PALAEOGRAPHICAL ANALYSIS OF LONDON, WELLCOME LIBRARY, MS. 3771

Sinéad Linehan
Universidad de Málaga

In the present paper, the subject of study is the manuscript housed in London, Wellcome Library, MS 3771, containing a late 17th-century English remedy book. According to the Library, MS 3771 was written by Doctor William Parnell and houses a collection of medical recipes in alphabetical distribution by disease. Nevertheless, the volume closes with the mysterious acronym, E. W. The Wellcome Library argues that E. W. is the actual author of the manuscript, instead of Parnell, due to the "probably advanced age" of the doctor. The objective of the present paper is to investigate, analyse and categorise the script employed by the hand of the manuscript, as well as the various hands of the last page and its unbound leaves, to determine the authorship of MS 3771.

Additionally, as is known, the scribes resorted to abbreviations to save time and space. The development of abbreviations in Latin acquired "elaborate and complex proportions", however, the inventory was somewhat reduced over time. Vernacular languages later adopted the Latin system of abbreviations, rules, and signs (Petti 1977, 29). In conjunction with the analysis of the scripts, the present research also pursues the study of abbreviations with miscellaneous sections such as symbols, curtailments, superscript letters, and the other resources employed

by the different scribes together with the analysis of the scribal errors and mistakes.

Keywords: Majuscules, Minuscules, Script, Secretary, Transcription.

1. Introduction

Language is a restrictive and unique form of communication. As it is a trait that belongs in the living world, humans adopted every thinkable surface to 'record the written word' from clay to paper (Clemens and Graham 2007, 3). In the case of the English language, writing started, according to Roberts (2005, 2), during the reign of King Alfred, first using parchment or vellum, originated from animal skin. This material became the dominant writing support of 'medieval and early modern Europe' (Clemens 2007, 9). Nevertheless, before long, in the 14th century, paper began to conquer the parchment's reign (Clemens 2007, 7). During the Renaissance, the revival of "classical literature and learning" produced negligence of the "works of the near past" (Petti 1977, 1). In addition, with the dispersal of the monastic libraries and the increase of the printing press, the circulation of copied manuscripts reduced (Petti 1977, 2). By virtue of these preserved manuscripts, linguists can analyse the language through palaeography. Any palaeographic study of a handwritten artefact pursues the analysis of the following two elements to categorise the text: the script and the date of composition.

In the present paper, the object of study is to classify the script, abbreviations, mistakes, and errors employed in the 17th-century English recipe manuscript housed in London, Wellcome Library, MS. 3771, written by Doctor William Parnell (1685). The Wellcome Library expands that MS. 3771 was presumably composed in 1685, "a date which appears to be consonant with the script, which is certainly of the last quarter of the 17th century". When analysing a manuscript, the date can be of substantial assistance. If the date is uncertain which is the case of MS. 3771, it can be an arduous task to obtain it, as the approximate date of composition of the treatise will be "entirely based on handwriting"

as the "major changes in script and the evolution of letters" can help locate its century (Petti 1977, 1).

In the information given by the Wellcome Library, it is confirmed that the author of the treatise is Dr. William Parnell. "The compiler's name appears to be given on p. 218, where there is the following heading to a list of herbs: 'A briefe Collection of those herbs and plants that purge the head and braine practiced by me this sixty yeares. D. Parnell''. Parnell acknowledges that he has practiced as a doctor for 60 years. The Wellcome Library expands:

> 'In view of Parnell's probably advanced age, it seems unlikely that he was the writer of this MS., but the scribe was possibly the 'E.W.' whose initials are found on the verso of the last leaf.' (Wellcome Library)

Further, the date of the volume is uncertain as aforesaid. However, the Wellcome Library states:

> 'In their Medical Practitioners in the Diocese of London, 1955 Bloom and James give an entry on p. 21 for a 'William Parnell of Endfield, Middlesex', who was licensed to practice medicine in 1622.' (Wellcome Library)

2. Methodology

The analysis is conceived with a twofold objective: a) to examine the authorship of MS. 3771, to ascertain whether Dr. William Parnell is the real author of the treatise, and b) to classify the script, abbreviations, mistakes, and errors. In order to achieve these objectives, an empirical methodology is used to complete the palaeographical analysis of MS. 3771. With the aid of observation and the evidence collected from the volume, it will be sufficient to obtain data to categorize the script by compiling the characteristics that indicate the traits of its period. A transcription of the treatise has been executed to initiate the empirical methodology. Through the instrumentality of the original digitised MS. on the Wellcome Library website, a transcription of the treatise is assembled. The tool used to perform the transcription is a word processor constructed to create critical editions, named the Classical Text Editor program.

MS. 3771 is a collection of medical receipts in English arranged in alphabetical order. The recipes are numbered, and the sequence begins with every letter of the alphabet. It maintains its original unpolished calf binding with the acronyms 'H. W.' gilt-stamped on the sides of the volume. This volume is written on paper, and it demands a title page or preliminary leaf.

The treatise is composed of 120 folios, of which 218 pages are penned. It begins with a four-page segment titled 'The manner of preparing & purging the humours of the body' (Parnell, 1) and continues with the collection of recipes in alphabetical order and ends with a three-page segment denominated 'A briefe Collection of all ye herbs plants seeds spices & gums now vsed in phisicke to purge ye body of man omitting all such herbs & plants as hath any great danger to deale withall' (Parnell, 216). Each page of the treatise shows the alphabetical letter to which it belongs in the upper left corner and the number of the page on the right side. Regarding the layout of the treatise, the lines of the pages vary in quantity as there is no structure. The treatise ends with the word 'Finis'.

After the treatise, the appendix is given as an alphabetical table being 17 pages long. The caption of the Appendix is 'An alphebeticall table shewing both ye number of ye letter & page Where you may find every particular in ye foregoeing' (Parnell, 220). It is then mentioned that the first two leaves of the treatise are 'ye manner of preparing & purging, the humours of ye body & then as followeth'. Thenceforth, the scribe delineates a chart that has 6 columns, the first line of the table indicates the letter and the page, which is written twice, and the second row shows the number, the name of the recipe, and its page. This appendix undoubtedly concludes with 'Finis'.

Just on the other side of the last page of the appendix, another scribe included another recipe to make a sirup of garlic. This piece is rendered in one page and a quarter of the last bounded page of the volume, which is ripped at the right top of the leaf. The treatise was assembled with a flyleaf at the end but through the passing of time, it was written on. The volume is closed by the mysterious acronym, E. W.

There are also three unbounded pages. The first is penned by another scribe, it encloses a recipe for the worms. At the end of the page, there is a three-line fragment written by another penman. The second leaf is authored by the original hand, and it also encompasses treatment for the worms. The third page is rendered by the same hand as the last page of the book.

Macaro, Curle, Pun, An and Dearden's (2018) work conducting a systematic review on the growth of EMI is of help in situating EMI in HE. The evidence from the studies reviewed suggests that EMI implementation may be inevitable in HEI yet that further investigations are required to assert the connections between EMI and linguistic benefits or content learning inhibition.

Research thus far has highlighted EMI sites to be conducive to the development of an intercultural understanding and the broadening of one's mind (Earls 2016), as well as to an increased sense of achievement (Fidan Uçar and Soruç 2018). Interestingly, Ellili-Cherif and Alkhateeb's (2015) study yielded that students recognise the advantages of speaking English, despite them seemingly having a predisposition for L1 Medium of Instruction (L1MOI)–purportedly, due to insufficient language skills in the L2.

Further evidence of the positive role played by EMI comes from Chapple (2015), who concluded that the Japanese students under study commonly equated EMI to language gains. This was attested by Dearden and Macaro (2016), who looked at university teachers' voices from three European countries about teaching their academic subject through English. What they found was a recurring belief that EMI was a potentially propitious setting for students' linguistic development, largely due to a perception that learners are exposed to relevant input and are forced to 'use' and 'think in' English. This finding was later replicated in Moratinos-Johnson, Juan-Garau and Salazar-Noguera (2018), where English-mediated courses also emerged as a major predictor of students' increased linguistic self-confidence.

Nevertheless, students are claimed to be prone to struggle in a setting where disciplinary content instruction occurs through the medium of English as a FL (Macaro et al. 2018). A surge of academic interest in this area points to a correlation between EMI

enrolment and student difficulty in comprehending lectures and materials offered through English (Cho 2012; Cots 2013; Hengsadeekul, Koul and Kaewkuekool 2014; Phuong and Nguyen 2019). Another study by Kirkgöz (2014) follows a similar line: EMI students' voices reflected not only difficulties in understanding English-taught disciplinary knowledge but also a considerably greater demand for effort than in L1MOI-based contexts.

An expanding body of research has also yielded that students hesitate to participate in an English-mediated environment either because of a self-perceived low proficiency–as reported in Dearden and Macaro (2016)–or a fear of being subject to negative evaluation (Hengsadeekul et al. 2014). These results are consistent with those produced at the level of secondary education by Aragão (2011), who emphasises how a low self-image as a speaker of English may be a common anxiety trigger among students because of a fear of becoming their classmates' source of amusement; or by Diert-Boté (2022), whose participants reported feelings of embarrassment in English-speaking environments.

In a similar fashion, however, students' well-documented lack of competence may be extended to EMI practitioners as well, whose English proficiency comes under close scrutiny (Cots 2013). Unsatisfactory competence in English among teachers and students alike is a cause of concern, even if the issue of a lack of benchmark for instructors' required degree of proficiency to teach must also be brought to the fore (Macaro et al. 2018).

The internationalisation of HE (and ergo, EMI implementation) has also been envisaged as generating 'glocal' tensions. Though Pulcini and Campagna (2015) state that the desired promotion of one's own identity may conflict with an aspiration to compete internationally, the evidence in their study shows that the trend among lecturers at the Italian university they examined was not to fear a loss of identity. A similar finding emerged in Sabaté-Dalmau's (2016) study: the *Englishisation* process was not widely perceived as a menace to minority languages in the Catalan HEI under study.

Despite the several contributions of the above studies to our understanding of EMI contexts, their research was mostly aimed at

evaluating beliefs, which may be deeply influenced by a variety of contextual variables. Since further research is needed, this study strives to analyse attitudes about EMI implementation in HE.

3. Method

The manuscript was entirely written by the same hand. As mentioned above, the text was supposedly composed in the late 17th century, more exactly in the year 1685 (Wellcome Library). This date gives us a preliminary idea of the particularities of the script in view of the period. At the time, the script employed by the majority of scribes was a 'mixed hand' consisting of a "gradual fusion of the Secretary and Italic hands" and, depending on the "degree of admixture of Italic", it can be a guide to obtain an approximate date of the manuscript (Denholm-Young 1954, 75).

The Secretary script is an Italian hand which was first introduced into England by French penmen "during the reign of the Francophile, Richard II". The first traces of the Secretary hand were found in "chancery warrants" in the late 14th century when the Anglicana script or "court hand" was at its height (Petti 1977, 14). Roberts (2005, 211) states that the Secretary script expeditiously became "the main business script" as a brisker and agiler script to write, especially if compared with the Anglicana, which explains why it came into more general use. Even though the Anglicana had been the king of calligraphy since its introduction into "England in the 12th century", there was a competition between both scripts which resulted in a mixture of both, thus originating what is known as "hybrid scripts" (Petti 1977, 15). Denholm-Young argues that the Anglicana drastically decreased its use in the early 16th century until its eventual disappearance one century later "abolished by law" (1954, 26). In the 16th century, Petti (1977, 16) mentions that the main concern of the English handwriters was to produce an "acceptable, all-purpose hand combining aesthetic appeal and clarity with smoothness and facility in execution" and this facilitated the spread of the new hand, that is, the combination of the "traditional gothic script", i.e. Secretary, and the "Roman simplicity", i.e. Italic.

The Italic script was first introduced into England in the 15th century by the "form of humanistic works" written by "foreigners abroad" and later imported by those bringing "Florentine manuscripts" (Denholm-Young 1954, 73). During the mid-sixteenth century, "scholars and gentlemen" began to adopt the humanistic cursive, the Italic or Roman script (Roberts 2005, 211). Nevertheless, Denholm-Young states that this script, the "pure humanistic script", was never written in England (1954, 72). The Italic script became the alternative to the secretary script for all purposes. The Secretary script, in turn, became of widespread use from "1525 to 1660" as the current English hand for "everyday purposes", even though in the 17th century it mixed with "italic forms" (Denholm-Young 1954, 71). Notwithstanding that, "the interchange of secretary and italic graphs" is not only exclusive of the 17th century as there are occurrences even in the early 16th century (Petti 1977, 18).

During the reign of Queen Elizabeth, it became fashionable among the nobility to write in more than one hand and, for instance, Queen Elizabeth herself was capable of writing in different hands (Denholm-Young 1954, 74). According to Petti, the nobility used the italic script in "their own correspondence hand" although their secretaries employed the "traditional secretary" script (1977, 19). In addition to this, the aristocracy began to sign with their names in Italic script throughout the middle of the 16th century (Petti 1977, 19). Following the royalty, the gentry and rising middle class began learning and employing the Italic hand in their writings (Petti 1977, 19). This led penmen to write "in most literary manuscripts" with "a division of labour whereby italic would be employed for Latin, and secretary for the vernacular" (Petti 1977, 19). The quarrel "between the native secretary hand and the foreign italic" can be traced back to the 17th century and the combination of these two scripts became commonplace since the Elizabethan period (Denholm-Young 1954, 74).

This led writing-masters to teach different styles of calligraphy but, more importantly, this could not prevent the inevitable end of the two scripts. At the beginning both hands, when taught, possessed a distinct grip of the pen, which separated one from each other, producing "that the styles so long remained

distinct" (Denholm-Young 1954, 75). This fusion of the distinct hands produced that "the secretary hand came to be written with the same hold of the pen as the italic" (Denholm-Young 1954, 75). By the third quarter of the 17th century, the English witnessed the extinction of the secretary "as a literary hand" (Petti 1977, 20), which eventually resulted in the impossibility to classify any literary or business hands other than "mixed hands" (Denholm-Young 1954, 76).

In light of all this, the hands of the witness can be classified as a mixed hand consisting of a combination of Secretary and Italic scripts. When it comes to the main hand of the manuscript, it presents a more widespread use of the Secretary than the Italic. The Secretary hand is an angular script with thick and thin strokes which can appear broken and with horns placed in the "heads or sides" of the letters (Petti 1977, 14). The main characteristics of the Secretary script are the "single-compartment <a>", "the <e> with a bow" along with the two-stroke or reversed e, the letter <g> "with its head closed by a separate line" (Roberts 2005, 211), the stroke of the letter <p> written as an x (Denholm-Young 1954, 71), the twin-stemmed <r>, like a ''v'-shaped r", the "tight kidney-shaped" <s> in final position, "the three strokes of w" and the single stroke <x> (Roberts 2005, 211).

In contrast, the Humanistic script is a round cursive script with long vertical lines and uniformed "slope and ties between the letters" (Denholm-Young 1954, 73). The characteristic letterforms of the humanistic script are the "vertical, half-uncial d", the "two-lobe g", the letter <h> not going "below the baseline", the vowel <i> without "stroke or dot", the letter <r> in the "Carolingian form", the straight <s> "in all positions" and "round <s>" in the final position, and the letter <u> only in the "round form" and not as the letter <v> (Denholm-Young 1954, 71).

3.1. Hand A

It is important to note that the first "mixed hands" were essentially Secretary including some italic forms, such as the majuscules and the "minuscules f, r, long and short s prominent" together with the letters "e, h and c" (Petti 1977, 14). The scribe of the text (Hand A)

is prone to render an italic appearance, with an inclined calligraphy, each word written with the same stroke and in some instances the penman wrote two words together without separating the pen from the paper. Nevertheless, its content is approximate to the Secretary script.

The majuscules are mainly written in Italic script, and they do not present much ornamentation. Nevertheless, in headings, at the beginning of the alphabetical section or in a new paragraph, they are rendered as Secretary letterforms. In several instances, the scribe indicates that the letter is a majuscule by writing a superscript humanistic <e>. With the letter <f>, the humanistic <e> is on top of <ff> standing for the 'capital F'; it also appears without the 'e' (Tannenbaum 1930, 38).

As far as minuscules are concerned, the inventory of letters rendered with a Secretary hand are the following: the <a> whose body is composed of "a small oval (o)" with a small tail coming from the right side (Tannenbaum 1930, 27). The double lobbed <b> starts at the linear level with a long oval stroke returning to the beginning of the stroke, and closes with an oval in the initial line. The "right-angled" letter <c> is a vertical line with a "short perpendicular line" (Petti 1977, 14). The <d> is a double looped minuscule which can be confused with the letter <e> as the penman wrote it smaller, similar to a linear letter. The "reversed" <e> appears quite frequently in the treatise. The "tight" <g> is double lobbed (Robert 2005, 211). Nevertheless, the scribe may not close the infralinear loop of the letter <g>. The letter <h> has a "supralinear vertical loop" followed by a semioval ending with an infralinear curved tail. It also coexists with <h> whose supralinear loop disappeared into a "mere bow" forming an h with little or no body (Tannenbaum 1930, 47). <k> and <p> are of the Secretary script with the looped head. The <r> has two different forms, the "twin-stemmed r" being the preferred form in the treatise and the "2-form of r" (Tannenbaum 1930, 67). The letter <w> is similar to the present day <w> as the Secretary's single-stroke letter looks like an <n> linked to a <u> (Figure 1).
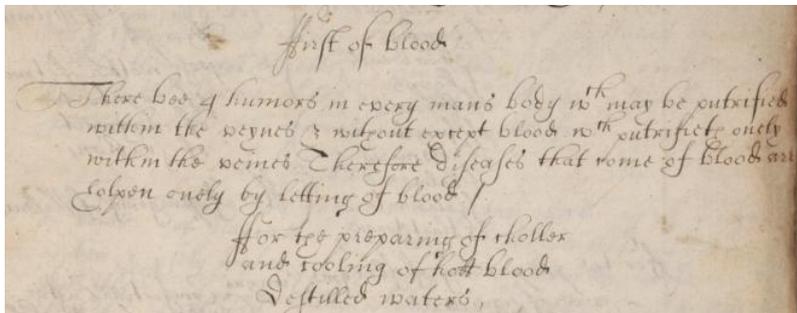
Fig. 1. Extract from MS. 3771[1] (page 1)

Regarding the Italic letterforms, the letter <s> has three types of <s>, the italic long <s> "looped and unlooped", when two <s> are together, the first letter is a long <s> that links with to a straight <s>, characteristic of the humanistic script (Petti 1977, 18). And finally, the <s> in the final position being a "round s" (Derolez 2006, 63). The letter <t> is a single stroke with a horizontal line in the middle which is also rendered as a "short introductory ascender and linking loop from base" (Petti 1977, 20). As mentioned, the italic or humanistic <e> appears as a superscript letter indicating when a letter is a majuscule. Even though the "reversed <e>" is the dominant <e>, it coexists with the "epsilon" or "Greek e", a "perpendicular stem, and the three horizontal bars" (Tannenbaum 1930, 38).

Concerning the letter <x>, the scribe differentiates the single-stroke secretary <x> and the two-stroke italic <x>, using the Secretary <x> for the expression of the cardinal number and other English words while the humanistic <x> predominates in headings and Latin words. However, as the treatise progresses, the humanistic

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[1] All of the images included in this article are part of the digitalized MS.3771 provided by the Wellcome Library. Credit: Parnell, William. Wellcome Collection. Public Domain Mark.

\<x\> becomes negligible and the secretary \<x\> progressively gains a more significant role.
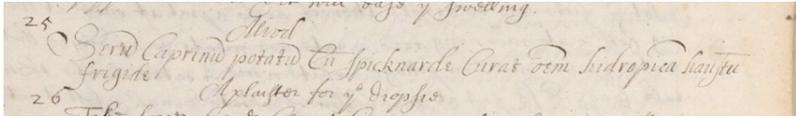
Fig. 2. \<Secu*m* Caprinid potatu*m*\> (page 80)

Figure 2 shows how the author of MS. 3771. differentiates the Latin from the Vernacular. The Latin section is written in Italic script including a wide range of Italic letterforms whilst the Vernacular appears with more letters that are part of the Secretary script.

As mentioned in the introduction, the Wellcome Library states that the authorship of MS. 3771 is not of Dr. William Parnell due to his seniority and that it was probably written by a fellow bearing the initials E.W., which are found in the cover and written also by Hand A. Additionally, the Wellcome Library concludes that the date of composition might be 1685 as Bloom and James confirm there was a man with the name 'William Parnell' in Endfield, Middlesex', who obtained its licence in 1622 (1935, 21). In the treatise itself there is a confirmation that William Parnell has been practicing this medicine for 60 years, 'Medicines for the Angina struma or King's evill and all glandulous and hard swellings in the neck, throate or elsewhere, being all well approved in my practice this 60 yeares' (Parnell, 135). However, when looking into the definition of 'practice', we can conclude that there is more than one possibility to understand the sentence penned in the treatise.

The word 'practice' derives from the Old French form 'pratiser, practiser', in Medieval Latin 'practicare' (Online Etymology Dictionary). The Oxford English Dictionary [hereafter OED] provides an extensive overview on the multiple definitions the word 'practice', the first definition provided by the dictionary is the following: 'The carrying out or exercise of a profession, esp. that of medicine or law. Also, as a count noun: the business or premises of a doctor or lawyer.'. Then this sentence can be understood with two different meanings, a) William Parnell has been a doctor for 60 years using this medicine or b) the establishment where he worked as a doctor had been using this recipe for 60 years.

If the meaning of practice was referring to Parnell's profession, it is improbable that the authorship would be of William Parnell as Cummins assets 'in England and Wales, the average age at death of noble adults increased from 48 for those born 800–1400, to 54 for 1400–1650, and then 56 for 1650–1800.' (2017, 407). Meaning this that if Parnell were the author of this treatise, he would be around 80 years of age and then the date of composition would be near the date given by the Wellcome Library (1685). This would be unlikely considering the advanced age of Dr Parnell. Nevertheless, when considering the second definition of practice, 'business or premises of a doctor', we can confirm that the style of script does enclose characteristics of early 17th century. Even though the date of the composition given by the Wellcome Library is around 1685, the text points towards the use of the Secretary script with sporadic tinges of the Italic hand. In addition, the author uses a more Italic script when writing in Latin, differentiating the vernacular (Secretary) from the Latin (Italic), see Figures 1 and 2. As mentioned above, Petti, along other authors, develops there were only mixed scripts for literary hands towards the end of the late 17th century, which asserts that the authorship of MS. 3771 might be of Dr. Parnell as the script was similar to the script used in the early 17th century where the scribes differentiated the vernacular from Latin. Nevertheless, even though it is a 'mixed hand', it has a higher preference for the Secretary. In light of this, there are then grounds to state that the author of the treatise might be Dr. William Parnell, as the influence of the Italic hand is negligible.

Regarding the E.W. mentioned in the Introduction, these letters are written in the last page of the volume by Hand A. The Wellcome Library considers them to be the mysterious writer of MS. 3771, as these letters can be seen as the acronyms of a name which of course are unknown. However due to the forementioned we can contemplate the possibility that the 'W' in 'E.W'. could be <William> and that the 'E' could be the first name of William Parnell. The answer to this question is unknown but it is a matter that will continue to be studied throughout my research.

3.2.   Hand 1, Hand 2, and Hand 3

Apart from Hand A, Hand 1 is used to render the last folio, written with a mixed hand with a preference for the italic script, having barely or no influence of the Secretary script (Figure 3). It was reproduced in haste and much attention is not paid to minims and the way the letters are displayed, with the form of the letter <n>. That explains why some letters can be confused with others, such as the letter <e> or <s> which are written as a vertical line like <i>. Further, this scribe does not use diacritics in combination with the letter <i>, making the reading of the minims intricate which is one of the characteristics of the Humanistic script (Derolez 2006, 178).

Majuscules are written in an Italic script, such as B, E, L, K, R and T. The minuscule <a> is confused with the vowel <u>. Apart from this, it shows the rounded <c>, the tall wide-looped <d> and the humanistic <e>. Uncrossed <f> can also be mistaken for a long <s>. Nevertheless, there is only one instance of the long <s>, while the italic straight <s> predominates in the text. This fragment does not have any trace of the secretary <h>, only the vertical italic <h>. The scribe writes the letter <k> as an <h>, the <r> of the Carolingian form, and the letter <t> is written in an italic style with a single stroke which curves into the cross also appearing omitted. The letter <g> as <q> has a circular head unclosed just as the letter <y>.

Additionally, three interviews with two undergraduates and one lecturer were conducted. To ensure anonymity, they will be concealed through pseudonyms. At the time of conducting the interviews, both female undergraduates, Catalan/Spanish bilinguals, studied at UdL: Ona, a 20-year-old, is an Engineering student; Paloma, a 19-year-old, is a Preschool Education student. Martina, the faculty member, is a middle-aged female who works as a part-time adjunct professor in the Department of Private Law at UdL.
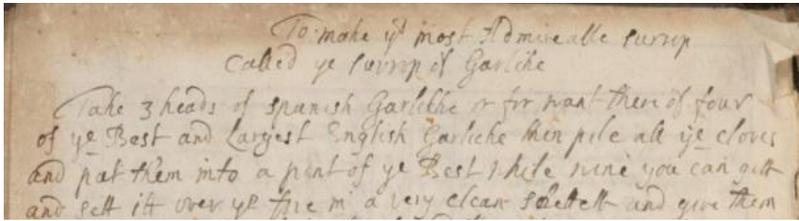
Fig. 3. Hand 1 (flyleaf)

Hand 2 is a mixed hand that has the Humanistic characteristic of writing uniformly and including the 'ties between the letters', which are not visible in some words as the scribe must have loosened the pressure of the pen (Denholm-Young 1954, 73). Regarding the letters employed by the scribe, it is clear that it adopts more letters from the secretary script than from the Italic script (Figure 4). The aesthetic of the fragment is characteristic of the Italic script, nevertheless the letters are similar to the Secretary script.
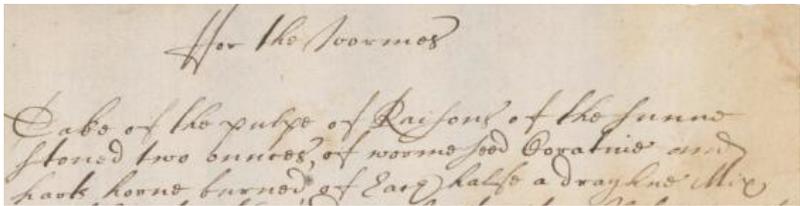
Fig. 4. Hand 2 (unbound sheet)

The majuscules, in turn, are written in both Secretary and Italic forms. The letters C and T are nearly indistinguishable from the secretary form. The T is a semicircle that goes beyond the line and has a horizontal and vertical stroke across its body. In the case of the C, the beginning of the semicircle is enclosed by the end, and it only has a horizontal line. Likewise, the letters R and S are also rendered in their Secretary forms, both decorated with circular strokes or horizontal lines. However, the letters E, M, N, and L are written in the Italic hand, lacking the ornamental loops.

In the case of minuscules, this text presents some Secretary letterforms, such as the single compartment <a>, the right-angled <c>, the employment of the reversed secretary <e>, lacking the

presence of any humanistic <e>, along with the secretary <k> with the circular strokes in the middle of the letter, the secretary <x>, formed with a single stroke creating a circle in the line of the text and the letter <w> rendered as an <n+v> (Petti 1977, 14).

The Italic characters are the tall wide-looped <d>, the long looped or unlooped <s>, also including the humanistic straight <s>, and the looped <t> appearing crossed and uncrossed (Petti 1977, 20). This fragment also presents the letter <h> as a mixture of both scripts, the italic <h>, with no tail below the linear position, and the secretary <h>, with a tail and no body.

Hand 3 is similar to Hand A, however, it is a more angular script even though it is essentially cursive (Figure 5). It shows all its majuscules, A, B and M written in Italic. As for the minuscules, the scribe uses a few Secretary characteristics such as the looped long <s> and the double looped <b>. The italic influence is found in the round <c>, the humanistic <e>, the tailless <h>, the linear <p> without a loop at its head, the round <s> –although the long <s> appears–, the <r> of the Carolingian form and the single stroke looped and crossed <t>. These lines also contain the Greek <e>.
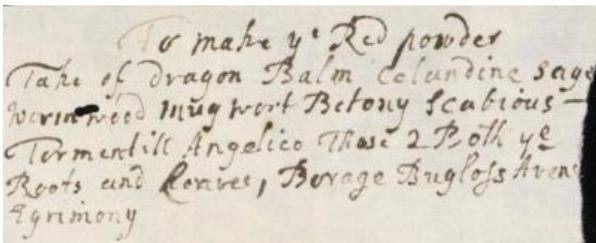
Fig. 5. Hand 3 (unbound sheet)

4. Abbreviations

Scribes benefited from abbreviations in order to save time and gain space. The development of abbreviations in Latin acquired "elaborate and complex proportions, requiring of the reader considerable skill in cryptography and linguistics" (Petti 1977, 22). Because of its complexity at the time, the inventory was somewhat reduced over time. Vernacular languages adopted the Latin system

of abbreviations, rules and signs. By the Renaissance, the English language downsized the repertoire of abbreviations to a fair proportion, being less common in formal documents (Petti 1977, 22). Petti portrays the traditional classification of abbreviations into "contraction, curtailment (or suspension), brevigraphs (special signs) and superior (superscript) letters" (1977, 22).

This section shows the most frequent abbreviations employed by the scribes. The section will mainly focus on Hand A as it is the hand of the treatise. It is crucial to bear in mind that the scribe often includes ornamental strokes that might be confused with abbreviations. Nevertheless, Parnell only shows this in the word <oximell> having a vertical curved line between the two <ll> placed for aesthetic purposes (Figure 6).
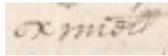
Fig. 6: <oximell> (page 116)

In addition, the scribe uses both the Tironian symbol and the ampersand (see Figures 7, 8 and 9). The only instance in which Parnell uses the ampersand is in the heading of the first leaf of the volume. From then onwards, there are just presentations of two variants of the Tironian note.

Fig. 7: <preparing & purging> (page 1)

Fig. 8: <preparing & purging> (page 2)
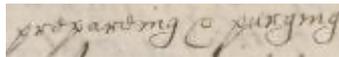
Fig. 9: <preparing & purging> (page 2)

The Tironian note also appears as the Latin word <et> (Figure 10), but is linked with the right-angle <c> finishing with a horn, representing <et cetera> (Hector 1966, 35).

Fig. 10: <et cetera> (page 4)

Contraction is taken to indicate the omission of a letter or clusters from the middle of the word (Roberts 2005, 10). According to Petti, this type of abbreviation was the "commonest method" and "the number of words omitted depended on the frequency of the word and how obvious it was in context" (1977, 22). Even though, the scribe has no variety of contractions, there is one form which is persistent throughout the text. Parnell uses a curved vertical line above the middle of the word to indicate the omission of the letter <i> in words containing the -ion suffix (see Figure 12 and 13). This graph can also appear with smaller horizontal lines crossing the middle of the vertical line. In some instances, the scribe also omits the letter <t>, as in <decoction> in Figure 11.

Fig. 11: <decoction> (page 15)
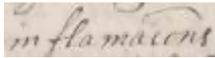
Fig. 12: <inflamacions> (page 147)
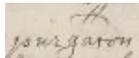
Fig. 13: <purgacion> (page 63)

Curtailment or suspension refers to the omission of a letter or cluster at the end of a word (Roberts 2005, 10). Parnell mostly uses the enlargement of the last minim of the word to indicate the omission of the letter <m>, it can also appear as a vertical stroke on the top of the last syllable of the word. This type of curtailment usually appears in Latin words (see Figures 14-17):
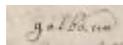
Fig. 14: <galbanum> (page 111)
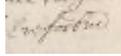
Fig. 15: <Eveforbium> (page 106)
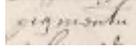
Fig. 16: <pigmentum> (page 111)
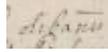
Fig. 17: <olibanum> (page 72)

Figure 18 shows the letter <g> with a horn from its head, indicating the omission of the letter <o>.
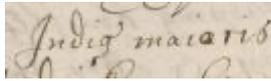
Fig. 18: <Indigo maioris> (page 4)

However, with the word Iterum (Figure 19), standing for 'again' or 'a second time', the long tail of the letter <m> indicates the omission of the cluster <eru> (Martin 1910, 71).
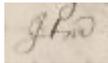
Fig. 19: <Iterum> (page 11)

When indicating measurement, the obolus, standing for 'one sixth' (Figures 20 and 21), is shown as <ob> or <obo> with a vertical line across <b> indicating the omission of the final cluster <lus> (Cappelli 1990, 246).

Fig. 20: <obolus> (page 5)
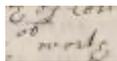
Fig. 21: <obolus> (page 137)

A brevigraph is a unique sign indicating the omission of a syllable or two letters (Petti 1977, 23). In the treatise, brevighraps are mostly used with Latin words. In Figure 22, the symbol coming from the vertical line of the letter <q> appears like an anagolous number 3. It indicates the omission of the cluster <us>, just as the small <g> at the end of the following word <generibus>.
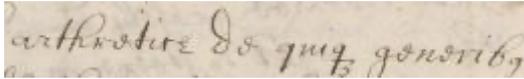
Fig. 22: <arthretice de quiqus generibus> (page 4)

The following brevigraph is laid-out with a semicircle above the letter <i>; nevertheless, the Latin word which this brevigraph stands for is <Christus> (Figure 23).
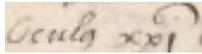
Fig. 23: <oculus christus> (page 89)

In addition, the semicircle is place in one English word, but in this case, it represents the word <grains> (Figure 24).
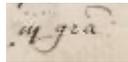
Fig. 24: <grains> (page 138)

The crossed <p> indicates the contraction of the clusters <re>, <er>, <ar> or <or> depending on the word. It is usually rendered with the secretary <p>, forming a single stroke with a circular head and the tail crossing itself, creating another circle in the infralinear section (Figure 25, 26 and 28). Notwithstanding, it can also appear with the straight italic <p>, having a vertical line crossing its tail (see Figure 27).
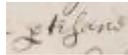
Fig. 25: <pertisane> (page 38)
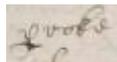
Fig. 26: <provoke> (page 15)
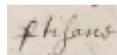
Fig. 27: <pertisane> (page 38)

Fig. 28: <part> (page 117)

As this treatise is a compilation of medical recipes, the scribe was bound to display measurements which essentially appear in their abbreviated form. The abbreviation for a pound or libra is lb, which is still in current use in present-day English (Capelli 1990, 410). The scribe represents it with the letters l and b written with the same stroke and ending with a circular line crossing both letters which can be seen in Figure 29.

Fig. 29: <lb> (page 7)

In Figure 30, the scribe uses the long <s> and an eight as the abbreviation for 'in summa/somma' signifying 'in addition' (Cappelli 1990, 189).

Fig. 30: <in summa> (page 10)

To represent uncia 'a twelfth part', the scribe renders in Figure 31 a lengthy 3 maintaining its size through the infralinear section with angular lines and ending with a curved tail (Cappelli 1990, 410).
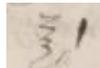
Fig. 31: <uncia i> (page 44)

Parnell draws an abbreviated measurement (see Figure 32) which is identical to number 3 (Cappelli 1990, 407), 'drachma' which stands for "one sixteenth of an ounce" (Sinclair 2023).
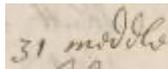
Fig. 32: <drachma i meddle> (page 72)

For a 'handful', the penman uses the letter <m> (Figure 33), the abbreviation for 'manipulus' or 'manipuli' (Cappelli 1990, 218).

Fig. 33: <manipuli i > (page 12)

In the case of 'half' the penman employed the abbreviation <d> for 'dimidium' (Cappelli 1990, 86), see Figure 34:

Fig. 34: <dimidium i> (page 13)

Superior (or superscript) letters are a form of contraction where the word has a raised letter indicating the omission of the preceding letter or cluster (Petti 1977, 24). There are also measurements such as <quarter> (Figure 36), Latin words <que> and English nouns <fundament> and <ointment> (Figure 37).
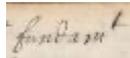

Fig. 35: <your> (page 9)

Fig. 36: <quarts> (page 116)

Fig. 37: <fundament> (page 121)

In the case of Hand 1, the scribe uses the superscript letters, yt <that>, yn <then>, and Bettr <better>. Hand 2 does not present any abbreviation except for the contraction <pinte> 'pint'. The scribe previously writes the word unabbreviated and indicates with a crossed t, omitting the letters <in>. Hand 3, in turn, only presents the superscript letter ys <this>.

5.   Errors and mistakes

The errors made by the scribes essentially derived from lousy usage of sight, lethargy, memory loss, and unconsciousness. Petti groups the errors of the penmen into four sections: omission, additions, transposition, and alteration (1977, 30). This section is divided into mistakes and errors. An error is generally defined as 'deviation from truth, accuracy, correctness' (Sinclair 2023). Mistake is taken as an error derived from 'carelessness, inattention, misunderstanding' (Sinclair 2023).

The commonest mistakes are omissions, both of a letter and cluster, as in the following cases (Petti 1977, 29), see the following Figures:
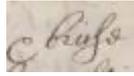

Fig. 38: <bruise> (page 25)
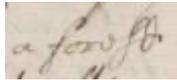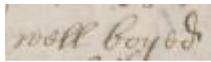

Fig. 39: <a foresaid> (page 133)

Fig. 40: <boyled> (page 7)

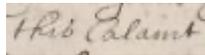The scribe renders words with wrong spelling as a result of carelessness:
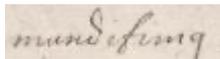

Fig. 41: <Calaint> Calamint (page 90)

Fig. 42: <mundifimg> mundifing (page 9)

Other mistakes are the result of transposition, in which letters, words, or even phrases are displayed in a reversed order. "In the case of reserved pairs of letters, the process is known as metathesis" (Petti 1977, 30). However, this treatise does not present any instance of metathesis (Figures 43 and 44).
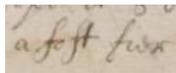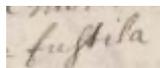

Fig. 43: <fost> soft (page 7)

Fig. 44: <fustila> fistula (page 105)

The treatise also entails some instances of 'additions', which are the automatic reiteration of syllables or words (Figure 45). The motivation for this error is, as stated, the tricks of sight, memory, or an 'error of dittography' (Petti 1977, 30). In this volume, there is only one instance that appears at the end of a line and at the beginning of the following line.
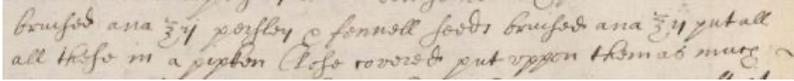

Fig. 45: <all> (page 82)

It was frequent at the time that scribes committed themselves to the corrections made during the act of writing (Petti 1977, 29). MS. 3771 is not an exception. The amendments of these shortcomings involve "deletion, alteration, and insertion". There were several methods of deletion, but cancelation and dissolution are the recurrent devices in the witness.

Cancelation consists in the omission of the unnecessary material with the use of "one or more straight lines"; it also appears as spirals or with a "criss-cross pattern" (Petti 1977, 29). Petti explains this is the 'commonest method of deletion in renaissance manuscripts' and it is also the case of MS. 3771 (1977, 29), which can be observed in the following figures:

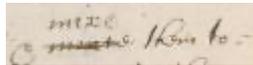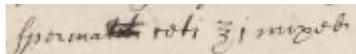Fig. 46: <& mixe> (page 10)

Fig. 47: <sperma ceti> (page 165)

Fig. 48: <safforne> (page 185)

There is only one instance of dissolution, which consists in 'sponging the ink of the deleted passage until it completely dissolved' (Petti 1977, 29). Nevertheless, the letter the scribe tries

to erase is still clearly visible, due to the type of ink used (Figure 49).

Fig. 49: <g> (page 71)

Alteration: the erroneous letters of a word are corrected by superscribing the rectified letters over them (Petti 1977, 29), see Figures 50 and 51.
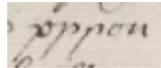

Fig. 50: <or> (page 53)

Fig. 51: <vppon> (page 58)

Insertion, in turn, consist in the insertion of the corrected segment or word in the supralinear section indicating its placement with a caret which can be seen in Figures 52 and 53 (Petti 1977, 29).
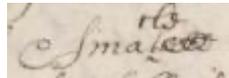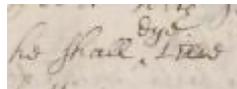

Fig. 52: <& smacle> (page 92)

Fig. 53: <he shall dye> (page 92)

6. Concluding notes

Through the aid of the palaeographical analysis of MS. 3771, it can be determined that the date of composition might not be of the last quarter of the 17th century (1685) but of the first half of the 17th

century. This brief examination of MS. 3771 considers that Dr William Parnell's might be the author of this volume since the script presents characteristics belonging to the early 17th century and additionally the acronym E.W. could be referring to 'William'. As examined in the analysis, Hand A is a mixed hand (a combination of the Secretary script and the Italic script); nevertheless, depending on the degree of Italic, it can lead us to locate MS. 3771 in its approximate date of composition which in this case is early 17th century. Hand A displays visually a humanistic handwriting, but the content includes mostly Secretary letterforms with sporadic tinges of the Italic. Additionally, the scribe differentiates between the passages in Latin and English using an Italic script in Latin excerpts and Secretary script with the vernacular. This is a characteristic belonging to the 16th century where scribes altered their script depending on the language. This asserts that MS. 3771 might be written by Dr. Parnell as the script has characteristics of the early 17th century where mixed hands mainly contained Secretary letterforms.

This paper also shows that the remaining hands are all 'mixed hands'. Nevertheless, some hands present a lesser influence of the Italic script than others, these being Hand A and Hand 2. In contrast, Hand 1 and Hand 3 have a combination of both scripts. Concerning abbreviations, Hand A presents contractions, curtailments, brevigraphs, and superscript letters. Although, Hand 1, Hand 2 and Hand 3 do not present an extensive use of abbreviations due to their brevity; Hand 1 presents superscript letters, Hand 2 entails the contraction of <pinte>, and Hand 3 presents the superscript letter <ys>. Lastly, the errors and mistakes shown in the study establish how Parnell emends its errors by using the standard methods, such as deletion, alteration, and insertion.

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