the studies following the LALME tradition

(Black, 1999: 59).

The Middle English period is usually defined as the period c. 1100-1500, between the Norman Conquest and the introduction of the printing press. It is often divided into two periods: Early Middle English (c.1100-1350) and late Middle English (c. 1350-1500).

In the Early Middle English period a major change took place in the sociolinguistic status of English. With the Normans Conquest (1066), the establishment of a French-speaking ruling class led to a situation known as *heteroglossia*. The main written languages were Latin and French, which came to be used for most purposes. English lost its prestige as a written language, although it remained the majority language in the spoken mode, still being used by the non-aristocratic classes and the lower clergy, which made up the vast majority of the population (see also pp. 34-36). English writing, however, became local and marginalized. When in the 13th and 14th centuries English gradually regained its position, this situation had resulted in extensive regional variation at all levels of language, including morphology, spelling, syntax and lexicon (Milroy, 1992: 156).

Middle English varied according to user and use because there was no centralized model. Milroy (1992: 156) pointed out that ‘the geographical and chronological dimensions are most immediately obvious: texts from different areas are different, and later texts differ very markedly from earlier ones’. Because of such variation and the lack of a institutionalized standard one can say that Middle English does not form a single identity, but rather ‘a complex series of divergent, rapidly changing and intertwining varieties retrospectively seen as transitional between ‘Old English’ and ‘Modern English’ (Milroy, 1992: 157).

6.1.2. Making sense of the variation: the *LALME* approach

Not only did the language vary between texts, but there could be much variation within a single text: for example, in the ‘Tamyrtone’ text there are four different spellings for *weight*, and in the *Linguistic Atlas of Late Medieval English* there are altogether 510 spellings for *through* (Stenroos, 2007: 14). Middle English dialects (like any natural dialects) are not ‘pure’ and consistent, and a linguist, when studying linguistic variation

in Middle English, faces several problems.

A major problem for traditional Middle English dialectology was that medieval texts were rather copies of copies of copies than the author's original scripts. In addition, only legal documents usually contained information about the date and place of production. Other documents lacked such information. (Tolkien, 1929: 104) formulated his view of the problem as follows:

Very few Middle texts represents in detail the real language ... of any one time or place or person ... Their 'language' is, in varying degrees, the product of their textual history, and cannot be fully explained, sometimes cannot be understood at all by reference to geography

This view was strongly challenged by the compilers of *LALME* from 1950s onwards. The main principles of the *LALME* methodology were primary developed by Angus McIntosh (1956, 1963, 1974, 1975), and further developed by Samuels (1963, 1989) and Benskin (Benskin and Laing, 1981).

The principles of *LALME* were based on a few important premises. Firstly, it is assumed that scribes most commonly produce dialectally consistent texts; secondly, that writing varies systematically just as speech does, no matter whether it reflects spoken variation or not; and finally, that texts can be localized in relation to each other on the basis of their dialectal forms.

The object of study in *LALME* is the scribal text rather than the spoken dialect behind it. In contrast to the earlier view by Tolkien, McIntosh assumed that medieval scribes often behaved rather as translators between dialects and generally spelt in a systematic, if complex way. There is no need to assume that they produced random mixtures of forms. According to McIntosh (1989: 92), when transcribing a text, a scribe could do one of three things: translation (turning the text to their own dialect), copying "letter for letter" (transcribe the text as it is) or something between; the last kind of copying might produce a *Mischsprache* or dialect mixture, but even these are unlikely to be entirely random.

This allows us to assume that a scribe's geographical range may be reflected in the usage of certain linguistic forms, and in this way it can be placed at some point on the medieval dialect continuum. *LALME* compares the text language with the anchor text by fitting them in relation to each other based on their linguistic forms. In this way, it is possible to deduce the area where a scribe is likely to have acquired his written language.

When the text is localized the result is plotted onto dialect maps. This method of data collection is named the “fit-technique” and was first outlined by McIntosh in 1952 (McIntosh, 1963: 22); a practical description of the process is given by Benskin (1991).

The first step is to collect a selective index of well-chosen forms that may be good dialect markers (Linguistic Profile), based on a questionnaire. The main aim of the fit-technique is to eliminate the areas to which the individual forms do not belong, and in that way define the area to which the whole ‘assemblage’ or combination of forms can plausibly belong’ (Benskin, 1991: 9).

According to Benskin (1991: 23) ‘a dialect, whether broadly or narrowly delimited, can be regarded as an assemblage of linguistic components’ of which each form has its own distribution. The dialect must be defined in very broad terms, otherwise most of its forms are very likely to be found in the neighbouring dialects. Any gap between the survey points in any dialect continuum is likely display a subset of the forms from the surrounding areas.

The ‘fit-technique’ results in a typology of texts localized in relation to another: however, it does not provide absolute geographical locations. However, the texts are related to the geographical map by the use of “anchor texts”, mainly documentary texts, which reveal their geographical provenance contrary to most medieval manuscripts (Blake, 1992: 4). In this way, approximately a thousand texts were plotted on maps for LALME.

The Atlas, which was published in 1986, presents the collected data in the form of two kinds of dialect maps: Dot Maps and Item Maps, as well as in the form of Linguistic Profiles and dictionaries of variant forms (‘County Dictionary’).

With regard to the study of Late Middle English texts, the LALME work is taken further by the *Middle English Grammar Project* (henceforth MEG) ongoing at the University of Stavanger, with co-workers at the Universities of Glasgow and Oxford, under the leadership of Professor Merja Stenroos. The aim of the project is to transcribe 3000-word samples from each text localized in *LALME* and the *Linguistic Atlas of Early Medieval English (LAEME)* into an electronic corpus and to produce an in-depth description of the Middle English language. *MEG* is different from the *Atlas* projects in that it takes into consideration other factors, including “sociolinguistic” variables, besides geographic ones, such as: orthography, phonology and morphology.

6.1.3. Non-regional variation in written Middle English

From the fifteenth century onwards, the multitude of local or regional dialect gave way to a tendency towards less extreme usage and a gradual process of standardization took place. By then it was common to find texts, the language of which did not yet display signs of standardization but could no longer be placed in a regional continuum. Samuels (1988: 86) calls such language ‘colourless’ regional language:

... when a writer replaces some or all of his distinctively local forms by equivalent which, although still native to the local or neighbouring dialects, are common currency over a wide area. The result is not a series of well-defined, regional standard ... but a continuum in which the local element is muted, and one type shifts almost imperceptibly into another (LALME, I: 47).

The process of ‘decoloring’ of narrowed local forms gradually emerged over large areas, and led to more focused writing systems called ‘incipient standards’ (Samuels, 1963: *passim*). Samuels, identified four such ‘incipient standards’, Types I-IV, which at least potentially provided models for imitations beyond the local area. The actual process of standardization began in the middle of the fifteenth century and was based on Samuels’ Type IV, known as the “Chancery Standard”.

Since about 1430 onwards, the use of written English in the legal domain, produce in London, demonstrated many of the characteristics of Type 4. This usage was the language of administration, court records, law manuals and other government documents. It seems to have been based on the language used by Middle-Class Londoners, which was strongly influenced by immigration from the Central Midlands. This type was of crucial importance in the process of standardization of the English language.

By 1470, the Westminster writing conventions were widely spread to other areas thanks to lawyers who after completing law studies at Westminster, came back to their homelands and came to replace the local forms with those of Type IV (Samuels, 1989: 67). At the end of fifteenth century, in written English still contained variation; however, it was no longer regional:

Spellings which have hitherto been members of regional systems become like the coins when two currencies are combined; they have the same functional value as before, but they pass from writer to writer, or from writer to printer and back again, and their regional significance is lost (Samuels, 1981: 91).

This developing standard, gradually accepted by a growing number of users, eventually developed into more than a regional standard and formed the basis of modern written English. The most typical forms of Type IV were defined by Samuels as follows: *world*, *neither*, *though*, *they*, *gaf* ‘gave’, *not*, *but*, *such(e)*, *theyre* ‘their’ (Samuels, 1989: 71, 80).

Of the other types, only Type 1 spread widely, and it is in fact the variety of Middle English that survives in the largest number of texts (Benskin, personal communication). Like Type 4, it was not a homogenous usage. According to Samuels (1989: 67) ‘this is a standard literary language based on the dialects of the Central Midland counties, especially Northamptonshire, Huntingdonshire, and Berfordshire’. Starting from the mid-fourteenth century onwards, a great number of texts showed characteristic features of Type 1. The language came to be known as the language of the Wycliffite Bible. It was adopted by the Lollards who also spread it in their sermons and tracts, perhaps because the speech of Midlanders was the most widely understood (Samuels, 1989:67). It has been suggested that, despite the usage of Type 1, especially in religious texts, there was also a great number of medical texts produced in it (Taavitsainen, 2004:213); however, this view is still controversial. The most typical forms of Type 1 are: *sich* ‘such’, *mych* ‘much’, *ony* ‘any’, *silf* ‘self’, *stide* ‘stead’, *3ouun* ‘given’, *si3* ‘saw’ (Samuels, 1989: 67).

Types 2 and 3 represent London language at different points, which according to Samuels (1989: 70) gave them the potential to be selected for standardization. Type 2 was found in nine mid-fourteenth century manuscripts from the Great London area including the ‘Auchinleck MS’. Characteristic forms of Type 2 are: *werld* ‘world’, *noiþer*, *noþer* ‘neither’, *þei*, *þei3* ‘though’, *þai*, *hij* ‘they’. Type 3, on the other hand, is best known as the language of the “best” manuscripts of Chaucer as well as of other manuscripts written in London around 1400. Its typical forms are: *world*, *neither*, *though*, *they*, *yaf* ‘gave’, *nat* ‘not’, *swich(e)* ‘such’, *bot* ‘but’, *hir(e)* ‘their’ (Samuels, 1989: 70; Benskin, 1992: 78).

According to Benskin (1992: 77), the origins of the early written standard lie in

the whole southern and Midland dialect continuum, rather than in one particular area. Type 2 remained predominantly Essex and was current until ca.1360. After that period, the Chaucerian type displaced the literary type 2 and was present in local documents as well. Neither type ever spread outside the London area. Recognisably different from Type 3, Type 4 displaced the language of Chaucer and eventually, after 1430s it was adopted in government documents and then spread throughout the country and into different domains. This spread was, however, slow and gradual, and the use of regional dialect continued well into the second part of the fifteenth century in many areas and domains.

6.2. The ‘Tamyrtone’ text

6.2.1. The Norfolk context

East Anglian English has a special place in the history of the English Language. Fisiak (2001: x), in fact, suggests that ‘English started here’. He bases this on the claim that a number of Standard English features had their origin in East Anglia.

A direct connection to the original West Germanic-speaking areas across the North Sea resulted in a heavy immigration of people speaking varieties of West Germanic languages. The arrival of the Anglo-Saxons in the fifth century into a land inhabited by Celts, and the later Viking raids in the ninth, tenth and eleventh centuries resulted in a colonisation by waves of invaders and, in this way, to language contact on a large scale. Fisiak (2001: x) hypothesizes that such language contact played an important role in the forming of the first English-speaking places in the world.

Gradually, along with the Bristol and York areas, East Anglia came to be among the most densely populated areas of the British Isles. Norwich, the largest city of Norfolk, was at times the largest city of Medieval England, after London. Fisiak (2001: x) also suggests that the proximity of East Anglia to London resulted in a pattern of emigration from this region to London.

Kristensson (2001: 71) suggests that, due to immigration from Norfolk and other East Midland counties (especially Suffolk and Lincolnshire), the London language took the dialectal character of the East Anglian area. The influx of people from Norfolk was at its

largest in the fourteenth century, and immigrants came to occupy prominent positions in the society of London. Most important of them were sheriffs, Mayors, members of parliament, government officials and remarkable great number of merchants. Of interest in here is to mention that many immigrants from Norfolk were goldsmiths and clerks (Kristensson, 2001: 75). The immigrants contributed to an upper-class dialect in London which was later adopted by the government offices as the written language that eventually developed into a standard (see p. 50).

The reason for the extensive emigration was the population density of Norfolk and the growth of the wool trade and industry. The latter was the source of wealth in medieval England which alongside the growing interest in medical practices in Norfolk resulted in extended contact between Norfolk gentry and London law, business and trade representatives (Kristensson, 2001:76). Norfolk also became a thriving centre of book production with wide networks of people using written texts (Jones, 2001: 34).

The LALME localization of the Tamyrtone text suggests that its dialect belongs to northern Norfolk, approximately to the area of the town of Holt. There are very many texts localized in LALME in Norfolk, and the localizations may therefore be looked upon as quite precise, in the sense that there are no large margins around them. However, the localization of the dialect of course does not mean that the manuscript came from that place, as scribes moved. However, the area of Holt would not seem unreasonable as the historical context of the present text.

Described as a market town, Holt was recorded in the Domesday Book of 1086. From 1080 it was known as a thriving place of trade and commerce. The town was devastated by a fire on 1 May 1708, but the town was rebuilt in Georgian style. It lies very close to a road leading to Norwich (approximately 22 miles from Norwich)⁵. The town is today best known for Gresham's public school, founded in 1555 by Sir John Gresham, Lord Mayor of London and founder of the Royal Exchange. As a child Sir Gresham was a student of Augustinian canon's school of Beeston Regis, a village nerby the town of Holt. Close ties of the school with the Fishmongers' Company and the City of London remain strong to this day⁶. The status of the town as a lively market town with easy access to skins probably resulted in the

⁵ <http://www.norfolkbroads.com/regional-information/regional-towns-and-villages/holt;>
<http://www.poppyland.co.uk/index.php?s=HOLT>

⁶ <http://www.greshams.com/About/School-History.aspx>

production and exchange of different kinds of merchandise, including books. It may be supposed that Holt would have provided a context of literacy and text production.

According to Jones (2001: 165), there was considerable manuscript production in the vernacular in the East Anglian counties in the late Middle Ages. The production was commercial and had the aim to meet a demand for vernacular texts. A very large number of books were produced in a strongly regional Norfolk dialect. At dusk of the age of written dialects, distinctions between dialects had begun to blur. Samuels (1981:87, 88) suggests that 'colourless' language usage led to the eventual standardization of English. However, Norfolk dialect, even with colourless forms, seems to have been continued to be used for quite some time, still recognizable as East Anglian. The dialect of Norfolk was, in fact, so characteristic that even surrounding counties had difficulties to understand it (Jones, 2001: 165).

East Anglia had a considerable number of prominent people and families who held books and literature in high regard. Among them were university-trained physicians with the Bachelor or doctor of medicine. There were, however, also many people who practiced medicine with no academic medical training. The needs of the population for such services were so high that number of practitioners received ecclesiastical licences to practice medicine. The church regulated the granting of licenses for the practitioners of medicine who were to 'maintain the health of his parishioners' bodies, as well as their souls' (Jones, 2001: 171). The diversity of practitioners included surgeons, apothecaries and barbers, who were considered merchants and enjoyed civic privileges (Jones, 2001: 171).

Many of the Norfolk families owned medical handbooks or collections of medical texts. Some of them were written in their own handwriting, some were written by professional scribes, mainly in the Norfolk dialect. The use of dialect means that the texts were primarily written for local societies, even for individual use. However, other practitioners copied such books and the copies could travel to different parts of the country, perhaps with changes to the language (Jones, 2001: 171).

The general use of medical texts outside circles that made their living from medicine can be noted in famous letters of Paston family of Norfolk. The letters cover the period approximately from 1378 till 1495 and the authorship is attributed to four generations of Pastons. The Paston materials are good evidence for the use of English in medical writing. The Pastons had a great interest in medicine and John Paston I (1421-1466) was the owner of at least one medical book (Davis, 1955: 120).

While John's father, William, used Norfolk dialect when writing English, John and his sons used more colourless forms. All the men of the Pastons were brought up in Norfolk and

took their education at Oxford or Cambridge, however, most of them had strong and continuing interests in London. Those who used to live in London for longer times seem to have started using standardized forms, while those who remained in Norfolk continued to use regional dialect (Davis, 1955: 121; Jones, 2001: 164).

6.2.2. The dialectal characteristics of the ‘Tamyrton’ text

The dialect of *The way of obtaining the Grand Elixir* was localized in Norfolk in *LALME*, and forms the basis for the *LALME* Linguistic Profile 4627. The text contains relatively much orthographic variation considering its relative shortness; for example, the items ‘weight’ and ‘white’ show the following partly overlapping ranges of forms: *whygt*, *wyght*, *wygt*, *wyhgt* and *whyt*, *wyhgt*, *wyght*, *wyghte* respectively. However, the variation is mainly limited to specific areas of orthography (such as the spellings corresponding to Present-Day English *-ght* and *wh-*) and does not suggest a regionally mixed dialect. In any case, *LALME* (1989, 2: x), suggests that ‘[i]n East Anglia (especially Norfolk), and also in Lincolnshire, an individual writer’s range of variant spellings for a single word is generally greater than in most other counties’.

The text is, on the whole, strongly dialectal, and contains a large number of features of a limited geographical distribution. The following forms in the text may be used to illustrate the *LALME* localization in Norfolk:

ageyn ‘again’, *os* ‘as’, *fyir* ‘fire’, *myth* ‘might’, *nat* ‘not’, *xal* ‘shall’, *qwan*
‘when’, *qwych* ‘which’

The form *ageyn* (Dot Map 217, *LALME* I: 359) is scattered around most of the Midland area, with areas of particular concentration in the West Midlands (especially Herefordshire and Worcestershire) and in East Anglia. It does not occur beyond the southern part of Lincolnshire; for the present text, it constitutes a northern limitation.

The form *os* (Dot Map 628, *LALME* I: 463), on the other hand, seems to have been a mainly Northern form. Its main area of distribution includes Derbyshire, Nottinghamshire and the West Riding of Yorkshire, and there are scattered examples in Leicestershire. It can also be found in Northern Norfolk and Lincolnshire, however, only in small areas. Together, *ageyn* and *os* limit the possible localization to a wedge

including the central North Midlands and northern Norfolk.

The form *fyir* is relatively rare; according to the LALME *County Dictionary* (LALME IV: 170) it is only found in Norfolk and Ely, except for an occurrence as a very minor form in the West Riding of Yorkshire. Because the Norfolk dialect was very conservative, it has been suggested that forms such as *fyir* could have represented a continuation of OE long *y*; however, this question falls outside the present study.

The form *myth* ‘might’ (Dot Map 334, LALME I: 388) shows a main area of distribution in Norfolk; otherwise the form is found thinly scattered over various parts of the southern and midland areas. Together with the previous forms, it limits the possible area of localization to northern Norfolk and the immediately adjoining parts of Cambridgeshire and Lincolnshire.

The form *nat* (Dot Map 276, LALME I: 373) has a southern distribution, including East Anglia, the Home Counties and the Southwest Midlands, as well as a scattering of forms throughout the south. This form rules out Lincolnshire localization for the present text. According to Samuels (1989: 70) and Benskin (1992: 78, 89) *nat* is a characteristic feature of Type III.

The form *xal* (Dot Map 149, LALME I: 342) is often regarded a distinctive Norfolk form of ‘shall’. This variant occurs only in East Anglia, and is particularly common in Norfolk. It is not found in any other geographical areas. Wright (2001: 90), suggests that the *x*-spelling was used by Norfolk scribes as a minor form by 1388/1389. The use of *xal* limits the present localization to the northern part of Norfolk.

The form *qwan* (Dot Map 337, LALME I: 389), as well as the *qw*-variant for *wh*- in general (Dot Map 272, LALME I: 372), are distinctively East Anglian and Northern features. A very dense distribution can be found in Norfolk, the Northern parts of Suffolk, as well as North of a line going south of Lincolnshire, Cheshire and the West Riding of Yorkshire.

The form *qwan* ‘when’ spelt with an <a>, is frequent in the whole Midland and Southern area, with a few examples found in the South-Eastern part of the West Riding of Yorkshire. However, forms combining the *qw*- and *a*-spellings (*qwan*, *qwanne*) are more or less restricted to East Anglia (LALME IV: 102).

Together, these features limit the possible area to northern Norfolk. The variation present in the text agrees with this area, with one possible exception. The form *beth* ‘are’ (Dot Map 128, LALME I: 336), which occurs twice in the text, has a southern distribution pattern, with only scattered occurrences in the Midlands. It appears in the

southern parts of Suffolk, but displays a particularly high frequency in Essex, and London. The *beth* form also shows a very dense distribution in the Southwest Midlands. However, it does not occur in Norfolk except for the present text.

It is possible that the form *beth*, together with the other forms typical of the Southwest Midlands, could signal a textual history with a Southwestern/Southwest Midland element. This is of some interest considering the suggested connection of the text with Thomas Norton, who came from Bristol. On the other hand, such ‘southern’ forms might simply represent a conservative element in the Norfolk dialect.

The text also shows some features typical of Samuels’ ‘types’; these include the Type III *nat* and *wyl*, Type IV *shuld* and Type 1 *mych* ‘much’, *ony* ‘any’. None of these forms, however, suggest any direct influence from these types. They occur in varying degrees all over the Midland area, and are in no way exceptional in the Norfolk area. The text shows no examples of forms suggesting standardisation that would not be normal Norfolk usage. Conversely, the large number of dialectal features, including *xal* ‘shall’ and the *qw*- spelling for *wh*-, which are highly characteristic of Norfolk and rare in other areas, suggests that the text is to be considered strongly dialectal.

This strongly dialectal character of the Tamyrton text may also be reflected in its vocabulary. The words *renyll* ‘rennet’ and *cruselet* ‘?crucible’ are found neither in the *Oxford English Dictionary* nor in the *Middle English Dictionary*; on the other hand, this may simply reflect the limited use of alchemical texts as source material for the dictionaries.

6.2.3. Morphology

This section is a selective description of the morphology of the ‘Tamyrton’ text, with focus on those morphological features which place the Tamyrton text in the Norfolk area. The number of token occurrences is given in brackets throughout.

The noun plural endings in the present text are *-es* (7), *-s* (4), *-ys* (2) and *-is* (1). The adverb suffix is *-ly* (6).

In the present text, the third person singular present tense indicative suffix is *-th* (14), once appearing as *-ht*. This is the expected Midland form; the ending *-s* is common

in the nearby county of Lincolnshire, but for some reason Norfolk is largely without -s (Wright, 2001: 145). The -th ending was originally the form that appeared in the developing standard literary English. Only later, when the northern third person -s ending spread into London, the -th suffix began to give way and was used as a style marker in formal contexts (Milroy, 1992: 176).

The present participle ending in the text is -yng (8). The suffixes of weak ppl. are: -d (4), -yd (13) -yde (1), -ed (1), -t (1); strong ppl. – yn appears (3) times.

The paradigms for **be**, **have** and **do** in the 'Tamyrtone' text are as follows:

- **be**

Infinitive	- <i>be</i>
Present 3 sg indicative	- <i>ys</i> (32), <i>is</i> (3),
Present pl. indicative	- <i>be</i> (2), <i>beth</i> (1)
Past subjunctive	- <i>wer'</i> (1), <i>wer</i> (2)
Imperative pl.	- <i>beth</i> (1)

- **do**

Present subj. and ind.	- <i>do</i> (4)
Past indicative	- <i>dyd</i> (3)
Past participle	- <i>done</i> (7)
Singular imperative	- <i>dothe</i> (1)

- **have**

Present 1 sg indicative	- <i>haue</i> (1)
Present 3 sg indicative	- <i>hath</i> (1)
Present 3 sg subjunctive	- <i>haue</i> (1)
Present pl. indicative	- <i>haue</i> (6), <i>han</i> (1)

The following forms of the modal verbs occur in the text:

- will	- <i>wyl</i> (6), <i>wyll</i> (1)
- shall	- <i>xal</i> (6), <i>shal</i> (3)
- should	- <i>shuld</i> (2)
- may	- <i>may</i> (4)
- must	- <i>mwst</i> (1)
- can	- <i>kanne</i> (1)

The *xal* variant for *shall* is often regarded as a typical Norfolk form (Wright, 2001: 89).

The demonstrative pronouns show the following variation of forms:

This	<i>þis</i> (2), <i>þ^{is}</i> (7) <i>th^{is}</i> , (3), <i>thys</i> (3)
That	<i>þat</i> (1), <i>þ^t</i> (9), <i>that</i> (1),
These	<i>þes</i> (1), <i>þ^{es}</i> (1), <i>thes</i> (3), <i>Thes</i> (1)
Those	-

The personal pronoun paradigm is representative for East Anglia and can be described as follows:

		singular	plural
First person	subjective	<i>j</i> (2)	-
	objective	<i>me</i> (1)	<i>vs</i> (1)
	possessive	<i>my</i> (-)	<i>our</i> (1) (?)
Second person	subjective	-	<i>ye</i> (1), <i>3^e</i> (17)
			<i>3e</i> (8)
	objective	-	<i>3^u</i> (2)
	possessive	-	<i>3our</i> (11)
Third person	subjective	<i>he</i> (29)	-
		<i>yt</i> (18), <i>it</i> (7)	-
	objective	<i>hym</i> (11)	-
	possessive	<i>hes</i> (4)	-

The use of the personal pronouns involves two usages that are of some interest. Firstly, the consistent use of the formal pronoun of address was noted on p. 42; in the fifteenth century, this usage was untypical of instructional texts, including recipes, generally being restricted to courtly genres and letters (Burnley, 1983: 17-22). Another very interesting feature is the use of the pronoun *he* for inanimate objects, a usage that seems to be typical of alchemical texts.

6.2.4. The use of *he* for inanimate objects

The ‘Tamyrtone’ text exhibits variation between the pronouns *he* and *it* for inanimate objects such as *sulphur, mercury, mixture, stone etc.* Similar usages have been studied by Grund (forthcoming), in a range of alchemical writings; the present section will simply present an overview of the usage in the ‘Tamyrtone’ text.

In the present text, as in many other alchemical and scientific texts, the pronoun *he* occurs more frequently than *it* in anaphoric reference to inanimate objects. While this usage seems to be conventional in this genre, there are different possible explanations for the selection of *he* rather than *it* in particular cases. A traditional explanation for the use of gendered pronouns is the influence of Latin originals in the case of translations and adaptations; Latin loanwords may also be influenced by their native gender. For example, the Latin inflectional ending for *mercurius* is *-us*, which signals masculine gender:

jn os myche os mercury ys lyght of fleyng he nedyth a medycyn that may
sodeynly ioyne hym or he fle (ll. 68-70)
‘because mercury is light of flight it needs a medicine that can quickly bind it
before it escapes’

A very interesting usage of the pronoun *he* can be illustrated by an excerpt from the Tamyrtone text:

then tak an yrn & het **yt** tyl **yt** be rede hote. & lete thys whete corn wygt lye
per vpon þ^e space of half a pater noster whyl. & yf **yt** hold hes whygt þan yt ys
wel. & yf **he** do nowt. 3eld hym ageyn to þ^e fyre tyl **he** hold whygt. Qwan **he**
holdyth whygt thus xal 3e do (ll.45-51)
‘Then take an iron and heat it until it is red hot and let this weight of a
grain of wheat lie on it half the time of a pater noster. If it holds **his** weight
then **he** is done; if **he** does not, then put **him** back into the fire until he
holds **his** weight. When he holds his weight you shall proceed in this way’

Grund (forthcoming) suggests that one possible triggering factor for the use of *he* is the clustering of *he* forms in the near context. Once such a form is introduced, it is very likely that more will follow within the nearest 15 words. He also adds that such a clustering tendency may have been influenced by forms such as *him, his, himself*, which historically were forms of *it* as well (see also Pawley 2002: 114).

Another example suggests that the use of *he* may be influenced by the

personification of inanimate objects with human forms, behaviours or sensibilities:

wan **he** ys wyght *cristalyne* þ^e rede ys hyd wⁱn **hym** lyk os blode ys hyd in man. Of qwyche rednes þ^er ys none oder drawyng owt but only wⁱ incresyng of þ^e fyre. ffor þ^e fyrst dyges tyoun of þ^e stomak kyndly wyghtyth The secund of þ^e lyuer redyth. ffor 3^e know wele yt þ^e sperme ys nat gendyrd tyl **he** be wele decoct in þ^e lyuer so y^t **he** haue takyn þ^er hes inwardly rednes. for but **he** wer^t inwardly <rede> þ^er shuld no thyng gender of **hym**. Ryth so our wyght medycyn. but yf he wer sodyn in þ^e fyre **he** shuld nat be rede (ll.113-124)
'For when **he** (the red elixir) is crystal white the red is hidden within **him** just like blood is hidden inside a man. The redness will only be extracted out when you increase the fire. For the first digestion of the stomach by nature makes white. The second digestion makes red. You know well **the sperm** is not produced until **he** has been heated in the liver so that he has taken there his inner redness. But for **he** was inwardly red nothing would be produced by **him**. In the same way our **white medicine**, unless **he** was not boiled **he** would not be red'.

Here *mercury/medicine* takes human characteristics and this inanimate object is now viewed as humanlike.

According to Grund (forthcoming), variation between *he* and *it* may also be determined by the individuation and personification of an entity: animate vs. inanimate or concrete vs. abstract inanimate. Such individuation was an important factor during the loss of Old English grammatical gender, which resulted in a more frequent usage of *it* for inanimate objects, beginning from mass and uncountable nouns (Siemund, 2008:247; Stenroos, 2008 in Grund, forthcoming). However, Grund claims that, in alchemical texts, *he* is used for mass noun phrases such as *gold, the sun, mercury, powder, medicine and pot* while such objects as vessels, covering, and glass, never take *he*.

This seeming discrepancy might perhaps be explained by the symbolic language of alchemy and the concepts behind the terms. While *gold, mercury* and *medicine* may be grammatically uncountables, in an alchemical text they present highly active and individualized forces. Such an explanation would seem to be the only one that makes sense of the otherwise bewildering use of *he* in lines 20-23 in reference to the word *blaknes*, an abstract uncountable noun with a common feminine Old English suffix:

The qwyche powder wⁱl contynwal fyryng wyl twrn in-to **mercury** kouerd wⁱl blaknes lyk to pych. The qwyche blaknes lyk os **he** co[m]’ owt of þ^e body **he** wyl go in ageyn in to þ^e same body (ll.20-23)
'which powder under continuous firing will turn into mercury covered with a blackness similar to wood tar. Just like the blackness came out of the body he

will go back to the same body'

7. Concluding discussion

The way of obtaining the Grand Elixir forms part of the general tradition of alchemical texts produced in Western Europe during the late Middle Ages, both in terms of its content and what seems to be the conventional epistolary style. It gives an outline of the process of transformation used by most famous alchemists, and it uses mystical and symbolic language that is characteristic for alchemical writings.

To a large extent, the present text is written in the form of a recipe, giving detailed and direct instructions for the preparation of the Grand Elixir. At the same time, it is clear that the text is more than a recipe: it is an explanation of alchemical practice and principles. It explains the principles while it instructs in the process. In consequence, this is very strongly a *didactic* text, rather than just a simple recipe. Finally, even though its function in the present manuscript context is that of a recipe or treatise, it has many characteristics of the personal letter: at the end of the text there is a letter formula 'I can do no more but ...' which suggest that the text was written to a real recipient. This format seems to be conventional in alchemical texts. However, it is not unthinkable that the present text could have originated as a personal letter; this might be suggested by the formal *ye* pronoun used throughout, rather than the *thou* typical of impersonal instruction.

If the text was indeed written with a specific addressee in mind, the name 'Tamyrtone', which is written above the text, might be interpreted as that of the addressee. On the other hand, reading the text as a recipe, it might instead be interpreted as a heading stating the source or author of the text. It was suggested above that the mysterious name 'Tamyrtone' may have been a pen-name, based on an anagram, of the Bristol alchemist Thomas Norton. This is suggested both by the fact that Norton is known to have used anagrams to sign his name, and by some of the dialectal forms in the text, which may indicate a textual history involving a southwestern dialect.

Thomas Norton would seem to fit the context of the letter well, either as the addressee or the writer (whether real or fictional). However, the evidence is far from conclusive, and similarly there is no evidence to prove whether the text was written by or for Tamyrtone. Both possibilities would seem logical, depending on which text type conventions are being

followed. It should be noted here that the study of English alchemical texts has been rather limited so far, and further studies on alchemical writings and their contexts may help solve at least some questions such as these.

Whatever its precise background, the text is of considerable interest as part of the vernacular text production in medieval England. The language of the Tamyrton text displays strong dialectal features characteristic of the Norfolk area. While it contains a few features typical of Samuels' Types I, III, and IV, these features would have been usual in Norfolk as well and do not suggest any active standardising influence. On the other hand, the appearance of features such as initial *x-* in *xal* 'shall' and *qw-* in *qwyth* 'which', as well as the form *qwan* 'whan' marks the dialect as a strongly Norfolk one.

The local dialects of written Middle English are generally seen as the result of the marginalisation of written English, and its isolation into local contexts. As regards the present text, the marginal notes and manuscript context indicate a Latinate and learned context. However, there is no reason to see this English text as an isolated occurrence. Judging from the overall dialectal evidence, Norfolk seems to have been a prominent area for the production of scientific texts in the vernacular, including both medical and alchemical works; the present text may be placed within the scientific 'discourse community' of medieval Norfolk described by Jones (2004: 23-26). One might ask why these texts should have been produced in a strongly local variety of English during a period when 'colourless' language was spreading: perhaps the wish to restrict the use of these texts to the initiated meant that there was no motivation for making the language widely accessible.

PART II: THE EDITION

Notes on the editorial conventions

The transcription aims to give a faithful representation of the manuscript text at the level of spelling and represents the manuscript text as closely as possible within this level. Only very few editorial adjustments have been made to ease legibility; these are all intended to be transparent, and are described in what follows.

Orthography and letter forms

The letter form *y* represents both a consonant and a vowel, corresponding to the present-day spellings <th> and <i> in the manuscript text. The two functions have been distinguished in the edited text to ease legibility: thus, when *y* represents the fricative consonant it is transcribed as *þ*, and when it stands for the vowel it is retained:

	<i>the manuscript</i>	<i>the edited text</i>	<i>translation</i>
line 1 -	y ^e son'	þ ^e son'	the sun
line 2 -	of both yes	of both þes	both of these
line 17 - 18	yt wyl	yt wyl	it will

Another ME graph, *yogh* (ȝ), is used for elements corresponding to the present-day initial <y> and is transcribed as *ȝ*, e.g. ȝ^e 'ye' (line 15), ȝ^u 'you' (line 151).

The graphs *u* and *v* are used for both a consonant and a vowel and are retained in the transcription. The reader should note that the scribe used the spelling <v> at the beginning of words (initially) and the <u> in the middle of words,

f.ex.	line 85	vpon
	line 108	vndyrstandyth
	line 86	eueryche
	line 89	haue

In the edited text Roman numerals are used. The letter *j* in its minuscule form, usually stands for 'one', or, marks the last minim in a sequence of numbers; however, in two examples, it

also stands for the personal pronoun 'I', e.g. Now j haue (line 150); j kanne no mor' (line 153).

Abbreviations and symbols

The small format of the manuscript book probably contributed to the quite plentiful use of abbreviations in the present text. Many kinds of abbreviations are used in the text including the following:

- suspensions, where the last letter(s) of a word are omitted and indicated with a sign of some kind (f.ex. $\overline{d\bar{i}}$ for *dim* – an overline for *m* and *n* is also used in contractions, l. 1; and other signs (f.ex. \overline{Tha} ' for *Than*, l. 3; $\overline{to-gedre}$, l. 6)
- contractions, where some letter(s) in the middle of the words are omitted and this is indicated with the sign (f.ex. \overline{sponge} , l. 11; $\overline{in-to}$, l. 18)
- superscripts, where some letter(s) is indicated by inserting one of them above the word (f.ex. $\overline{to} p^e w^h yth$, l. 26).

The full list of abbreviations used in the 'Tamyrtone' text is as follows:

\overline{u}	ua (after Q)	e.g. <i>quarter</i> (l.1)
\overline{r}	ra	e.g. <i>trauelle</i> (l.42)
\overline{e}	er, re	e.g. <i>vynegre</i> (l.5)
\overline{u}	ur	e.g. <i>purgyd</i> (l.2)
\overline{m}	m or n	e.g. <i>Than</i> (l.4)
\overline{r}	ri	e.g. <i>cristalyne</i> (l.114)
\overline{p}	per, par	e.g. <i>part</i> (l.44)
\overline{p}	pro	e.g. <i>procede</i> (l.89)
\overline{c}	con, com	e.g. <i>contynwal</i> (l.20); <i>compown</i> (l.138)
\overline{e}	es	e.g. <i>sydes</i> (l.55)
$\overline{p\ r}$ $\overline{n\ z}$	pater noster	e.g. (l.77)
\overline{A}	and	
\overline{e}	final –e or otiose stroke	

In the edition, most of the abbreviations are expanded according to the conventions of the *Middle English Grammar Project Corpus* (MEG-C), as described in the *Corpus Manual* (Stenroos and Mäkinen, 2008). For example, suspensions, contractions and other special abbreviation signs are expanded and transcribed in italics:

line 4	Thā	Than
line 14	ī	in
line 48	yā	þan
line 127	yʹ	þer
line 43	ƿʰ	part

Superscript letters in the manuscript, however, are represented by superscript letters in the transcription:

line 9	y ^e salt	þ ^e salt
line 11	w ^t	w ^t

The ampersand used for ‘and’ is transcribed as &.

Other features of the text

Manuscript punctuation, line division and capitalisation are left unchanged. The punctuation consists almost entirely of the use of *punctus*. *Punctus elevatus* is used once (line 41) and is transcribed using a semicolon. Paraph is used in the text twice; first in line 106 and the second one in the very last line (155) and transcribed as ¶. The doubled f (*ff*) stands for a capital F, however it appears unchanged in the transcribed text.

In the manuscript, some words which in Present-Day English are written as single words are written as two separate words. In the transcribed text, a hyphen is added to ease legibility, e.g. *in-to* (line 17). Hyphens are also added where words are divided across lines without any marking in the manuscript; all hyphens in the transcribed text are thus editorial. In the case when a scribe has marked the division of words across lines, the mark is transcribed as an equal sign =.

When a word is added above the line and, in one case, in the margin (line 62) it is marked by < > brackets and placed in the place where the insertion is intended, generally marked with a caret in the manuscript.

End strokes or ‘squiggles’ (see Stenroos and Makinen, 2008), which may or may not relate to a final –e, are indicated with an apostrophe, in accordance with the practice of Parkes (1979: xxx). All underlined or crossed out and expuncted words in the manuscript are reproduced in the transcribed text.

Very occasionally, what seem like obvious scribal errors are emended. The emendations are indicated by square brackets [], and the manuscript reading is given in a footnote. In a single case (line 58), there is uncertain reading of the word which is also marked by [] brackets and indicated in footnotes.

The way of obtaining the Grand Elixir

Tamyrtone

39r

Tak .j. *quarter* .℥.⁷ of þ^e son'. & *dim*.⁸ .℥. of the
monn purgyd. And mak of both þes so-
tyl ~~powder~~ lymal. Than tak .j. ℥. & *dim* of *mercer*
& put to þ^e lymal aforseyd. Tha' tak .v. or .vj.
sponful of *vyneger* & salt half an handful. & 5
grynd all þ^{es} maters to-geder in a treen dyshe
tyl þ^e son' þ^e mon' & þ^e qwyksyluer be wel
takyn togedyr. Tha' tak water mydyl hot
& wasch away clen þ^e salt & þ^e *vyneger* tyl all
be freshe tastyng at 3our tong. & þan dry þ^e ma= 10
ter w^t a sponge or w^t a cloth. & wen yt ys dry
put it in-to 3our vessell os y^e know & stoppe
it wel þ^t no eyr' go <in> ne owt the qwych myth
be *confusion'* to 3our werk. Than set it in 3our
furneys makyng fyir vnder os 3^e know. Thes 15
be sygnys þ^t wyl shewyn in 3our werk. ffyrst
it wyll *congel* in-to an hard gobet. Then yt
wyl wast vnder in-to powder a lytyl & a lytyl

⁷ an ounce – a unit of weight (see explanatory notes)

⁸ *dim*: dimidium – a half

tyl all þ^e substawnse be wastyd *in-to powder*
 The qwych powder w^t *contynwal fyrng wyl* 20
 twrn *in-to mercury kouerd w^t blaknes lyk to pych.*
 The qwych blaknes lyk os he co[m]⁹ owt of þ^e

 39v
 body he wyl go in ageyn *in to þ^e same body*
 And os þ^e blaknes passyth; þ^e wytnes shew=
 yth. And than be sekyr *3our* werk ys done os 25
 to þ^e w^hyth. ffor þ^e wyld wyl *neuer* be tam
 but *in w^hyth*. But be-twyn blak & whyt
 many colowrs xal shewe. wer of takyth
 no eyd. for blak & whyt beth endles co=
 lowrs for *yer* nys no colour but he tak 30
 mor or les of on of thes tweyn. Perfor
 wha' he ys whyt shynyng cler' *in* thys ma=
 ner xal 3^e gouern hym. Tak *3our* vessel and
 bery hym *in 3our* forneys leying sond aboue
 þ^e thyknes of an vnche & mak fyir a- 35
 boue w^t a twrfe or tweyn. & vndyr *in þ^e*
furneys be þ^e same space of .iij. dayes tyl
 al þ^e whyck þ^t cleuyt<h> be þ^e sydys twrn
 þ^e body þat he came fro and all be on

⁹ MS: con'

substawns. *than* wete 3^e wel yf he be shy=
nyng whyt; all þ^e whyck ys ded. & *than*
ys all þ^e *trauelle* done. Thus xal 3^e asay
weder þ^e spyryt ys dede or nat. tak .j. *part*
of þ^e body þ^e whygt of .j. wete corn. &

40r

weyg it. *then* tak an yrn & het yt tyl yt
be rede hote. & lete thys whete corn wygt
lye þer vpon þ^e space of half a *pater noster* whyl. &
yf yt hold hes whygt þan yt ys wel. & yf he
do nowt. 3eld *hym* ageyn to þ^e fyir tyl he hold
whygt. Qwan he holdyth whygt thus xal
50

3e do. Tak of þ^e whyt in þ^e glas .j. *quarter* & kepp
þ^e oder .iiij. *quarters* to þ^e red werk. *Than* tak þis
quarter of þ^e whyt and put in-to a balaunce than
tak os mych qwyksyluer & put in-to þ^e todyr
balaunce so that both sydes be of euyn whygt.
55

than tak .j. *part* of þ^e qwyk-syluer & grynd w^t þ^e
part of þ^e whyt ston. þan put yt in-to a glas

[th[·]] ¹⁰ shape  ¹¹ & stop yt abone & put yt in 3our fur-

¹⁰ MS: the abbreviation is difficult to interpret; it does not resemble either a superscript s or the usual abbreviation for *er* (Hector 3)

¹¹ MS: the shape of a phial – a glass vessel for holding chemicals

neys *makyng vndurneth* fyir os 3^e know. and
be þ^e space of .iiij. howres yt wyl twn *in-to* 60
the vertue of þ^e ston. And than lyk os 3^e haue
<done> w^t þis *part*. so do w^t odyr .iiij. *partes* of þ^e qwyk-
syluer. tyl yt 3eld yt to lygt *meltyng* os wax
asaying in þ^{is} *maner*. Tak a corne¹² wygt of þ^e
stone & ley yt vpon an hote yryn & leye 65
os myche wex *þer-by*. & yf þ^e ston melt os lyght=

40v

ly os þ^e wax. tha' he ys redy to *multyplye* ffor
þ^e filosofyr seyth. jn os myche os *mercury* ys lyght
of fleying he nedyth a *medycyn* that may sodeyn-
ly ioyne hym or he fle. for þ^e *medycyn* mwst be 70
os lyght of *meltyng* os þ^e *toder* is lyght of fleying
or ellys 3^e xal nat fynd þ^t 3e seyke. fferther-
mor' in þ^{is} *maner* 3^e shal ~~mak~~ *compowne* Tak of
þ^e ston .j. peny wyght & .v. peny wyght of *mer=*
cwry & put all þ^{is} *in-to* a crusyble *in embyr* 75
or ellys vpon colys so yt be nat to hotte & w^t=
in lesse tym þan a *pater noster* wyghl yt wyl twn

¹² MS: acorne

in-to þ^e kynd of þ^e ston. And lokyth *euermore*
 3e haue fyre of clene kolys nowt to *strong*
 for *euermor'* afor þ^e *meltyng* he ys *elixer* & aftyr 80
 þ^e *meltyng* he ys metall. Tha' tak .j. peny wyhgt
 therof & put to þ^e ston. & than ys þ^e ston *neuer*þ^e=
 lesse. Than tak þ^e .x. peny wyght *aforseyd*
 & depart hym *in .x. partes* and cast *euyrych .j. part*
 vpon .x. of *mercer*. & than 3e han .C. Than depart 85
 þ^e *forseyd .C. in-to .x. partes*. and cast *eueryche part*
 vpon .C. and than 3e haue .M. Than depart þ^{is}
 .M. *in-to .x. partes* & cast *eueryche part* vpon .M. and

41r

than 3e haue .C.M. And so depart and *procede in-to*
infynite. ffor he ys os fyr' among wode. os 90
 mwske among *electwaryis*. os renell *cruddyth*
 mylk *in-to chese*. & os *sowrdowgh* ys to paste.
Tha take þ^{is} *congelyd mater* *aforseyd* & tak þ^e=
 of .j. pownde & cast it vpon .x. li.¹³ and depart
 thes powndes lyk os 3^e dyd afor þ^e peny wygh- 95
 tys fro on *in-to .x. ffro .x. in-to .C. ffro .C. in-to*
 .M. ffro .M. *in-to .C.M.* and so *in-to infynit* os a-

¹³ li: libra (see explanatory notes)

forseyd. ffor the mor'¹⁴ þ^{is} forseyd ordyr ys re=
 hersyd & traveyld þ^emor' ys <hes> bonyte of perfec-
 cyoun yncrecyd. & myche mor' turnyth & perfy=
 100
 tyht. Tha' tak a cruselet & put þer in .j.
 li or .ij. of þ^e mater afor'seyd & sette 3our crus=
 let in a fayr fyr' of kolys & let yt stond tyl
 þ^e potte be red hot. than blow yerto tyl it be
 molte. and þer all vppe. Amen. 105
 ¶ Now haue 3^e leryd der' frend forto make
 wyght. therfor yt ys nedefwlle & profyta=¹⁵
 for to mak red. But vndyrstandyth y^t no
 man may co[m]'¹⁶ fro þ^e fyrst to þ^e thryd but
 be þ^e secund for but 3e mak trwe wyghte 110

 41v
 rede may 3^e nat mak ffor 3e may nat com¹⁷ fro
 blak to cytryne but be wyght. nor fro wyght
 to red. but be cytrine ffor wan he ys wyght
 cristalyne þ^e rede ys hyd wⁱn hym lyk os
 blode ys hyd in man. Of qwychyche rednes 115

¹⁴ MS: themor'

¹⁵ profyta=: presumably to mean profytable; scribe marks this as continuing to next line but seems to have forgotten the last syllable

¹⁶ MS: con'

¹⁷ MS: conn

per ys none oder drawyng owt but only w^t
 incresyng of þ^e fyre. ffor þ^e fyrst dyges=
 tyoun of þ^e stomak kyndly wyghtyth The
 secund of þ^e lyuer redyth. ffor 3^e know wele
 þt þ^e sperme ys nat gendyrd tyl he be wele 120
 decoct in þ^e lyuer so y^t he haue takyn þer hes
 inwardly rednes. for but he wer' inward=
 ly <rede> þer shuld no thyng gender of hym. Ryth so
 our wyght medycyn. but yf he wer sodyn
 in þ^e fyre he shuld nat be rede. werfore 125
 3^e nede to sethe hym wele in þ^e fyr w^t owt
 dred or puttyng þer to ony thyng tyl he
 be clerr' rede ffor w^t waxyng fyr' aftyr
 wyght comyth rede. Safe betwyn wyght
 & rede cytryne wyl shew hym. þ^e qwyche is 130
 nat stabylle for aftyr hym rednesse dwel-
 lyth nat long. at whos komyng beth se=

42r

kyr 3our werk ys done and þ^e reder' he ys þ^e
 better he ys. for þ^e caws of red ys only fully
 dygestyon'. Than shal 3e tak owt 3our rede 135

medycine & dothe to *hym* in all maner of de=
 gr' lyk os 3^e dyd to þ^e wyght tyl he 3eld
hym to lygth fusyoun os wax. And *compown* þ^e
 rede w^t *mercer* lyk os 3^e dyd to þ^e wyght. & so
procede in-to infynite. Now haue 3e fulfyl=140
 lyd 3our medycine in hot & colde. moyst & drye
 euyn a *tempyr'* & kyndly adeqwat. werfor'
 that y^t 3e put to *hym* of hes owyn kynde
 shal be of þ^e *sam complexioun*. þ^t he ys of And
 thys is þ^e caws þ^t he may be multiplied145
in-to infynite. for he ys os fyr' among wode
 mwske among electwaryse. and os renell
 of mylk ys to chese & os ferment ys to
 paste. And þ^e mor' þ^t he ys *trauelyde* þ^e mor'
 he ys *incresyd*. Now j haue declaryd on150
 to 3^u the praktyse of þ^{is} worthy scyence
 os clerly os god of hes heygh godenese
 hath 3eue me *grace*. j kanne no mor' but he
 þ^t made both 3^u & me bryng vs to þ^e blys of hes
¶ maieste. 155

Explicit.

Explanatory notes

1. 1 *℥* - the symbol probably stands for an *ounce*, although a pound would be expected, in the context. In the Middle Ages a so-called troy system of weights was used. The *ounce* is a unit of weight equal to $\frac{1}{12}$ pound (480 grains) in the troy and apothecaries systems. 12 ounces make a pound
1. 5 *handful*: a small quantity, as much as one can grasp or contain in a hand
1. 5 *spoonful* (spoonful): as much as fills a spoon
1. 35 *vnche* (inch): the unit of measurement of length
1. 44 *þ^e whygt of .j. wete corn*: the weight of one grain of wheat. The troy system derived primarily from a wheat-corn
1. 74 *penny*: a medieval unit of mass in the same troy and apothecary system, equal to 240 grains; 1 penny corresponds to $\frac{1}{240}$ of a pound and $\frac{1}{20}$ of an ounce
1. 91 *rennet* - a substance that forms an acid curd; a watery fluid that leaves semisolid curd, or fresh cheese, made of the abomasum of calf; also a plant substitute for animal rennet used to curdle milk
1. 91 *mwsk* (*musk*) – a substance obtained from the male musk deer. It is used in the highest grades of perfume because of its characteristic odour; it remains for long periods of time and also acts as a fixative. In India, it is regarded as aphrodisiac with stimulant and antispasmodic effects
1. 92 *sowrdowgh* (*sourdough*) – a form of pre-ferment; leaven, fermenting dough
1. 90-92 *ffor he ys os fyr' among wode. os mwsk among electwaryis. os rennet cruddyth mylk in-to chese & os sowrdowgh ys to paste*. This describes the multiplying power of the elixir: a very small amount can transform large quantities.

The combination seems to be from the ‘Golden Tractate of Hermes Trismegistus’, 7th section: *But, through negligence and a false opinion of the matter, the operation may be perverted, as a mass of leaven growing corrupt, or milk turned with rennet for cheese, and musk among aromatics* (viewed at [URL]: <http://www.levity.com/alchemy/goldtrac.html>). However, here the meaning is different from that of the present text, as the simile is used in a negative sense. The same simile, used in the same meaning as in the present text can be also found in Stephano’s *Rosarium Philosophicum* (part 3): *Gold is the ferment of the work without which nothing is done, because it is as the leaven of dough, the curd of milk in cheese and as musk in good sweet things, and with it the composition of the greater Elixir is made, because it doth illustrate and preserve from burning, which is a sign of perfection* (<http://www.levity.com/alchemy/rosary3.html>).

1. 94 *li*: the abbreviation of *libra*, a Latin name for a *pound*: troy and apothecaries’ unit of weight. In medieval England applied to gold and silver and black powder (5,400 grains), equal to 12 ounces

Glossary

The glossary records every form of every word that occurs in the transcription. The words are listed as they stand in the text, in alphabetical order. Where a lexical item occurs in variant spelling and grammatical forms, one form is chosen as a headword and given a full glossary entry, referred to under the variant forms. For each head word, the glossary provides a grammatical label and meaning. The meaning is generally given in single words; occasionally more explanation is given. All the variants are listed under the headword in bold face. The definitions are mainly based on the *Oxford English Dictionary* (OED, online version); in addition *The Middle English Dictionary* (MED, online version) has been consulted.

List of abbreviations:

<i>n.</i>	noun	<i>prep.</i>	preposition
<i>v.</i>	verb	<i>indef.art.</i>	indefinite article
<i>adj.</i>	adjective	<i>gen.</i>	genitive
<i>adv.</i>	adverb	<i>def.art.</i>	definite article
<i>conj.</i>	conjunction	<i>ppl.</i>	participle
<i>vbl.n.</i>	verbal noun	<i>inf.</i>	infinitive
<i>pers.pron.</i>	personal pronoun	<i>pl.</i>	plural
<i>pres.</i>	present	<i>sg.</i>	singular
<i>1</i>	first person	<i>int.</i>	interjection
<i>3</i>	third person	<i>ind.</i>	indicative
<i>masc.</i>	masculine	<i>nom.</i>	nominative
<i>poss.</i>	possessive	<i>acc.</i>	accusative
<i>subj.</i>	subjunctive	<i>dat.</i>	dative
<i>pt.</i>	past tense	<i>pron.</i>	pronoun
<i>comp.</i>	comparison	<i>imp.</i>	imperative
<i>num.</i>	numeral		

A

a, an	<i>indef. art.</i> , a/an
abone	<i>adv.</i> , above; MS also aboue
adeqwat	<i>adj.</i> , equal in magnitude or extent; neither more nor less
afor	<i>prep. and adv.</i> , before
aforseyd	<i>v. past ppl.</i> , mentioned before, above-mentioned; MS also afor'seyd , forseyd
ageyn	<i>adv.</i> , again
al	<i>adj.</i> , all; MS also all
amen	<i>int.</i> , Amen
among	<i>prep.</i> , among
and	<i>conj.</i> , and
asay	<i>v.</i> , check, test, try; <i>pres. pple.</i> , assaying trying
at	<i>prep.</i> , at 3our tong to your tongue
away	<i>adv.</i> , away

B

balauce	<i>n.</i> , balance; an apparatus for weighing
be	<i>v. inf., imp., 3 sg.pres. and pl. subj.</i> , be ; <i>3 sg.pres.ind.</i> , is, ys ; <i>pres.pl.ind.</i> , beth, be ; <i>past subj.sg.</i> , wer, wer' <i>prep.</i> , by
bery	<i>v. inf.</i> , bury
beth	<i>see be</i>
better	<i>adj.</i> , better
betwyn	<i>prep.</i> , between
blak	<i>adj.</i> , black
blaknes	<i>n.</i> , blackness
blode	<i>n.</i> , blood
blow	<i>v.</i> , blow
blys	<i>n.</i> , bliss
body	<i>n.</i> , body; a piece of matter, a substance
bonyte	<i>n.</i> , goodness
both	<i>adj., adv.</i> , both
bryng	<i>v.inf.</i> , bring
but	<i>conj.</i> , except, except that, but

C

came	<i>v., past sg.</i> , came
cast	<i>v.</i> , cast vpon throw upon, add to

caws	<i>n.</i> , cause
chese	<i>n.</i> , cheese
clen	<i>adv.</i> , completely
clene	<i>adj.</i> , clean
clere	<i>adj.</i> , transparent, clear, bright; MS also clerr'
clerly	<i>adv.</i> , completely, clearly
cleuyt	<i>v. 3 sg. pres.ind.</i> , clings, sticks;
cloth	<i>n.</i> , cloth
colde	<i>adj.</i> , cold; one of the four primary qualities
colour	<i>n.</i> , colour; <i>pl.</i> colowrs
colys	<i>n.</i> , coal; MS also kolys
co[m]	<i>v. inf.</i> , come; <i>v. 3 sg. pres.ind.</i> , comyth comes
complexioun	<i>n.</i> , complexion
compowne	<i>v.inf.</i> , compound; to mix elements; also compown
confusion'	<i>n.</i> , interfer
congel	<i>v.inf.</i> , congeal
congelyd	<i>v. past ppl.</i> , congealed; converted into a solid mass
contynwal	<i>adj.</i> , continuous
corn	<i>n. prep. and gen.</i> , corn, grain, seed; MS also acorne
cristalyne	<i>adv.</i> , clear and transparent like crystal
cruddyth	<i>v. 3 sg. pres.ind.</i> , forms (milk) into curd; turns (any liquid) into a soft solid substance like curd
cruselet	<i>n.</i> , crucible; a melting-pot; MS also cruslet
crusyble	<i>n.</i> , crucible; a melting-pot
cytrine	<i>adj.</i> , yellow; MS also cytryne

D

dayes	<i>n.pl.</i> , days
declaryd	<i>v. past ppl.</i> , explained
decoct	<i>v. past ppl.</i> , boiled, heated, perfected by heat
ded	<i>adj.</i> , dead, rendered inactive; MS also dede
degr'	<i>n.</i> , a measure of heat; one of four grades of intensity of a quality; in every degr' in all respects
depart	<i>v. inf.</i> , divide into parts
der'	<i>adj.</i> , dear
dim	<i>n.</i> , abbreviation of <i>dimidium</i> a half
do	<i>v. pres.sg.subj.</i> , and <i>imp.</i> , do
done	<i>adj.</i> , done, finished
dothe	<i>v.pl.ind.</i> , do
drawyng	<i>vbl.n.</i> , drawyng owt extracting
dred	<i>n.</i> , fear, fright, worry

dry	<i>v. imp.</i> , dry; MS also drye <i>adj.</i> , dry
dwelllyth	<i>v. 3 sg. pres.ind.</i> , delays, abides, lingers
dyd	<i>v. pt.ind.</i> , did
dygestyoun,	<i>n.</i> , digestion; change through heating; MS also dygestyon'
dyshe	<i>n.</i> , dish

E

electwaryis	<i>n.pl.</i> , electuaries; a medicinal conserve or paste composed of powders; MS also electwaryse
elixer	<i>n.</i> , elixir, the philosophers' stone, transmuting agent
ellys	<i>adv.</i> , otherwise, else
embyr	<i>n.pl.</i> , embers; the smouldering ashes of a fire
endles	<i>adj.</i> , endless
euermore	<i>adv.</i> , all the time; MS also euermor'
eueryche	<i>adj.</i> , every, each; MS also euerych
euyn	<i>adj.</i> , same, equal; even
explicit	<i>int.</i> , the end; <i>lit.</i> '(here) ends'
eyd	<i>n.</i> , attention, care; take eyd observe
eyr'	<i>n.</i> , air

F

fayr	<i>adj.</i> , bright, good
ferment	<i>n.</i> , a substance that causes fermentation
fferthermor'	<i>adv.</i> , furthermore; MS also fforthemor'
for	<i>conj.</i> , for; MS also ffor
fle	<i>v.inf.</i> , evaporate
fleyng	<i>vbl.n.</i> , flight, evaporating
forneys	<i>n.</i> , furnace; MS also furneys
forseyd	see aforseyd
frend	<i>n.</i> , friend
freshe	<i>adj.</i> , fresh; not salty or bitter
fro	<i>prep.</i> , from; MS also ffro
fulfyllyd	<i>v. past ppl.</i> , completed, fulfilled
fully	<i>adv.</i> , completely, perfectly
furneys	see forneys
fusyoun	<i>n.</i> , melting, fluidity
fyr	<i>n.</i> , fire; MS also fyre, fyr, fyr'
fynd	<i>v. inf.</i> , find
fyrst	<i>adj. and adv.</i> , first; MS also ffyrst

fyryng *vbl.n.*, firing

G

gender *v. inf.*, produce by natural processes, generate (heat); *past ppl.*, **gendyrđ** produced
glas *n.*, glass, a glass vessel
go *v. inf.*, go
gobet *n.*, lump
god *n.*, God
godenese *n.*, goodness
gouern *v. inf.*, work, manage
grace *n.*, grace, favour
grynd *v. imp.*, grind

3

3e *pers. pron.nom.sg. (formal)*, you; MS also **3^e**; *acc./dat.*, **3^u**;
poss., **3our**
3eld *v. inf.*, yield
3eue *v. past ppl.*, given
3our *see 3e*

H

half *adj.*, half
haue *v. inf.*, have; *pres.pl.ind.*, **han**; *3sg. pres.ind.*, **hath**
handful *n.*, handful; linear measurement of four inches
hard *adj.*, hard, solid
he *pers. pron.*, *3rd sing.masc.nom.* he; *poss.*, **hes**; *acc./dat.*, **hym**
het *v. inf.*, heat
heygh *adj.*, high
hold *v. inf.*, hold; *v. 3 sg. pres.ind.*, holdyth
hot *adj.*, hot; MS also **hote**, **hotte**
howres *n.pl.*, hours
hyd *v. past ppl.*, hidden
hym *see he*

I

in	<i>prep. and adv.</i> , in, into
incresyd	<i>adj.</i> , increased; MS also yncresyd
incresyng	<i>v. pres. ppl.</i> , increasing; becoming greater in size, amount
infynyte	<i>n.</i> , infinity; MS also infynit, infynite
in-to	<i>prep.</i> , into
inwardly	<i>adv.</i> , internally
ioyne	<i>v. inf.</i> , unite
is	<i>see</i> be
it	<i>pron.</i> , it

J

j	<i>pers. pron.nom.sg.</i> , I
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K

kanne	<i>v. I pres.sg.</i> , can
kepp	<i>v. inf.</i> , keep
know	<i>v. inf.</i> , know
kolys	<i>see</i> colys
komyng	<i>vbl.n.</i> , coming
kouerd	<i>v. past ppl.</i> , covered
kynd	<i>n.</i> , kind, nature; MS also kynde
kyndly	<i>adv.</i> , in accordance with (one's) nature; naturally

L

leryd	<i>v. past ppl.</i> , learned
les	<i>adj. comp.</i> , less; MS also lesse
lete	<i>v. imp.</i> , let
ley	<i>v.inf.</i> , place; MS also leye ; <i>pres.ppl.</i> , leying
lokyth	<i>v.imp.</i> , look; be sure
long	<i>adv.</i> , long
lye	<i>v. inf.</i> , lie
lyght	<i>adj.</i> , light; MS also lygt, lygth
lyghtly	<i>adj.</i> , easily
lyk	<i>adj.</i> , like; similar; lyk os just as
lymal	<i>n.</i> , metal filings
a lytyl	<i>adv.</i> , a little; a lytyl & a lytyl little by little

lyuer *n.*, liver; MS also **lyuur**

M

made *v. past ppl.*, made
maieste *n.*, majesty
mak *v. inf.*, make; MS also **make**
makyng *vbl.n.*, the process of making
man *n.*, man
maner *n.*, way of doing
many *adj.*, many
mater *n.*, matter, substance; *pl.*, **maters**
may *v. pres.sg.*, can
me *pers. pron. sg. acc./dat.*, me
medycyn *n.*, medicine; MS also **medycine, medycyn**
melt *v. inf.*, melt; liquefy, dissolve
meltyng *vbl.n.*, the action of melting
mercer *n.*, mercury; MS also **mercury, mercwry, mercyur**
metall *n. and adj.*, metall
molte *adj.*, melted
mon' *n.*, the moon
mor' *adv.*, more
moyst *adj.*, moist; MS also **moyst**
multyplye *v. inf.*, multiply
multiplied *adj.*, multiplied; increased in quantity
musk *n.*, musk; MS also **mwske**
mwst *v. pres.sg.*, must
mych *adv.*, much; MS also **myche**
mydyl *adj.*, medium
mylk *n.*, milk
myth *v.*, might

N

nat *adv.*, not
ne *conj.*, nor
nede *n.*, need
nedefwlle *adj.*, necessary
nedyth *v. 3 sg. pres.ind.*, needs
neuer *adv.*, never
neuer^elesse *adv.*, nevertheless

no	<i>adj. and adv.</i> , no
none	<i>adj.</i> , none
nor	<i>conj.</i> , nor
now	<i>adv.</i> , now; at the present time or moment
nowt	<i>adv.</i> , not

O

oder	<i>pron. and adj.</i> , other; MS also odyr ; with <i>def.art.</i> , toder , todyr
ordyr	<i>n.</i> , order
of	<i>prep.</i> , of
on	<i>n.</i> , one <i>prep.</i> , on
only	<i>adv.</i> , only
onythyng	<i>n.</i> , any thing
or	<i>conj.</i> , or
os	<i>adv.</i> , as
our	<i>pron. and adj.</i> , our; or possibly a form of or error for <i>your</i>
owt	<i>adv.</i> , out
owyn	<i>adj.</i> , own

P

part	<i>n.</i> , part; <i>pl.</i> partes
passyht	<i>v.</i> , 3 <i>sg. pres.ind.</i> , disappears
paste	<i>n.</i> , bread dough
pater noster	<i>n.</i> , pater noster, the Lord's Prayer; pater noster whyl , pater noster wyghl the time it takes to say a pater noster
peny	<i>n.</i> , a penny of weight
perfeccyoun	<i>n.</i> , perfection
perfytyht	<i>v.</i> 3 <i>sg. pres.ind.</i> , perfects, makes perfect
philosofyr	<i>n.</i> , philosopher
potte	<i>n.</i> , pot
powder	<i>n.</i> , powder
pownd	<i>n.</i> , pound - a unit of weight equal to 16 ounces; <i>pl.</i> , powndes
praktyse	<i>n.</i> , practice; practical work
procede	<i>v. imp.</i> , proceed, continue
profyta(-)	<i>presumably for</i> profytable <i>adj.</i> , useful
purgyd	<i>adj.</i> , purified
put	<i>v. imp.</i> , put; <i>pres.ppl.</i> , puttyng

pych *n.*, pitch; the liquid state of wood tar

Q

quarter *n.*, quarter; *pl.*, **quarters**
qwan *see* **wha'**
qwyth *adj. and pron.*, which; MS also **qwyche**
qwyksyluer *n.*, quicksilver, the liquid metal mercury; MS also **qwyk-syluer**

R

red *adj.*, red; MS also **rede**; *comp.*, **reder'**
redy *adj.*, ready
redyth *v. 3 sg. pres.ind.*, makes red
rednes *n.*, redness; MS also **rednesse**
rehersyd *v. past ppl.*, repeated, gone through
renyll *n.*, rennet; a substance that curdles milk
ryth *adv.*, right, even, just; **ryth so** in exactly the same way

S

safe *conj.*, except that
salt *n.*, salt
same *adj.*, same; MS also **sam**
sbstawns *see* substawnse
scyence *n.*, science
secund *adj.*, second
sekyr *adj.*, assured, certain
set *v. imp.*, put, place; MS also **sette**
sethe *v. imp.*, boil; *past ppl.*, sodyn
seyk *v. inf.*, seek, look for, try to find
seyth *v. 3 sg. pres.ind.*, says
shal *v.*, shall; MS also **xal**
shape *n.*, shape
shew *v. inf.*, appear, show, be visible; MS also **shewe**, *past ppl.*, **shewyn**;
v. 3 sg. pres.ind., **shewyth**
shuld *v. pt.sg.*, should
shynyng *vbl.n.*, shining
so *adv.*, so

sodeynly	<i>adv.</i> , suddenly, quickly
sodyn	<i>see</i> sethe
son	<i>n.</i> , the sun
sond	<i>n.</i> , sand
sotyl	<i>adj.</i> , thin, fine, finely powdered
sowrdowgh	<i>n.</i> , sour-dough; leaven
space	<i>n.</i> , space (of time)
sperme	<i>n.</i> , sperm
sponful	<i>n.</i> , spoonful
sponge	<i>n.</i> , sponge
spyryt	<i>n.</i> , spirit
stabylle	<i>adj.</i> , stable
stomak	<i>n.</i> , stomach
ston	<i>n.</i> , stone; MS also stone
stond	<i>v. imp.</i> , stand
stop	<i>v. imp.</i> , close up, cover; <i>past ppl.</i> , stoppe
strong	<i>adj.</i> , strong
substawnse	<i>n.</i> , substance; MS also sbstawns
sydes	<i>n.pl.</i> , sides; MS also sydys
sygnis	<i>n.pl.</i> , signs

T

tak	<i>v. inf. and pres.sg.subj.</i> , take; MS also take ; <i>imp.</i> , takyth ; <i>past ppl.</i> , takyn ; takyth no eyd take no heed, do not care
tam	<i>adj.</i> , tame; not wild
tastyng	<i>adj.</i> , tasting
tempyr'	<i>n.</i> , proportionate mixture
tha'	<i>adv. and conj.</i> , then; MS also than , þan , then
that	<i>pron. and conj.</i> , that; MS also þat , þ^t
the	<i>def.art.</i> , the; MS also þ^e
therfor	<i>adv.</i> , therefore; MS also þerfor
therof	<i>adv.</i> , of it; MS also þerof
therto	<i>adv.</i> , therto; MS also þerto
thes	<i>adj. and pron.</i> , these; MS also þes , þ^{es} , Thes
th ^{is}	<i>see</i> thys
thryd	<i>adj.</i> , third
thus	<i>adv.</i> , thus; in such a way
thyknes	<i>n.</i> , thickness
thyng	<i>n.</i> , thing
thys	<i>pron. and adj.</i> , this; MS also þis , þ^{is} , th^{is}
to	<i>prep.</i> , to
toder	<i>see</i> oder

todyr	<i>see</i> oder
to-gedre	<i>adv.</i> , together; MS also togedyr
tong	<i>n.</i> , tongue
trauelle	<i>n.</i> , work, labour
trauelyde	<i>v. past ppl.</i> , worked, performed; MS also traveyld
treen	<i>adj.</i> , wooden, made of wood
trwe	<i>adj.</i> , true
tweyn	<i>num.</i> , two
twrfe	<i>n.</i> , turf
twrn	<i>v. inf., pres.sg.subj.</i> , turn, transform; <i>v. 3 sg. pres.ind.</i> , turnyth
tyl	<i>prep. and conj.</i> , until
tym	<i>n.</i> , time

P

pan	<i>see</i> tha'
pat, p ^t	<i>see</i> that
p ^e	<i>see</i> the
per, p ^{er}	<i>adv.</i> , there
per-by	<i>adv.</i> , thereby
perto	<i>see</i> therto
bis	<i>see</i> thys
p ^{is}	<i>see</i> thys

U

unche	<i>n.</i> , inch; a measure of length
upon	<i>prep.</i> , on, upon; MS also vpon

V

vertue	<i>n.</i> , virtue; power
vessell	<i>n.</i> , vessel; MS also vessel
vnche	<i>n.</i> , ounce; a unit of weight
vnder	<i>prep.</i> , under; MS also undyr
vndurneth	<i>adv.</i> , underneath
vndyrstandyth	<i>v. imp.</i> , understand, know
vppe	<i>v. past ppl.</i> , made known; revealed (?)
vs	<i>pron.</i> , us
vynegre	<i>n.</i> , vinegar

W

wan	<i>see</i> wha'
wasch	<i>v. imp.</i> , wash, cleanse
wast	<i>v. inf.</i> , reduce; <i>past ppl.</i> , wastyd
water	<i>n.</i> , water
wax	<i>n.</i> , wax; MS also wex
waxyng	<i>adj.</i> , increasing
weder	<i>conj.</i> , whether
wel	<i>adv.</i> , well; MS also wele ; lines 12-13 stoppe it wel cover it closely
wen	<i>see</i> wha'
wer	<i>see</i> be
wer'	<i>see</i> be
werfore	<i>adv.</i> , wherefore; MS also werfor'
werfor'	<i>see</i> werfore
werk	<i>n.</i> , work
wet	<i>n.</i> , wheat; MS also wete , whete
wete	<i>v. pres.sg.subj.</i> , know
weyg	<i>v. inf.</i> , weigh
wha'	<i>conj.</i> , when; MS also whaⁿ , wan , wen , qwan
wha ⁿ	<i>see</i> wha'
whos	<i>prep.</i> , whose
whyck	<i>adj. or noun</i> , the 'quick'; the living (one) (?)
whygt	<i>n.</i> , weight; MS also wyght , wygt , wyhgt , whygt ; <i>pl.</i> , wyghtys
whyl	<i>n.</i> , while; a portion of time
w ^h yth	<i>adj.</i> , white; MS also whyht , wyhgt , wyght , wyghte
wode	<i>n.</i> , wood
worthy	<i>adj.</i> , worthy
w ^t	<i>prep.</i> , with
w ^t in	<i>prep.</i> , within
w ^t owt	<i>prep.</i> , without
wyghtyth	<i>v. 3 sg. pres.ind.</i> , makes white
wyl	<i>v. pres.sg. and pl.</i> , will; MS also wyll
wyld	<i>n.</i> , wild
wytnes	<i>n.</i> , whiteness

X

xal *see* **shal**

Y

yf *if*

yncretyd

yrn

ys

yt

see incretyd

n., iron; MS also **yrn**

see **be**

pron., it; MS also **it**

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Appendix: the translation

'The way of obtaining the Grand Elixir'

Take one quarter ounce of the sun and half an ounce of the moon, purified, and make of both of them thin metal filings. Then take an ounce and a half of mercury and put it to the metal filings mentioned before. Then take five or six spoonfuls of vinegar and half a handful of salt and grind all these substances together in a wooden dish, until the sun, the moon and the quicksilver are well mixed together. Then take medium hot water and wash away completely the salt and the vinegar until it is all fresh tasting to your tongue. Then dry the matter with a sponge or with a cloth, and when it is dry, put it into your vessel, as you know how, and cover it closely so that no air goes in or out, which might interfere with your work. Then put it into your furnace, and make a fire under it, as you know how.

These are the signs that will show in your work. First, it will congeal to a solid mass. Then, little by little, it will be reduced to a powder, until all the substance is reduced to a powder, and this powder, under continuous firing, will turn into mercury covered with a blackness similar to wood tar. Just like the blackness came out of the (39v) body, he will go back into the same body, and when the blackness disappears, then the whiteness will appear. Then, you can be assured that your work is done, as far as the white is concerned. For the wild will never be tame except in white. But between black and white many colours will appear. Do not care about these; for black and white are endless colours, as there is no colour

that does not contain a larger or smaller proportion of one of these two. Therefore, when it is white and shining clear, you should deal with it in the following way.

Take your vessel and bury it in your furnace. Cover it with sand, the thickness of an inch, and make fire above it, using a turf or two, as well as beneath in the furnace. Wait for a period of three days until all the quick that clings to the sides will turn to the body where it came from, and all will be of one substance. Then be assured, that if it is shining white, then all the quick is dead, and then all the work is done. To check whether the spirit is dead or not, take one part of the body, the weight of one grain of wheat, and (40r) weigh it. Then take an iron and heat it until it is red hot and let this weight of a grain of wheat lie on it half the time of a pater noster. If it holds its weight then it is done; if it does not, then put it back into the fire until it holds its weight. When it holds its weight, you shall proceed in this way. Take one quarter of the white in the glass, and keep the other three quarters for the red work. Then take this quarter of the white and put it on one scale of a balance. Then take the same amount of the quicksilver and put it on the other scale, so that both sides are of the same weight. Then take one part of the quicksilver and grind with the part of the white stone. Then put the mixture into a glass of this shape , and close it at the top and put it in your furnace, making fire underneath as you know how, and in four hours' time it will turn into the power of the stone. And then, just as you have done with this part, do with the other three parts of the quicksilver, until it can be melted as easily as wax, testing it in this way. Take the stone, the weight of a grain of wheat, and place it on an hot iron and place the same amount of wax next to it. And if the stone melts as (40v) easily as the wax, then it is ready to multiply. For the philosopher says: because

mercury is light of flight it needs a medicine that can quickly bind it before it escapes. For the medicine must melt just as easily as the other one is quick to evaporate; otherwise you will not find what you seek.

To continue further, you must make a compound in this way. Take one penny-weight of the stone and five penny-weights of mercury and put all this into a crucible in the embers of a fire or on burning coals, so that is not too hot. Within less time than the length a pater noster it will turn into the nature of the stone. Always make sure that you have a fire of clean coals, which should never be too strong. Before the melting it is elixir, and after the melting it is metal. Then take one penny-weight away from it and put to the remainder of stone, and the stone is no less for it.

Then take the abovementioned ten penny-weights, and divide it into ten parts and then cast every part upon ten penny-weights of mercury and then you have a hundred. Then divide the abovementioned hundred into ten parts and cast every part to a hundred, and then you have a thousand. Then divide this hundred into ten parts and cast every part to a thousand and (41r) then you have a hundred thousand, and then continue dividing into infinity. For it is like fire among wood, like musk among electuaries, like rennet curdles milk into cheese and like yeast is for bread dough.

Then take this abovementioned congealed matter and take one pound of it and cast it to ten pounds and divide these pounds just like you did before with the penny-weights: from one into ten, from ten into a hundred, from a hundred into a

thousand, from a thousand into a hundred thousand and so into infinity as described before. For the more this aforementioned order is repeated, the more its goodness of perfection is increased, and the more it transforms and perfects. Then take a crucible and put into it one pound or two of the above-mentioned matter, and place your crucible on a good coal fire and let it stand until the pot is red-hot. Then blow upon it until it has melted. And there all is revealed. Amen.

Now you have learned, dear friend, how to make white. Therefore it is necessary and useful to make red. But you must understand that no man can come from the first to the third except via the second. If you do not make true white (41v) you cannot make red. You cannot come from black to yellow except by way of white, nor from white to red except by way of yellow.

For when it is crystal white, the red is hidden within it just like blood is hidden inside a man. The redness will only be extracted when you increase the fire. For the first digestion of the stomach by nature makes white. The second digestion, in the liver, makes red. You know well that the sperm is not produced until it has been heated in the liver, so that it has taken there its inner redness. If it was not inwardly red, nothing would be produced by it. In the same way, our white medicine, unless it was boiled it would not be red. Therefore you need to place it well in the fire, without worrying about it or adding anything, until it is bright red. With increasing fire, after white comes red. Except that, between white and red, yellow will show. This is not stable, because after it, redness will soon appear. When it does, you may be certain (42r) that your work is done, and the redder it is, the better it is. Only a perfect digestion can cause red.

Then you should take out your red medicine and do with it as you did to the white, until it becomes easy to fuse like wax. And then compound the red with mercury just like you did with the white, and continue into infinity. Now you have fulfilled your medicine, in hot and cold, moist and dry, balanced in temper and complete in nature. Therefore, whatever you add to it of its own kind will be of the same complexion of which it is. And this is the cause why it may be multiplied into infinity. For it is like fire among wood, like musk among electuaries, and like rennet curdles milk into cheese and like yeast is for bread dough, and the more its goodness of perfection is increased, the better it is.

Now I have explained to you the practice of this worthy science as clearly as god of his high goodness has given me the grace. I can do no more, but may he that made both you and me bring us to the bliss and joy of his majesty. Explicit.