



Recording medical recipes: Surgeons and barbers in early modern Italy (c. 1450–1600)

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Abstract

The early modern period witnessed a notable rise in publications dedicated to learned surgery, yet manuscript evidence of surgeons' day-to-day practice remains scarce. The five manuscripts examined here offer fresh insight into the practice-based activities of Italian surgeons between roughly 1450 and 1600, highlighting an understudied aspect of their work: the recording of recipes and use of medications. After discussing the practical functions and tentative categorization of these surgical manuscripts, the essay explores the centrality of recipe collection as both a tool of practice and a medium for medical theory. It also analyses the types, forms, and purposes of remedies recorded, the epistemic domains they reflect, and their connections to contemporary pharmaceutical literature. Finally, the manuscripts' linguistic features reveal important clues about the sociocultural status of surgical practitioners. What emerges from the analysis is the centrality of pharmaceutical knowledge in surgical expertise and a variegated picture of early modern surgical practice, shedding light on actual knowledge-in-use across a diverse range of practitioners.

Keywords

surgeons, recipe collections, Italian manuscripts

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Recording recipes is an integral feature of early modern vernacular medical practice, and recipe collections represent by far the most prevalent type of manuscript medical sources. Yet this material has long been kept, as it were, in the “dungeons” of Italian libraries and archives, bespattered with “mould and dust” – to use Poggio Bracciolini’s outraged words in describing the pitiful state of the Quintilian manuscript he discovered in Saint Gall.¹ Only with the recent material and practice-oriented turn in the history of science have these documents begun to come to the limelight as windows to the tangible realities of healthcare practices in early modern Europe.² While progress has been made in mapping some of these collections, notably outside Italy,³ scholars continue to be daunted by their unwieldy profusion, wide dispersal, and frequent palaeographic impenetrability. As with other practical or artisanal manuals, handbooks, or *zibaldoni* discussed in this special issue,⁴ the absence of clear generic labels to encompass these medical manuscript sources has further complicated efforts at cataloguing or inventorying them.⁵ As a result, such materials are often misclassified, displaced, or simply absent from archival records. Two additional complications arise. Most of these sources are anonymous and/or undated, which prevents social historians of medicine from making precise, contextualized observations about situated medical practice. Only patience and chance occasionally yield epiphanic discoveries, such as the one below (Fig. 1):

¹ “plenum tamen situ, et pulvere squalentem ... in teterrimo quodam et obscuro carcere.” Poggio Bracciolini, letter to Guarino Guarini (d. 1417). Poggi, *Epistolae*, 29.

² Interest in medieval and early modern recipe-books has increased significantly in the last decades, but a comprehensive understanding of the recipe-book genre is still warranted. On this limited understanding, see Crisciani, “Ricette e medicina: tre zibaldoni nel Quattrocento,” 11–12; Cifuentes, “El receptari mèdic,” 105–107; Lacanale, “Le ricette per gli occhi nel ms. 1408 della Biblioteca Statale di Lucca,” 287–309, (esp. 287–288).

³ The most substantial corpus-based research to date has been conducted on British materials. For an overview, see Leong and Rankin, *Secrets and Knowledge in Medicine and Science*, and the essays in Leong and Rankin, “Testing Drugs and Trying Cures.” For recent works on women’s central role in early modern health, see Strocchia, “Introduction: Women and Healthcare in Early Modern Europe,” and Rankin, *Panacea’s Daughters*. See also Leong, *Recipes and Everyday Knowledge*. However, Italian collections have yet to receive comparable systematic attention. For a bibliography on edited Italian *ricettari*, see Crisciani, “Ricette e medicina: tre zibaldoni nel Quattrocento,” 26–28, and Lemme, “Ricettari medici: il caso del ms. 215 della Biblioteca Classense di Ravenna,” 125–137, (esp. 127–128).

⁴ On this written technical literature, circulating in manuscript and print since the late fifteenth century, see Smith, *From Lived Experience to the Written Word*, esp. 91–116. See also Long, *Artisan/Practitioners and the Rise of the New Sciences, 1400–1600*, and Morel, *Underground Mathematics*.

⁵ In Italian archives and libraries, the catch-all label used is “ricettario” or “segreti” without distinguishing epistemic category (technical, alchemical, medical, etc.) or any other typological or generic criteria.

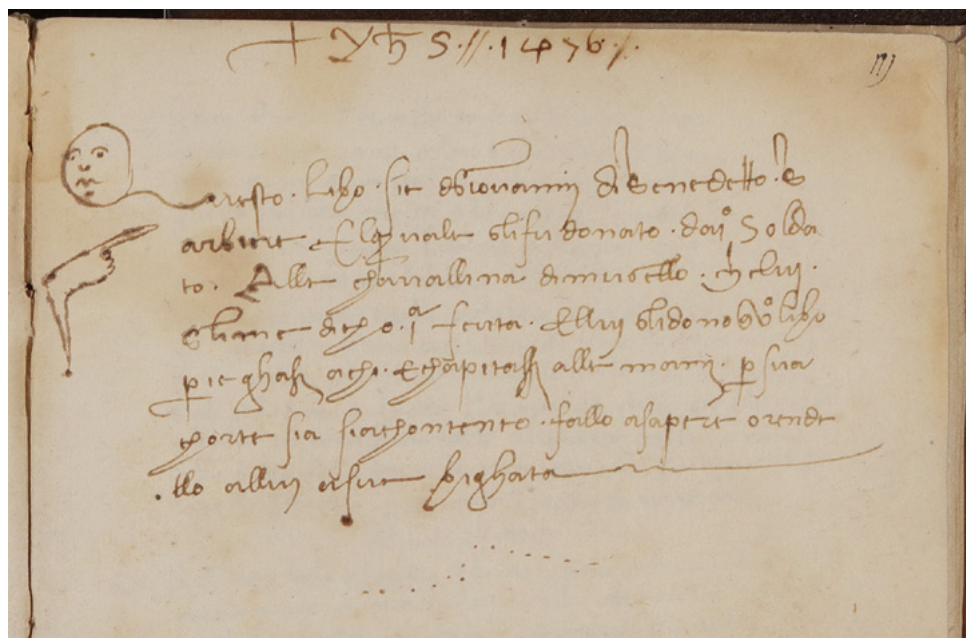


Fig. 1 – BNCF, Magliabechiano XV 76, flyleaf indicating ownership and date. Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

Questo libro fu di Giovanni di Benedetto barbiere el quale gli fu donato da un soldato alla chavalina di Mugello, che lui gli medicò una ferita [...]⁶

(This book belonged to Giovanni di Benedetto, a barber, to whom it was given by a soldier at the Cavalina of Mugello, whose wound he treated.)

The possession note in what has otherwise been catalogued as an anonymous manuscript is a promising finding: it shows that this collection was kept and presumably used by a rural barber in the Mugello region outside Florence.⁷

⁶ Biblioteca Nazionale Centrale di Firenze (hereafter BNCF), Magliabechiano (hereafter Mag.) XV 76 (flyleaf).

⁷ The possession note in mercantesca script appears after the initial folio (which bears only the inscription “ricettario” and “anon.”), making it likely that the identity of the owner should go unnoticed. The catalogue likewise indexes the manuscript as “ANON., *Diverse ricette di medicamenti et Segreti Alchimici, Cosmetici, superstiziosi etc.* ac. A. 1468” (Targioni Tozzetti, *Catalogo generale*, vol. 5, 116).

Findings such as this are rare, but not altogether exceptional.⁸ This chapter examines this and four other sixteenth-century vernacular handbooks authored or owned by surgeons and barbers, exploring how recipes and cures were recorded and how these texts functioned as operational artifacts in early modern medical practice, particularly in treatment and medication. Surgeons represented a broad category of practitioners who operated within, outside, or on the margins of guild structures in early modern Italy. Specializing in external conditions such as sores, wounds, fractures, and dislocations, and the treatment of specific ailments, their work was integral to healthcare provision. While more attention has been granted to surgery in the last years, concrete evidence of surgeons' day-to-day practices remains profoundly scarce.

The documents presented here, in this preliminary analysis, resist being subsumed under a coherent genre or typology but are nonetheless invaluable as evidence of surgeons' situated practice. For lack of a better category, I refer to them as surgeons' books or notebooks, although each represents a *unicum* in terms of its pragmatic, functional, and discursive features. This variety reflects, as I will argue, the heterogeneity and fluidity of the category of "surgeon" in early modern Italy – not only in terms of professional credentials and knowledge-in-use, but also of training and social standing. Despite their diversity, the recording of medical recipes is a common denominator across all the manuscripts, whether as full, self-contained collections or as hasty marginal notes. This points to the centrality of medication within surgeons' diversified range of practices and raises questions about the articulation and adaptation of medical theory and practice.

Early modern surgery and surgeons' writings

Viewed as the third instrument of medicine, alongside diet and medication, as Tomaso Garzoni explains in his *Piazza Universale*, surgery required the use of the hand ("col mezzo della mano") on the body.⁹ In early modern Italy, however, the title of surgeon encompassed "very different kinds of practitioners," including barbers, bonesetters, empirics, specialist operators, and academically trained physicians, as Paolo Savoia notes in the case of Bologna.¹⁰ This diversity reflects the broader configuration of the field. As Sharon Strocchia observes, surgery "spanned a wide array of people, practices, and institutions,"

⁸ Stolberg has discussed a handful of cases drawn from his research in forty archives across Austria, Germany, and Switzerland (Stolberg, "Surgical Training and Practice"), as well as the Bohemian physician Georg Handsch's notes (Stolberg, "Empiricism in Sixteenth-Century Medical Practice.") Examples of casebooks in British collections have likewise been examined; see, for instance, Beier, "Seventeenth-Century English Surgery," and Kassell, "Casebooks in Early Modern England." For Italy, the only study of which I am currently aware is Strocchia, "Notes from the Front."

⁹ Garzoni, *Piazza Universale*, f. 50r.

¹⁰ Savoia, "Skills, Knowledge, and Status," 27–54 (esp. 33).

ranging from university-educated practitioners to barbers, bathhouse attendants, and specialists treating conditions such as hernias, fractures, or cataracts.¹¹ While apprenticeship remained a central mode of training, the later sixteenth century saw increasing competition for professional standing between empirically trained practitioners and those seeking advancement through academic medicine.¹²

At the same time, the boundary between surgery and learned medicine remained fluid.¹³ As Kristy W. Bowers remarks, “the boundary of physic and surgery was indeed a moving target.”¹⁴ Historians have therefore cautioned against treating the two as rigidly separate domains, especially in the sixteenth century. In the Venetian context, for example, Richard Palmer showed in a pioneering study that “the divisions between physicians and surgeons have been exaggerated,” emphasizing instead “the close connexion between the two branches of the profession in daily medical practice.”¹⁵ Recent studies have highlighted interactions and tensions between surgeons and “anatomists, physicians, and natural philosophers.”¹⁶ Surgery was both a craft transmitted through apprenticeship and part of the broader tradition of learned medicine, requiring theoretical knowledge alongside practical skill.¹⁷ Meanwhile barbers continued to provide primary care in urban and rural settings,¹⁸ and itinerant specialists – *cursores* or *restauratores* – performed major operations such as cataract couching or hernia repair,¹⁹ often populating the ranks of so-called “char-

¹¹ Strocchia, “Notes from the Front,” 10.

¹² On the early academic teaching of medicine in Italian universities, see Siraisi, *Medieval and Early Renaissance Medicine*, 153–158; and McVaugh, *The Rational Surgery of the Middle Ages*. On the image of the learned surgeon in early modern Italy, see Savoia, “Skills, Knowledge, and Status,” 33–35. For the complex relationship between barbers and surgeons, extending to actual terms used to describe them, see Decamp, *Civic and Medical Worlds in Early Modern England*, 7–19.

¹³ On the sixteenth-century Italian *Protomedicati* and Colleges of Physicians and their (only partially successful) attempts to enforce a threefold partition of the medical professions – graduate physicians, apothecaries, and barber-surgeons, see Savoia, “Skills, Knowledge, and Status,” 31, and Gentilcore, “All That Pertains to Medicine,” 121–142 (esp. 123–127). On *matricolati* surgeons in Florence, see Cipolla, *Public Health and the Medical Profession*, 70–73.

¹⁴ Bowers, *Renaissance Surgeons*, 1.

¹⁵ Palmer, “Pharmacy in the Republic of Venice,” 460. On the relationships between physicians and surgeons, see Cavallo, *Artisans of the Body*, esp. 16–18. For the multiple career paths for surgeons, see Bartolini, “On the Borders: Surgeons and Their Activities in the Venetian State (1540–1640),” 83–100.

¹⁶ Bertoloni Meli and Klestinec, “Renaissance Surgery,” 4.

¹⁷ McVaugh, “When Universities First Encountered Surgery,” 19.

¹⁸ See Garzoni, *Piazza Universale*, (“De’ Barbieri” Discorso CXL, ff. 369r–370r), who lists among the barber’s tasks “la politezza del corpo,” “cavar sangue a gli amalati,” “mettergli le ventose,” “medicarle le ferite,” “far le stoppate,” “cavare i denti guasti et simile altre cose” (f. 369v); on “malicious” barbers, see also f. 262v.

¹⁹ Bertoloni Meli and Klestinec, “Renaissance Surgery,” 3.

latans,”²⁰ a phenomenon that illustrates the wide range of contexts in which surgical expertise circulated.²¹ The sixteenth century witnessed great mobility of surgical practitioners across technical and scholarly domains, as well as guild-regulated and informal settings.²²

The early modern period also saw a marked increase in publications devoted to learned surgery, including well-known medieval Latin manuals, vernacular translations, and new practical texts, many of which reached print.²³ However, manuscript records documenting surgeons’ actual practice remain remarkably scant.²⁴ The five manuscripts presented here shed new light on the practice-based dimension of a range of early modern Italian surgeons, illuminating a largely unexplored aspect of their profession: the record of recipes and medication.²⁵ As will be discussed below, these manuscripts do not easily fit into a single, coherent category. Some bear a loose resemblance to the late sixteenth- and seventeenth-century “casebooks” examined by Kassell – broadly defined as “serial records of practice,”²⁶ modeled on “practices of keeping diaries, commonplaces and observations, testimonials, or administrative registers”²⁷ – as well as to the late-Renaissance genre of *ob-*

²⁰ See Gentilcore, (*Medical Charlatanism*, 98) who notes that in Florence’s Guild of Physicians, Apothecaries, and Grocers, physicians, surgeons, barbers, apothecaries, and charlatans were registered alongside painters, comic actors, ballad-singers, mask-makers, booksellers, chapmen, perfumers, haberdashers, and numerous other groups.

²¹ Bertoloni Meli and Klestinec, “Renaissance Surgery,” 2.

²² See Garzoni’s jarring remark on this phenomenon: “Non è vero, ch’essi talvolta da puri barbieri diventano dottori in Chirurgia?” (Garzoni, *Piazza Universale*, 70v).

²³ Traditional medieval surgical authors whose works were circulated and translated into the vernacular include Guy de Chauliac, Bruno da Longobucco, Guglielmo da Saliceto, Pietro d’Argellata, alongside sixteenth-century authors such as Berengario da Carpi, Giovanni de Vigo, Jean Tagault, Leonardo Fioravanti, and the Venetian surgeon Giovanni Andrea della Croce (1515–1575), who published Latin and vernacular texts. For these and other references, see Klestinec, “Translating Learned Surgery,” 36–39; McVaugh, “When Universities First Encountered Surgery,” 16–19; and Castiglioni, *A History of Medicine*, 470–484, for a full list of famous Renaissance surgeons and main publications.

²⁴ Cf. Strocchia, “Notes from the Front,” 3, who notes that “numerous casebooks kept by early modern physicians have come to light, but comparable sources penned by empirical surgeons remain few and far between.” Also, Stolberg, “Surgical Training and Practice,” 77, writes “first-person accounts by surgeons or their patients, practice journals, casebooks, patient lists, and similar sources...are hard to find”; Cavallo, “Learning to Dress Wounds,” 84, calls them “unfortunately a rare source.”

²⁵ As this essay was under review, the excellent volume *Learning to Cut*, edited by Donato, Leong, and Taape, has appeared. I warmly thank Sandra Cavallo for sharing a draft of her essay and for our discussion on the striking convergence of our conclusions, reached independently and simultaneously on different archival materials.

²⁶ See Kassell, “Casebooks in Early Modern England,” 600; Jalobeanu, “The Toolbox of the Early Modern Natural Historian.”

²⁷ Kassell, “Casebooks in Early Modern England,” 615.

servationes studied by Gianna Pomata.²⁸ However, unlike published or publishable “case-books” and *observationes* largely authored by physicians, the five manuscripts analyzed here attest to the *private* empirical and cognitive practices of a *broad spectrum* of surgeons, not limited to elite learned ones, and represent unvarnished, straightforward records of practice.²⁹ More precisely, some of them closely align with the long-standing traditions of recipe collections, *segreti*, and technical know-how literature, though not all fully conform to this genre either.³⁰ What unites them, however, is the centrality of recorded cures, which constitutes the key focus of this chapter.

In what follows, I address (1) the pragmatic functions of the individual manuscripts and the typologies of medical literature to which they can be assigned; (2) the recording of recipes as a central feature of surgical handbooks and a site for articulating medical theory and practice; (3) the types, modalities, and functions of recorded remedies, the key epistemic domains they represent, and their relationship to mainstream pharmaceutical literature; and (4) the linguistic features of the surveyed manuscripts as evidence of the broader sociocultural positioning of surgical practitioners.

Surgeon’s manuscripts: notebooks, handbooks, and recipe-collections

The selected manuscripts may be regarded as notebooks, handbooks, and/or recipe collections, depending on their most salient individual characteristics – although no single label applies to all of them.³¹ Two important features, however, bring them together: first, they were all authored, owned, or annotated by a practicing Italian surgeon; and second, they all contain medical recipes to varying degrees. Some of them even include precise

²⁸ See Pomata, “Sharing Cases,” 193–236 (esp. 194–199).

²⁹ See similar observations in Strocchia, “Notes from the Front,” 8, in reference to Nardi’s case-book, also included in this corpus.

³⁰ The recipe is a form of writing with ancient roots, commonly found in artisanal, alchemical, and medical texts. For a classification of medieval medical recipes, see Hunt, *Popular Medicine*, 16, updated by Zarra, *Il “Thesaurus pauperum” pisano*, 4–5. For a review of this genre, see Cifuentes, “El receptari mèdic baixmedieval i renaixentista,” 103–160, and Leong, *Recipes and Everyday Knowledge*. Gianna Pomata has proposed that late medieval and early modern recipes constitute an “epistemic genre,” a literary form that both embodies and shapes a “cognitive project” (Pomata, “Sharing Cases,” esp. 196–197). On the relationship between recipes and cases as epistemic genres, see Pomata, “The Recipe and the Case,” 131–154. On secrets literature and the rhetoric of secrecy in craftsmanship, see Eamon, *Science and the Secrets of Nature*, 16, and id., “How to Read a Book of Secrets,” 23–46; Smith, “What Is a Secret?,” 47–66, and id., *From Lived Experience to the Written Word*, 118–120.

³¹ On the complex typological or generic categorization of these texts spanning various dichotomies, theoretical/practical, pure/applied, mind/hand, learned and artisanal, see Roberts and Schaffer, *The Mindful Hand*, xiii–xv (“Preface”).

dates of composition or circulation; some provide the exact name of its author or holder. The latter is extremely rare, especially within the broader context of largely undated and unattributed medical collections in Italian libraries and archives.

The first manuscript, in approximate chronological order, is the one introduced by the possession note that opened this chapter: Magliabechiano XV 76 (hereafter Man. A). It is a late fifteenth-century collection of recipes owned by “Giovanni di Benedetto, barbiere,” who, as stated on the flyleaf, received it from a soldier whom he had treated for a wound.³² The collection consists primarily of herbal remedies, but also recipes containing animal products and minerals, as well as a number of alchemical recipes, incantations, and charms.

The second text, Palatino 1068 (hereafter Man. B) is a miscellaneous mid-sixteenth century manual of surgery and medicine, compiled for professional use and regularly updated.³³ Although it bears no identifiable name, the manuscript was unmistakably owned and annotated by a learned surgeon. It contains an apparently original core,³⁴ alongside material derived from contemporary authors. Later additions include marginal notes and medical recipes – some written in the vernacular – dated 1516.³⁵ The main text, largely in Latin, focuses on wounds, injuries, ulcers, and fistulas. After a general introduction, the work presents about seventeen unnumbered articles on surgical theory and practice. Early sections reflect influence from Pietro d’Argelata’s *Chirurgia*, first published in Venice in 1480. This original core sections concludes with appendices of practical notes and citations of late medieval surgical authorities. The rest of the manuscript includes snippets from Pietro d’Argelata’s *Chirurgia*, especially on the treatment of wounds, fractures, contusions, and skin diseases, accompanied by numerous recipes.³⁶ The rest of the manuscript transcribes sections from Michele Savonarola’s *Practica Maior* and Nicolò Falcucci’s *Elementi di Chirurgia*.³⁷

The third manuscript, Wellcome MS 174 (hereafter Man. C), is a surgeon’s handbook produced near Verona and consisting largely of medicinal recipes. The cover bears a pen-drawn coat of arms belonging to the author. Inside, an inscription records: “Questo libro sie di M^o Gasparo barbiro e ceroicho...,” identifying the writer as Gasparo, son of Maestro Antonio, from Legnago, and noting that the book was written on 15 August 1529. The manuscript contains numerous recipes, descriptions of diseases and treatments, and is illustrated with small marginal pen drawings of diseased organs and surgical instruments. Folios

³² BNCF, Mag. XV 76. The original composition date is 1468 (at f. 39v); the later 1476 date appears on the flyleaf.

³³ For a fuller codicological description, see Rambaldi and Saitta Revignas, *I manoscritti Palatini*, Vol. III. Fasc. 1, 73–76.

³⁴ BNCF, Palatino (hereafter Pal.) 1068, ff. 2–47v.

³⁵ The date 18 May 1516 appears after the incipit of a recipe “Aqua bona et oleum pro vulneribus et ulceribus.” BNCF, Pal. 1068, f. 50v.

³⁶ Ibid. ff. 53r–142r.

³⁷ Ibid. ff. 145r–172v and ff. 208r–219v respectively.

24v–32 include a Latin–Italian list of plant names. Family notes are also recorded: the birth and baptism of the author’s son, Zuan Antonio (1530, Verona), appear on the final leaf, while the inside cover mentions the birth of a daughter, Chatalina, on 14 November 1527.

The fourth manuscript, Magliabechiano XV 19 (hereafter Man. D), is a sloppy and difficult-to-read personal notebook belonging to a barber-surgeon from Montelupo, “Maestro Daniello di Biagio di Becossi,” as recorded on the flyleaf and dated 1576.³⁸ As archival records show, Becossi had been granted a license by the Florentine College of Physicians on 21 July 1571 to perform basic operations pertaining to a barber-surgeon.³⁹ Unlike the other manuscripts, this is a distinctly private notepad, containing an unsystematic profusion of annotations of all kinds. These include repeated notes on family matters, rudimentary genealogical sketches, transcriptions of contracts, *ricordi*, personal affairs, and miscellaneous jottings, all interspersed with medical recipes and brief therapeutic observations.

The fifth manuscript, Magliabechiano XV 142 (hereafter Man. E), belonged to Giovanni Battista Jacopo Nardi da Montepulciano, a surgeon at the Hospital of San Giovanni, known as “di Bonifazio,” in Florence.⁴⁰ Begun in 1582, the manuscript records personal observations, clinical cases drawn from Nardi’s practice in the hospital’s *medicheria*, and a wide range of medicinal recipes. It also includes various “secrets,” such as metallurgical procedures and instructions for the fabrication of military equipment. This manuscript has recently been studied by Sharon Strocchia, whose insightful analysis informs much of the discussion of this text.⁴¹

As this cursory review of the corpus suggests, these manuscripts resist classification within a single, clearly defined category. They fulfilled multiple functions, and each case presents its own specific configuration. Medical theory (*magisterium*) and practice (*ministerium*) are articulated in different ways across the manuscripts; overall, however, the practical dimension tends to prevail over the theoretical. Amid such functional and formal diversity, one shared feature stands out: all these manuscripts, to a greater or lesser extent, record medical recipes, with a notable predominance of prescriptions for external cures. While the recording of recipes constitutes a defining characteristic, these manuscripts also

³⁸ The word “montelupo” is inserted in the interlineal space between the third and fourth line on the flyleaf, but also reappears on folio 13v in what seems to be the transcription of a letter addressed to Cosimo I “serenissimo granduca” in 1568.

³⁹ Biblioteca Biomedica dell’Università degli Studi di Firenze. Registro del Collegio Medico A, f. 62r, dated 21 July 1571. The licence expressly notes the limited scope of surgical activities authorized to the candidate by the examining physicians: “mettere chane,” “cavare denti,” “trarre sangue con licentia del fisicho,” and “medicare ferite semplice.” On these examination procedures, see Ciuti, “Il Collegio dei fisici e l’Arte dei medici e speziali di Firenze,” 3–28 (esp. 22–23) and Baldanzi, “Regolamentazione tra professionisti medici e speziali,” 163–170 (esp. 164).

⁴⁰ On Nardi’s career, see Strocchia’s detailed account, “Notes from the Front,” 4–7.

⁴¹ Strocchia, “Notes from the Front,” 19–21. The author deals summarily with recipes in a final section.

serve a range of additional purposes, again to varying degrees. These include functioning as personal memoranda or *ricordanze*, sometimes indicating the place of professional activity as well as recording family or private matters (such as births and genealogies);⁴² documenting the date of composition or the provenance of the compilation, particularly in cases of inheritance or gift; preserving evidence of medical practice, for instance in the form of casebooks that register patients, symptoms, diagnoses, treatments, and outcomes; and transmitting medical and surgical knowledge through treatises or excerpts from learned sources. Finally, as will be explored below, these manuscripts also provide a platform for recording practical or “how-to” knowledge beyond what is typically regarded as “medical” (in our modern understanding). This includes, for example, the properties of herbs, elements of astrological and alchemical learning, and descriptions of distillation apparatuses – thus fulfilling a function closely aligned with that of *secreti* literature.

A wealth of recipes: format, typology, and scope of medical knowledge

Whereas recipes appear in all five manuscripts, the organizational criteria, distribution, and spatial arrangement vary significantly across the corpus. This diversity can be explained partly by the overlapping functional purposes described above. Manuscript A is the only one that can be straightforwardly described as a traditional “ricettario,” consisting exclusively of recipes for a wide range of medical conditions, not limited to surgical or external treatments. Sequentially recording recipes without a discernible pattern – whether by remedy-type, part of the body, disease or intended effect –,⁴³ the collection lacks any specificity. The fact that it was owned by a barber-surgeon may point to the broad range of competences expected of a rural practitioner who, in the absence of a physician, may have been called upon to offer general primary care.

Manuscript C, although primarily a collection of recipes, is more extensive and incorporates a wider variety of material. In order to enhance readability and facilitate consultation, it employs a number of paratextual devices, such as alphabetical tables and clearly marked recipe titles (“Tavola da trovare le infrascritte recete,” “Questi sono certi simplici et erbe,” “A trovare le recete del secondo libro”).⁴⁴ (Fig. 2) This not only suggests a high-level of literacy on the part of its compiler, but also reflects the influence of humanist

⁴² Most notably, Manuscript D, but also Nardi’s casebook (manuscript E) includes some personal *ricordanze* regarding purchases (ff. 78v–179r) and Manuscript C includes on the verso of the last leaf a note of the birth and baptism, in 1530 at Verona, of the author’s son “Zuan Antonio.” In the inscription inside the upper cover, the birth of a daughter “Chatalina” on 14 November 1527 is also mentioned.

⁴³ On the main organization criteria for pharmaceutical literature and recording of remedies, see Basile, “Recording Remedies,” 117–118.

⁴⁴ Wellcome MS 174, ff. 1r, 58, and 80, respectively.

educational practices and reading habits, which were rapidly disseminated through the advent of print.⁴⁵ Similarly, these features signal the manuscript as a consultation manual, both a repository of pharmaceutical knowledge and a *vade mecum* for therapeutic practice. A comparable strategy is adopted by Nardi in Manuscript E, where the contents are signposted at the end of the volume (“Tavola di tutto quello si contiene nel presente libro cominciando prima delle cure che verranno nello spedale”)⁴⁶ – which a later hand expanded with new entries recording recipes added to the original compilation.⁴⁷ (Fig. 3) Unlike Manuscript C, however, Nardi’s book has a more miscellaneous and impromptu character, often alternating patient records, recipes, and other medical material. In turn, the Veronese surgeon’s collection, bound in vellum with leather ties, exhibits the features of a more carefully structured compilation – one intended for sustained consultation and possibly for transmission as a kind of professional “testament” to subsequent generations (as the gifted Manuscript A). Whether in the form of a closed, final collection as Manuscript C or as an open notebook receptive to ongoing additions (Nardi’s book),⁴⁸ both manuscripts serve as practical manuals for surgeons, with a special focus on medication.

Manuscript D, in turn, records recipes in a seemingly random manner, often filling blank spaces between personal annotations – such as property deeds, records of payments, transcriptions of letters, and *ricordi* spanning several generations (Fig. 4). These recipes take the form of hasty, synoptic *aide-mémoires*, typically listing only a few ingredients without measurements or procedures. They appear without any evident organizational logic and only occasionally coalesce into more defined sections (e.g. “virtù di più olii”).⁴⁹ Manuscript B also fills up blank spaces with Latin recipes in a rather cursory way, but in most cases the latter serve as a form of an offhand “commentary” to the Latin surgical literature transcribed, often to complement the information in the body of the text.⁵⁰ (Fig. 5)

⁴⁵ See Basile, “Recording Remedies,” 113–144. On the rise of the index in the humanist milieu, see Enenkel and Nellen, *Neo-Latin Commentaries and the Management of Knowledge*, 54–57; and Blair, *Too Much to Know*, 144–152. For a discussion of the proliferation of tables and alphabetical indexes with printing, see Blair and Patton, “A Quantitative Study of the Paratexts in Erasmus-Froben Imprints,” 99–181, esp. 101–102.

⁴⁶ BNCF, Mag. XV 142, f. 172r and ff. 174r–175r.

⁴⁷ *Ibid.*, ff. 175r–178r.

⁴⁸ On this distinction, see Basile, “Recording Remedies,” 121, with bibliographical references.

⁴⁹ BNCF, Mag XV 19: “virtu di piu olii” (ff. 4v–5r); “unguento di cerusa,” “unguento rosato” (f. 7v), “al mal di poppe” (f. 9r); “per rompere un ferro in 2 ore” (f. 10v), “unguento da rogne” (f. 11r); “al mal caduto” (f. 12r); “cura del cancro,” “alla milza,” “per disicare le lacrime” (f. 21r).

⁵⁰ In various sections marginal commentaries are flagged with the phrase “Nota quod” (e.g., ff. 11r, 15v, 17v, 34r–v, etc.); various medical authorities are cited throughout: Galen (e.g., ff. 12r, 15r, 16v, 35r, etc.) Rasis (f. 48v), Montagnana (f. 41r), Dino del Garbo (f. 16r), alongside contemporary physicians, like Nicolus Florentis (f. 35v, 63v), Agustinus de Urbino (f. 49r), Bartolomeus de pisteria cirurgicus (f. 49r), Nicolaus Bastarius delporta (f. 76v), etc. While most

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Tavela darrouaze le infza faire recete

Prima afa aqua da feride	achaz	.i.
Cezero p la rista	achaz	.i.
Cezero chapirali	achaz	.i.
Afaldaze una piaga	achaz	.2.
Al mal de uermi	achaz	.2. 3. 8. 11. 22. 41.
Aguarize le fudole et le uer	achaz	.2. 1. 8. 10. 20.
Al mal de fmitza	achaz	.2. 7. 11. 39.
A delie et mal frangoso	achaz	.2. 4. 12. 50. 61. 62.
Al mal de la preda	achaz	.2.
Ali duroni et le uer	achaz	.2.
Al mal de la fenza zin	achaz	.2.
A una delia	achaz	.2.
Ala rioma	achaz	.2.
A delie do corpo	achaz	.2.
Afaldaze una piaga	achaz	.2. 29. 3. 63. 65. 67. 8. 14. 16. 41. i.
Al mal de corpo	achaz	.2.
Aguarize le fudole	achaz	.2.
Al mal dela cholicha	achaz	.3.
Adi auele mazgo chole unuoso	achaz	.3.
Adi auele la febre uazaria	achaz	.3. 5. 39. 42. 4.
Al mal deli odoi	achaz	.3. 7. 11. 40. 47. 75.
Al mal de ueruij	achaz	.3. 44.
Al mal deli ueruij	achaz	.3.
Al mal dela preda	achaz	.3.

Fig. 2 – Wellcome Library, MS 174, no folio number. Beginning of the table of contents. Courtesy of the Wellcome Library.

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Tavola di tutto quello si contiene nel presente libro cominciando
 da prima delle cure & uerranno nello spedale
 Impresa adi 28 di Maggio 1582

una cancrena nel codrone car i	Donne
in finoni _____ car i	Sommi di
fonte quattri una nella destra del	
otto laterale prepolacomm. Hum	car i Sono
et una dal altra banda	
una nella colidola	
et l'altra alla fronte della	
parte destra _____ car i	Sono
una cancrena ouer creste nel prepurio	car i Sono
una cancrena nella borsa et nel	
membr _____ car i	Sono
due priumi _____ car i	Sono
una fenta nel filo delle reni _____ car i	Sono
una rottura di gotta _____ car i	Donne
de taroli _____ car i	Sono
doke di mel francese alla natura	car i Donne
doke galliche alla poppe _____ car i	Donne
belke coeste _____ car i	Sono cinque
duar emipita _____ car i	
del medesimo id & poffessione	
della flegma emipitatorica _____ car i	Sono
aero d'empella flegmonica _____ car i	Sono
et una ipa fredda nella gla _____ car i	Donne

Fig. 3 – BNCF, Magliabechiano XV 142, f. 172r. Folio containing the beginning of the table of contents with corresponding page numbers. Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

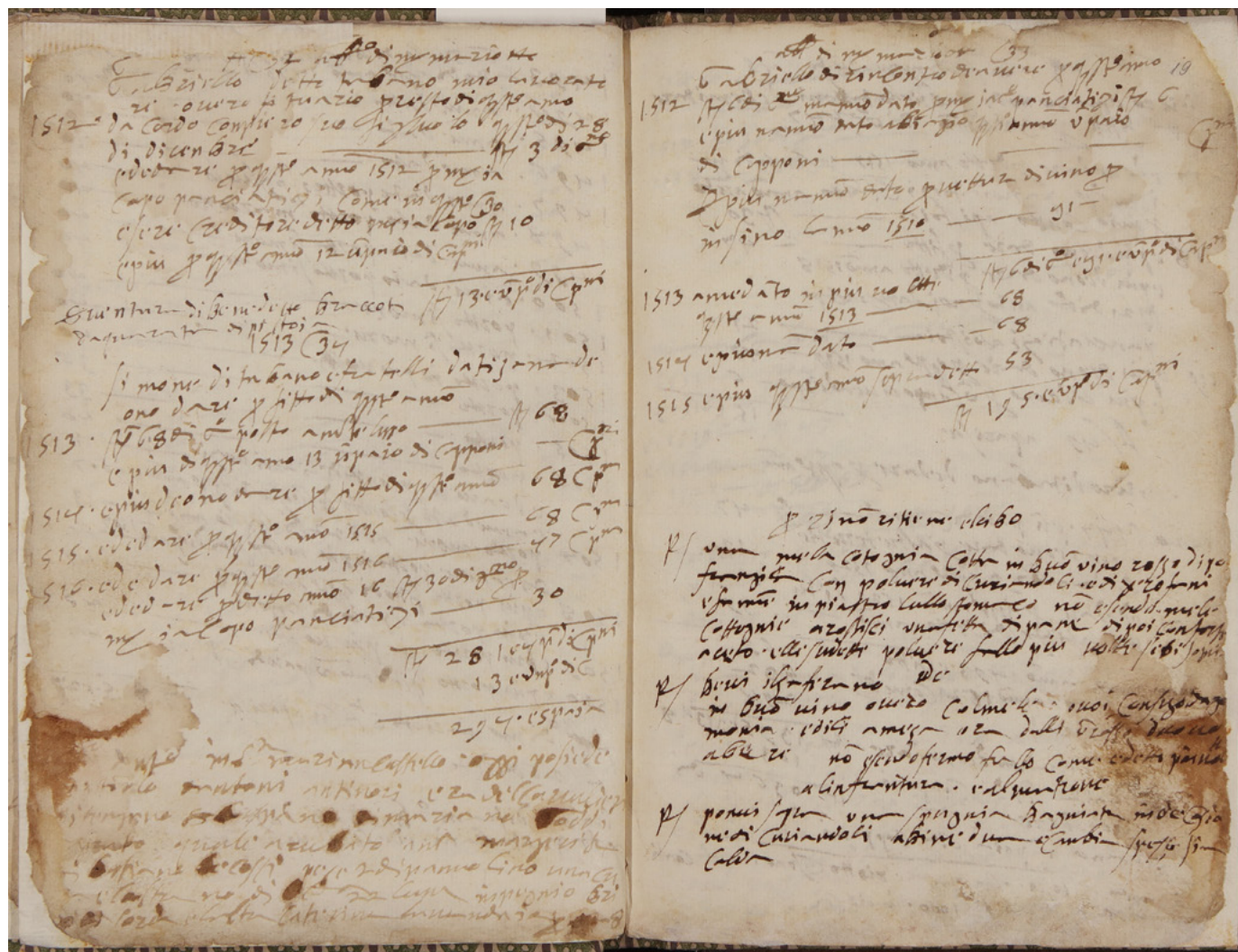


Fig. 4 – BNCF, Magliabechiano XV 19, ff. 18v–19r. Haphazard inclusion of recipes: at the top of the page, scribbled notes recording payments over various years; below, in darker ink (likely added later), a recipe “per chi non ritiene il cibo.” Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

Gisthalde er videres D. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849.

M. vntz adfistulaf e d'leant p. g. d' l'un
Rohbar abj d'upto. zo. d' f'orde e alla
monon m'g'n l'm'g'e i'g'n d'loct p'g
za fine p'm'g' i'g'n d'loct e i'g'n d'loct
p'5 d'loct co' g'u'nt' d'loct f'at d'loct

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1. Types of recipes

In most of the surveyed cases, there is a clear prevalence of recipes intended to treat wounds and lacerations, as well as other topical remedies (e.g., *impiastro*, *cerotti*, *unguenti*, *aque*, *olii*), as expected of the surgeon's line of medical practice.⁵¹ These preparations can be classified according to their binding agents – oil, wax, pitch, or resin – and their resulting consistency.⁵² Waxes and unguents broadly correspond to what would now be described as creams or pomades. *Waxes* (*cere*) are thicker and harder; some liquefy upon contact with the skin. Both waxes and unguents are applied by rubbing or massaging them into the skin. *Unguents* are richer in lipids (vegetable oils or animal fats) and spread more easily. They may contain some wax, though not in sufficient quantity to prevent liquefaction on contact with the skin. *Plasters* (*empiastri*) are characterized by their strong adhesive properties, due to the presence of pitch or resin. They are used externally and applied without friction, forming a stable, continuous covering on the skin. Plasters were employed particularly by barbers and surgeons rather than by physicians.⁵³

This remedy-type organization is especially evident in Manuscript D, which contains several folios with recipes closely connected to surgical practice. The main remedy types

references derive from learned sources, there is also incidental reference to hearsay: “Quidam referunt quod” (f. 44r) or personal remedies: “aqua et oleum ex nostra inventione per ulceribus et vulneribus.”

⁵¹ The recipes are mostly unguents, plasters, powders, waters, or oils as expected from surgical practice. BNCF Mag. XV 19: e.g., “unguentum ad fistulas et ulceras” (f. 42r), “unguentum conferens in fistula lacrimali et omnia alia fistula” (f. 44v), “unguentum in fistula lacrimali” (f. 46r), “unguentum per emoroydibus” (f. 49v); “cerotum bonum quod dissolvit duritie molificat exsiccat et consolidat” (f. 50v), “aqua bona et oleum per vulneribus et ulceribus” (f. 50v); BNCF Mag. XV 76: “unguento a mulificare lo ventre “perfecto,” “empiastro apurgare lo ventre” (f. 3v), “polvere da verga rescaldada e infada” (f. 8r), “unguento fino ala verga” (f. 8v), “unguento fino ala fistula” (f. 9r), “Afare olio roxado perfetissimo” (f. 20r), “unguento dagambe provado” (f. 28v), etc. BNCF Mag. XV 142: from f. 15r to f. 22r lists a number of oils, powders, etc.; various *cerotti* (ff. 46r–48v); *empiastri* (f. 51r); *unguenti* (f. 56r); *aque* (f. 69r); Wellcome MS 174, “ceroto capitale” (f. 1r–v); “aqua daguarire el membro” (f. 4v); “unguento da rhotura di peto” (f. 6r); “unguento da saldare” (f. 8r); “unguento da smilza” (f. 10v), etc.

⁵² On these remedy-types, see Bénézet, *Pharmacie et médicament*, 615–617.

⁵³ Distinctions between these remedy-types were not always consistent. On the fluctuating or erroneous terminology for topical remedies, especially ointments, plasters and waxes, see Bénézet, *Pharmacie et médicament*, 614. In the Giglio accounts, products described as *unguenti* (unguents) and *unzioni* (unctions) appear to be used synonymously. By contrast, the *Ricettario fiorentino* employs only the term *unguento*, clearly distinguishing it from *empiastro*. Plasters may be understood as a stiffer variety of ointment, made with gums and resins. Although ointments and plasters are presented in separate sections of the *Ricettario fiorentino*, J. Mesue's *Opera* (Venice, 1497) treats them as a single category, “de unguentis et emplastris.” On this, see Welch and Shaw, *Making and Marketing Medicine in Renaissance Florence*, 23, 100, 160, 165, 236, 253, 298.

used for surgical care include: *Diversi cerotti* (ff. 46r–48v); *Diversi empiastri* (f. 51r); *Diversi unguenti* (f. 56r); *Acque diverse* (f. 69r). At the same time, the manuscript also preserves more general medical material, such as a synopsis of the complexions and humours, the foundational concepts of Hippocratic–Galenic medicine.⁵⁴ Blank spaces in Nardi's casebook were later filled by subsequent users with alchemical recipes.⁵⁵ Later additions further include drawings of artillery shells for bombardments and the machinery used to launch them.⁵⁶ The collection also includes recipes explicitly marked as drawn from the Medicean foundry ("*cavate dalla fonderia segreta di S.A.S.*"), which are predominantly cosmetic in nature.⁵⁷

The manuscript also demonstrates the integration of *ad hoc* remedies into the treatment of patients at the hospital's *medicheria*, for instance, the case of a young man (*fanciullo*) with a dislocated clavicle.⁵⁸ The account explains how the patient was laid on his side, restrained by several assistants on a stretcher, and how the surgeon reset the clavicle ("*rimessi la clavicula al suo posto*"). After bandaging, a plaster was applied as recommended by the physician. Nardi writes,

Afterwards I removed the bandage and applied the plaster prescribed by my master, which is made in the following way:

Take:

Venetian turpentine, 4 drachms

Sealed earth

Dragon's blood (of each equal parts)

Armenian bole

Mix, and let them be made into very fine powders, and let a plaster be made according to art; and let it be applied over the affected place.⁵⁹

The treatment was subsequently replaced with a viscous plaster (*cerotto*) of Nardi's own formulation, combining Venetian turpentine oil, dragon's blood, and two medicinal clays.

⁵⁴ BNCF, Mag. XV 142, ff. 13r–14r.

⁵⁵ Ibid. ff. 26v–30v.

⁵⁶ Ibid. ff. 163r–165v.

⁵⁷ Ibid. ff. 127r–130v.

⁵⁸ Ibid. f. 10r.

⁵⁹ Ibid. Translation is mine. The recipe combines ingredients with complementary wound-healing properties frequently used in topical remedies. Venetian turpentine provides a protective, mildly antiseptic base. Terra sigillata and Armenian bole act as absorbent astringents, drying the wound. Dragon's blood aids coagulation and tissue repair. Together, they form a plaster applied to protect and heal the affected area. See Venieri, et al. "Bridging the Gaps: Bole and Terra Sigillata," 6–8; Basile, "Dragon's Blood or the Red Delusion," 1248–1250.

Nardi recorded this recipe in a formal, upright hand, deliberately imitating a physician's prescription – an eloquent indication of his professional aspirations. According to the account, the treatment proved highly successful. (Fig. 6)

2. Adaptation of recipes: the case of *unguento apostolorum*

Unguent were standard medicaments throughout Antiquity and the Middle Ages, constituting a traditional and well-established category of topical remedies. The *Ricettario fiorentino* of 1499 records 35 unguents; the updated 1576/97 *Ricettario* lists 40 unguents;⁶⁰ by contrast, the manuscript Mag. XV. 92 – the recipe collection belonging to the hospital of Santa Maria Nuova (1515) – records as many as 162.⁶¹

Manuscript recipe books often preserve multiple versions of the same prescription sometimes under slightly different names, with variations introduced through qualifiers, indications of use, authorship, or provenance.⁶² Some of these name-tags acquire grandiloquent or deliberately elaborate overtones, suggesting an underlying commercial or advertising strategy. Classification systems frequently emphasize use – either the condition to be treated or the part of the body to which the remedy should be applied. Compared to printed formularies, manuscripts tend to provide more detailed descriptions of procedures and the order of ingredients, occasionally supplemented by personal or experiential observations. In the surveyed surgical handbook, traditional remedies are reworked for practical use: ingredients are simplified or reduced to a strict minimum, quantities are not consistently provided, while greater attention is often paid to customized processes of manufacture and preparation. Evidence suggests that many of these external remedies were probably manufactured by the surgeons themselves.⁶³

A case in point is the traditional *unguento apostolorum* (also known as Apostles' Ointment or Ointment of Venus) a *dodecapharmacum* – that is, a compound made of twelve ingredients – attributed to Avicenna⁶⁴ but closely related to a kind of plaster found in various Late antiquity Greek recipes.⁶⁵ The standard formulation includes turpentine, white

⁶⁰ On the *Ricettario fiorentino* and other pharmacopeias, see Beck, “The *Ricettario fiorentino*,” 45–62. For a comparison of the various sixteenth-century editions of the *Ricettario fiorentino*, see Corradi, *Le prime farmacopee*, 1–64.

⁶¹ On this manuscript, see Henderson, *The Renaissance Hospital*, 297–335.

⁶² See Basile, “Medicinal Waters,” 117–126.

⁶³ Stolberg's discussion of German barbers indicates that being able to prepare external remedies was a condition to successfully pass the “master's exam.” Cf. Stolberg, “Surgical Training and Practice,” 85. Though less well documented, Cavallo speculates that this may have also been the case in Italy (Cavallo, “Learning to Dress Wounds,” 58). Jones, “Learning surgery from medieval manuscripts,” 126, shows that recipe collections were instrumental in the surgical practitioner training in seventeenth-century England.

⁶⁴ Avicenna, *Canon of Medicine* V.1.11 (533va).

⁶⁵ Asade and Druille, “The Syriac Christianization of a Medical Greek Recipe,” 11–38.

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Venne il fanciullo il quale haueua cheato
 la sia destra et colli la zassetta in q^o
 modo et lodisti nel neltto a fauer
 et due pigliando nel mezzo d'uno sin
 golar et tenua bere tutta la vita et in
 gata bere a talche due altri ne erano
 et tenuano la gamba et colli mettolo
 y fianco et facendo tirare d'ambe
 due le parti in un medesimo tempo et
 d'accordo et in facendo l'operazione sia
 et le mani in metti la clauicola al suo
 luogo finalmente gli feci una strascina
 di buonissima fasciatura et colli sette
 et dicta et ordire fino in 8 giorni
 dopo lo sfascia et u. metti la il cerotto
 et ordina bene del mio m.^o quale e in
 questo modo
 L'erebentina venetiana 5 q
 terra sigillata
 sangue d'orago an p. eq.
 Bolarme no
 m. et subtilissime sixt pulueres et sixt
 Cerotto S. A. et imporgat^{etur} sup locum
 affattura

Fig. 6 – BNCF, Magliabechiano XV 142, f. 10r. Case of a young boy with a dislocated clavicle, followed by a recipe for a plaster (*cerotto*) prescribed by Nardi. Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

wax, gum ammoniac, birthwort roots, olibanum (frankincense), bdellium, myrrh, galbanum, opoponax, verdigris, litharge, and olive oil/vinegar.⁶⁶ Widely used throughout the Middle Ages and profusely cited in medical, surgical, and pharmaceutical literature,⁶⁷ the unguent served as a topical remedy for bleeding wounds, valued for its healing, astringent, absorbent, and emollient properties.⁶⁸ By the sixteenth century, the *unguento apostolorum* had become a standard preparation in the antidotaries and civic pharmacopeias.⁶⁹ The surgeon's manuscripts, however, reveal a range of ad hoc adaptations.

Manuscript A, composed thirty years before the publication of the 1499 Ricettario fiorentino, contains nearly the same list of ingredients but notably excludes turpentine (present in Avicenna's formula).⁷⁰ The version transmitted in Manuscript A is very similar to Dino del Garbo's (1280–1327) recipe found in his "Compilatio emplastorum et unguentorum," a tract circulating in manuscript form before being printed as an appendix to his *Expositio Dini Florentini super tertia et quarta fen quarti Canonis Avicenne* (Venice, 1496).⁷¹ The Florentine physician – an important commentator on Avicenna's *Canon* – also omits turpentine,⁷² possibly in order to maintain the symbolic total of twelve ingredients rather than thirteen.⁷³ Evidence of borrowing from del Garbo's variation – whether directly or,

⁶⁶ *The London encyclopaedia: or Universal dictionary of science, art*, Vol. 2, 507. Also, Corradi, *Le prime farmacopee*, 42. Stannard, "Hans von Gersdorff and Some Anonymous Strassburg Apothecaries," 55–65 (esp. 62–63) states that the unguent "owed its name and perhaps its popularity as well, to a supposed connection between the number of apostles, the number of ingredients, and its twelve-fold efficacy." See recently Stolberg, "Surgical Training and Practice," 85–86, who discusses the use and preparation of these plasters and unguents in the Germanophone area.

⁶⁷ The unguent is mentioned in the surgery of Theodoric dei Borgognoni, Salicet, Guy de Chauliac, and Henri de Mondeville, among others. The list of ingredients oscillated between twelve and thirteen ingredients (even if the ointment was supposed to derive its name from the twelve apostles), and was also known as "unguentum veneris," "Cesareos (according to Mesue)," or "gratia dei." On this see Guy de Chauliac, *Inventarium sive chirugia magna*, 177.

⁶⁸ See Asade and Druille, "The Syriac Christianization of a Medical Greek Recipe," 21.

⁶⁹ See, for example, *Luminare maius*, f. 78 r (citing authors like Avicenna, Pietro d'Argelata, Mesue, etc.) *Thesaurus aromatariorum*, f. 114r; *Ricettario fiorentino* (ed. 1499), f. 63v-B; *Ricettario fiorentino* (ed. 1574), 258.

⁷⁰ BNCF, Mag XV 76, f. 21r. The ingredients include: "cira bianca," "raxina," "opoponago," "fore deramo," "arminiaga," "arestiologia," "incenso maschio," "mira," "gabino," "olio," "letrigerio," "delio," and "laxedo di vino."

⁷¹ Dino del Garbo, *Expositio super tertia et quarta fen IV. libri Canonis Avicennae*, f. 154v a-b. On this see Guy de Chauliac, *Inventarium sive chirugia magna*, 177.

⁷² Turpentine and its derivatives have been traditionally used to treat skin infections due to its soothing, anti-inflammatory, and antiseptic properties. See Barnes and Greive, "Topical pine tar."

⁷³ Dino del Garbo, *Expositio super tertia et quarta fen IV. libri Canonis Avicennae*, f. 154v: "et dicitur unguentum apostolorum quia un eo sunt xii medicine."

more likely, through an intermediary vernacular translation – can be found in Manuscript A's detailed description of the remedy's properties, which closely paraphrases his wording:

Unguento apostolorum elq(u)ale edito inguento vene(r)is ed inguento p(er)fetissimo
 aguarire ligiermente le fistole greve / Eguarisse le scrofoli cative / e mondifica le feriti Togli
 lacarne morta / e le salda e dixe ch(e) le son(no) xii medixine come son(no) li xii apostoli.⁷⁴

Nardi's book, produced over a century after manuscript A, provides instead a tailored version of the *unguentum apostolorum* recorded in the updated civic pharmacopeia. In this case, variation does not derive from a divergent manuscript tradition, as in Manuscript A, but reflects a customized adaptation of a well-established ointment within surgical practice.⁷⁵ The official recipe is condensed: not all components are mentioned, and quantities are omitted.⁷⁶ Herbal ingredients are summarily referred to as "altre cose." By contrast, the preparation process is described in detail, with attention to stages, instruments, and techniques, not as a permanent record but as a shorthand annotation. Nardi's formulation thus emphasizes procedure – particularly his own method of compounding the unguent – over strict adherence to a fixed list of ingredients. Notably, details included by Nardi, such as the addition of verdigris (*verderame*) at the final stage, as the mixture cools, are absent from the civic formularies.⁷⁷

3. Beyond mainstream pharmacology: magic, astrology, and alchemy

Whereas these manuscripts largely feature remedies associated with surgical treatments, they also record a much wider range of therapies. Although most remedies can be situated within the Hippocratic–Galenic tradition, some texts offer a glimpse into alternative forms of medical practice, including alchemical, astrological, and magical knowledge – a trait that distinguishes them from official pharmaceutical literature. This should not surprise us. The recourse to magic or religious cures, including incantations and invocations, were part of the therapeutic repertoire, often complementing more orthodox naturalistic

⁷⁴ BNCF, Mag XV 76, f. 20v–21r. Cf. *Expositio*, f. 154va: "Unguentum apostolorum et est unguentum veneris rectificans cum facilitate fistu(las) difficiles et scrophulas ulceratas et eradicat eas et mundat vulnera ex carne put(refacta) sine dolore."

⁷⁵ Cf. Bénézet, *Pharmacie et médicament en Méditerranée occidentale*, 633. The Apostle's unguent ("onguent des apôtres") is rated among the most frequent ones in Benezet's magisterial medieval and early modern survey of apothecary inventories and pharmaceutical literature.

⁷⁶ BNCF, Mag XV 142, f. 61r. Only a few ingredients are mentioned: "gomme," "terbentina/tremintina," "ragia liquida," "cera," "litargino," "verderame," and "altre cose."

⁷⁷ Ibid.: "eccetto il verderame il quale si mette da ultimo dase et si continua dimenare finche sia freddo." I find a similar recommendation in Francesco Sirena's *L'arte dello Speciale* (Pavia, 1679, 788) a monumental work containing over 1,200 recipes: "Il verderame si debe porre nell'unguento subito colato, e piu non se gli deve far sentir fuoco, perche perderebbe parte di quel suo bel color verde."

medicines.⁷⁸ Charms, associated with other empirical cures (*experimenta, empirica, miraculum*) which could not be fully explained rationally, and were increasingly resisted by academic medicine, still found a place in late medieval medicine.⁷⁹ Examples are especially abundant in the earlier recipe-books or in collections associated with rural practitioners or those of semi- or non-professional status. The author of the Giovanni di Benedetto's collection, for example, lists various such recipes. For instance, an incantation to cure "scrofula" (an infection of the lymph nodes causing an abscess in the neck),⁸⁰ or to make a person sleep as though he were dead,⁸¹ a spell to see if an ill person would live or die,⁸² an incantation to free someone from a serpent's bite,⁸³ and a miraculous unguent.⁸⁴ To cure someone from a serpent's bite, for example, requires drawing a circle with a stick in the middle of which the sick person is supposed to sit, using woman's milk or dragon's blood, writing the word "agios" three times, reciting a number of prayers to Jesus Christ, and sucking up the poison from the wound.⁸⁵ (Fig. 7)

The presence of incantations in Manuscript C is considerably less pervasive, yet still discernible. For example, a blood-staunching charm reproduces the widely attested *stans sanguis* tradition, whose stability across Latin and vernacular witnesses underscores its integration into practical medicine.⁸⁶ Here, the incantation consists of a prayer (three *Pater Noster* and *Ave Maria*), physical manipulation (binding the fingers), and imperative for-

⁷⁸ On magic and medicine, see Copenhaver, "Natural Magic, Hermeticism and Occultism in Early Modern Science," 261–301; Park, "Medicine and Magic: The Healing Arts," 129–149. On the overlap and complementarity of medical, ecclesiastical, and folk systems of healing in early modern Italy, see Gentilcore, *Healers and Healing in Early Modern Italy*. Charm translates *car-men*, which is the usual heading found in Latin medical recipe books, house-hold miscellanies, commonplace books, and medical compendia for treatments employing words. They may be spoken as in a performative speech act, written on the body, on foods or over drinks, or on amuletic objects, or parchment carried by the patient. Often, they are accompanied by ritual gestures and prayers. For a general discussion of charms and magic in the late medieval period, see Kieckhefer, *Magic in the Middle Ages*, 56–90.

⁷⁹ See the excellent discussion of charms as "experimenta" and "empirica" in Olsan, "Charms and Prayers," 349–350.

⁸⁰ BNCF, Mag XV 76, f. 16r: "Encanto dalescrofole elq(u)ale se vol dire adi di dome(n)ga," followed by an incantation in Latin.

⁸¹ Ibid. f. 21r: "A fare dormire una p(er)sona ch(e) parera morta."

⁸² Ibid. f. 22r: "bello exp(er)imento se li i(n)fermo di vivere omorire."

⁸³ Ibid. ff. 23v–24r: "Aliberare chi tu voi dalmorso del serpente."

⁸⁴ Ibid. ff. 37r–38r.

⁸⁵ Ibid. ff. 20v–21r.

⁸⁶ Wellcome MS 174, f. 4r: "A stagnare el sangue: dirai tri pater nostri e tre ave marie alaude de la trinitade e ligali quatro dedi de la mano. ligalo con uno spageto ben stretto e dirai: sangue sta fiso come fa el corcefiso: sangue sta forte come fe cripto ala morte sangue sta in la vena toa come fa cristo a la fede soa."

mula (“*sangue sta fiso come fa el corcefiso*”).⁸⁷ The charm’s logic rests on an analogy with the body of Jesus Christ: just as Christ’s body remained fixed on the cross and in death, so the patient’s blood is commanded to remain within the veins. The performative effect of the incantation combines liturgical elements, spoken command, and manual intervention.⁸⁸

Another charm is recorded to aid the extraction of a decayed tooth.⁸⁹ This charm blends Marian devotion, learned magical elements, and practical technique. Its central analogy – likening painless extraction to the effortless flow of milk from the breasts of the Virgin Mary – parallels other vernacular charms that use sacred physiology as a healing model. The inclusion of liturgical phrases (*agios, adonai, athanatos*) situates the text within the multilingual tradition of Latin *experimenta*, where the power of divine names signals ritual efficacy.⁹⁰

Alongside incantations, some manuscripts also preserve astrological lore. Since antiquity, astrology had functioned as “handmaiden to medicine”⁹¹ providing supplementary guidance for determining diagnoses, prognoses, and treatments. Although not all learned physicians were confident in using astrology in medical practice,⁹² often engaging in heated debates⁹³ – and recent scholarship has noted a significant decline in the status of astrol-

⁸⁷ This formula closely mirrors versions preserved in manuscripts such as London, BL cod. Harley 2389, f. 29r: “To staunch blode. ‘sanguis mane in te sicut fecit Christus in se. sanguis mane in tua uena sicut Christus in sua poena. sanguis mane fixus sicut Christus quando fuit crucifixus.’”; also Wellcome MS 417 (f. 97v) and NLW Peniarth MS 369 (f. 108v), where the phrase “*sanguis... sta in te fixus sicut Christus stetit crucifixus*” finds a near-verbatim counterpart in the vernacular. For a broader discussion, see Bauer, “Biblical Magic,” 271–272; Murray Jones and Olsan, “Performative Rituals,” 406–433.

⁸⁸ Murray Jones and Olsan, “Performative Rituals,” 409.

⁸⁹ Wellcome MS 174, f. 44r: “Achavar uno dente senza dolore cum dui dedi che sia gusuo fioloasto. Di con devotione queste parole + si come fo dolia lo late de la verzine maria lo quale de con le soi mamelle al suo cussi possa tirare questo dente senza dolia + agios + adonai *athanatos* di le sopra scrite parole tre volte poi pilia lo dente che dole cum li dedi che sono apreso a lo dedo grosso e tirai fora facendo cum reverentia et e approvato.”

⁹⁰ Manuscript evidence (e.g., Bodleian Library, Rawlinson c. 299; Wellcome MS 5262) shows that such invocations commonly accompany explicit procedural steps, as here, where the charm culminates in the physical extraction of the tooth. On these “powerful words,” see Olsan, “Charms and Prayers,” 357–358; more generally see Skemer, *Binding Words*, 96–107.

⁹¹ Cf. Pfeffer, “Reassessing the Marginalization of Astrology,” 1162. On medical astrology, see among many others: Darrel, “Astrology,” 542–561; Grafton and Siraisi, “Between the Election and My Hopes: Girolamo Cardano and Medical Astrology,” 69–131; Azzolini, *The Duke*, 135–166, and Siraisi, *Medieval and Early Renaissance Medicine*, 135–136.

⁹² Cooper, “Approaches to the Critical Days,” 536; Vermij and Hirai, “The Marginalization of Astrology,” 405.

⁹³ On the partial or disputed relevance of astrology in Renaissance medicine, see Wear, “Galen in the Renaissance,” 229–262 (esp. 245). Astrology was a hotly disputed subject throughout the sixteenth century, see Cooper, “Approaches to the Critical Days,” 542.

ogy as early modernity progressed –⁹⁴ iatromathematics remained a widespread ancillary discipline across many forms of medical practice well into the seventeenth century. Medical practitioners regularly used horoscopes and astrological charts to identify the “critical days” for illness,⁹⁵ determine when to bleed a patient, or mix medicines according to the zodiac sign governing that body part. It is therefore not unexpected to find traces of such knowledge in surgeons’ handbooks, as lunar almanacs were especially necessary to determine the most favorable moments to intervene with patients, especially when letting blood, bathing, or cupping.⁹⁶

Oddly enough, the presence of astrology is most conspicuous in Manuscript B, which otherwise largely transmits Latin surgical literature. The manuscript’s final section devotes several folios to astrological material, including notes on the twelve signs, the beneficent and pernicious properties of each planet, the classification of signs according to their qualities, the properties of the moon, auspicious and inauspicious hours of the day, and a section on phlebotomy.⁹⁷ Two sketchy astrological tables accompany the hand notes (Fig. 8). This is a clear example of juxtaposition of learned sources and supplementary practical information (based on simple astrological principles) in a single book, reflecting the broad spectrum of expertise required from surgical practitioners. It also demonstrates the adaptability of such handbooks to accommodate knowledge deriving from different epistemic domains, combining both academic and vernacular sources.

A second type of material with a discernible astrological declination attested in the manuscripts pertains to botany. At the intersection of learned and folk lore, botanical treatises and manuscript herbaria sometimes address plants in terms of planetary dominance. The practicalities of herbalism instructed healers to gather herbs “during specific phases of the moon depending on how they would use the plants,”⁹⁸ but there was also a corpus of medieval literature that connected herbs to different signs of the zodiac.⁹⁹ This knowl-

⁹⁴ On the marginalization of astrology in the transition to the modern world, see the extensive debate in Pfeffer, “Reassessing the Marginalization of Astrology.”

⁹⁵ See Pennuto, “The Debate on Critical Days in Renaissance Italy,” 75–98, and Cooper, “Approaches to the Critical Days.”

⁹⁶ Lunar phases draw an analogy between the moon’s causing the tides and the moon’s action on the fluid humours of the body. See Cooper, “Approaches to the Critical Days,” 541; Carey, “Judicial Astrology in Theory and Practice,” 90–98 (esp. 93); Vermin and Hirai, “The Marginalization of Astrology,” 405.

⁹⁷ BNCF, Pal. 1068, “De duodecim signis,” “De bonitate et malitia omnium planetarum” (f. 120r), “de signis solis,” “Signa mobilia, comunia, stabilia” (f. 122r), “de proprietate lune” (f. 124r), “de horis bonis et malis” (f. 124v), etc.

⁹⁸ See Eamon, “Astrology and Society,” 145.

⁹⁹ According to Voigts “Plants and Planets,” 29–46 (esp. 29 and 45), there were two kinds of such treatises disseminated in the late Middle Ages: one – made up of three textual traditions – addressing the relationships of all seven planets to plant (the Alexander/Pseudo-Albertus tra-

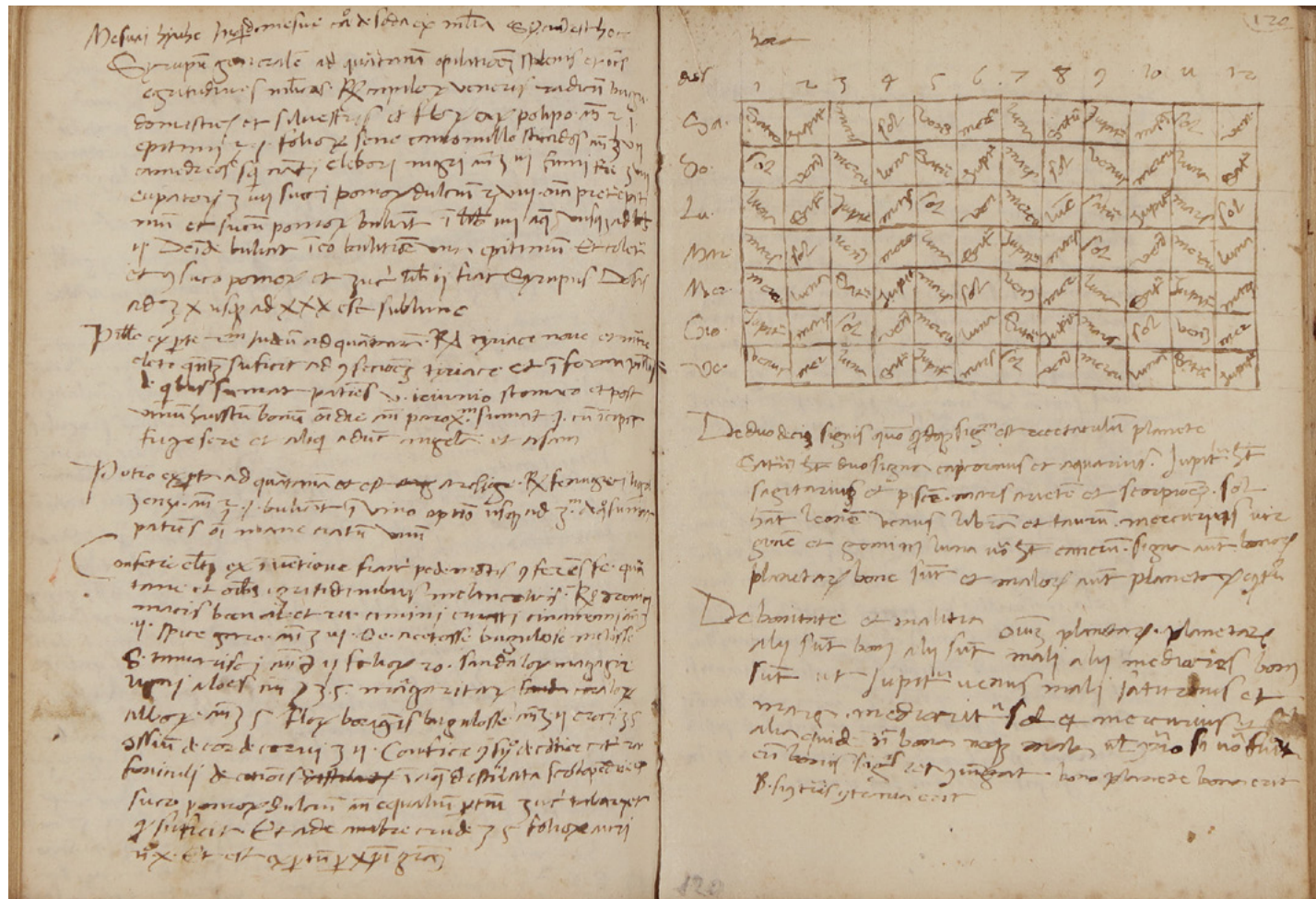


Fig. 8 – BNCF, Palatino 1068, ff. 119v–120r. Astrological section: “De bonitate et malitia omnium planetarum.” Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

edge enabled medical practitioners to treat specific ailments by determining what sign and planet ruled over the part of the body that needed care, and then prescribing an herb of the same astrological sign. Manuscript C provides evidence of astrological botany in two brief sections entitled: “Queste sono le herbe de li segni celesti” and “Queste sono le herbe de li sete pianeti,”¹⁰⁰ followed by a name concordance and a succinct description of the main therapeutic use of each plant.¹⁰¹

Alchemical experimentation is perhaps the heterodox practice that is best represented across all manuscripts. Commonly regarded as a subordinate and artisanal branch of applied physics in the Middle Ages, alchemy enjoyed an uninterrupted standing in industrial, metallurgic, and pharmaceutical pursuits, but acquired a far more prominent status in the sixteenth century.¹⁰² It is worth noting that alchemy was not an institutionalized discipline, and therefore remained in the margins of the medical orthodoxy well into the seventeenth century.¹⁰³ However, it proliferated in a sort of middle ground – often discredited in theory but embraced in practice. In Florence in particular, alchemy was a *de facto* phenomenon, which was greatly stimulated by the Medici family’s interest and personal involvement in alchemical experimentation.¹⁰⁴

The manuscripts offer extensive evidence of the diverse applications of alchemical experimentation in pharmacology, especially in the production of oils, waters, pigments,

dition; the Kiranides tradition); and a second cluster of texts, each one about a single plant deriving its powers from a specific planet. On the plants especially associated with the sun (sunflower) and the moon (peony-lunaria), see also Segre, “Botanica astrologica e alchimia vegetale,” 533–560, and Arber, *Herbals*, 260–261.

¹⁰⁰ Wellcome 174, ff. 56v–57r.

¹⁰¹ Ibid. ff. 57v–58r.

¹⁰² On the rise of alchemical interest in the Renaissance despite its criticism and lack of institutional protection, see Long, *Openness, Secrecy, Authorship*, 143–174. On the general reluctance of university-educated physicians to accept distillation, which was viewed predominantly as “an artisan activity,” see Moran, *Distilling Knowledge*, 37–66 (esp. 55). However, in practice many physicians “showed a readiness to study with, and learn from, contemporary alchemists.” cf. Palmer, “Pharmacy in the Republic of Venice,” 115. On alchemy as a “vernacular science of matter” see Smith, *The Body of the Artisan*, 129–151.

¹⁰³ The increasing legitimation of alchemy can be put down to the new cosmological and religious overtones fostered by the Neoplatonic focus on natural magic and the occult, an empirical turn that favoured experimentation with materials and saw the publication of treatises and handbooks for the manual arts (*artes mechanicae*), and later, the rise of Paracelsian medicine and iatrochemistry as a competing model to the orthodox Galenic paradigm. See Newman, “From Alchemy to ‘Chymistry,’” 497–499.

¹⁰⁴ See, among others, Bellorini, *The World of Plants*, 168–176; Perifano, *L'alchimie a la cour de Côme Ier*, 46–47; Clericuzio, *Chemical Medicine*, 375–376; Barker, “Cosimo I de’ Medici and the Renaissance Sciences,” 520–580; Conticelli, “*Guardaroba di cose rare et preziose*”; Piccardi, *La farmacia granducale*.

dyes, cosmetics, and various medicinal and industrial household products. Among the various alchemical procedures, distillation stands out with remarkable prominence.¹⁰⁵ Hydro-distillation, a method utilizing water (steam) as an extraction solvent to capture volatile or polar components of plant materials, had been employed in pharmacy as early as the thirteenth century but acquired increased legitimacy and visibility with the publication of distillation manuals.¹⁰⁶ By the late sixteenth century, distillation had evolved into a standard and widely adopted procedure in the preparation of medicines.¹⁰⁷

Nardi's casebook is heavily interpolated with alchemical recipes, deriving from later hands – evidence of the burgeoning interest in chemical experimentation in the Medici grand duchy.¹⁰⁸ The other manuscripts, nonetheless, feature some form or other of distillation or alchemical procedures. Manuscript C, for instance, provides the description and therapeutic uses of simple waters obtained by distillation and decoction in several folios, classing them according to the four properties in the Galenic pharmacological theory (cold, hot, wet, and dry). Its owner, Gasparo di Cagali, indicates that much of the information in this section is drawn from a certain Maximo da Milan. Inside the lower cover the volume includes two fine drawings of distilling apparatus (Fig. 9). Similarly, the Magliabechiano XV 76, written in 1468, contains a miscellany of alchemical, medicinal, and cosmetic recipes, some of which include distillation processes. For example, the author indexes a certain “water to break any metal” (“acqua da rodere ogni metallo”) which has also multiple other marvelous uses as hair dye and as writing ink, when combined with tin and copper filings.¹⁰⁹ According to the author, this water is obtained through distillation in a still and requires that the person in charge carefully observe changes in color as the process unfolds. Manuscript D, in turn, bears considerably fewer traces of recipes requiring sophisticated distillation processes, except for a few preparations (e.g., “per rompere un ferro in 2 ore”) containing mineral substances that involve distillation.¹¹⁰ Taken as a whole, however, there is clear indication that simple distillation procedures were likely undertaken by surgeons in home laboratories, and that compilers drew from the *segreti*

¹⁰⁵ For the medieval tradition of distillation, see Forbes, *A Short History of the Art of Distillation*, 55–98. For the use of distillation in pharmacy, see Debus, *The Chemical Philosophy*, I: 19–25.

¹⁰⁶ Among the most influential was Hieronymus Brunschwig's *Liber de arte distillandi de simplicibus* (known as the *Small book of distillation*, 1500), which systematized and disseminated through the printing-press the traditional knowledge of extracting medicinal waters from plants and other curative materials. See Taape, “Distilling reliable remedies”; Debus, *The Chemical Philosophy*, I, 21–23; and Hirsch, “The Invention of Printing.” On the sixteenth century as the “new age of distillation,” see Taape, *Crafting Medicine*, 69–112.

¹⁰⁷ See Bellorini, *The World of Plants*, 168–176.

¹⁰⁸ See Strocchia, “Notes from the Front,” 19.

¹⁰⁹ BNCF, Mag XV 76, f. 18v.

¹¹⁰ BNCF, Mag XV 19, f. 10v.



Fig. 9 – Wellcome Library, MS 174, lower margin. Two distillation apparatuses. Courtesy of the Wellcome Library.

literature,¹¹¹ including not only medical but also chemical and technical recipes, in wide circulation both in print or manuscript form.

Surgeons across the social spectrum: Latin, Vernacular, and hybridity

The diversity of content, medical approaches, and text types featured in the surgeons' books is mirrored by the range of linguistic varieties, registers, and styles displayed across Latin and the vernaculars. Together, these features attest to the heterogeneity and broad sociodemographic reach of surgery as an early modern category. While it lies beyond the scope of this essay to reconstruct a social profile of the authors or users of these handbooks¹¹² – however tentatively – one feature nonetheless warrants brief consideration, as it opens promising avenues for investigating the social and educational backgrounds of early modern surgeons. Specifically, the corpus reveals patterns of alternation, juxtaposition, and code-switching between Latin and the vernacular. This broad phenomenon takes various forms in the corpus.

The first case is relatively commonplace and concerns the co-occurrence of vernacular and Latin sections presented as discrete text blocks, typically identifiable as one or more recipes in one language followed by others in another. A good example is Manuscript A that, among the incantations discussed above, alternates between languages, and even preserves a similar prayer recorded in Latin and Italian in proximity.¹¹³ While Italian is prevalent in the recipe collection, the presence of Latin liturgical charms alongside vernacular ones points to a blurring of linguistic barriers within the religious sphere, to the extent that the scribe alternates between the two without clear distinction. Manuscript C, transmitting primarily recipes in Italian, also contains individual sections with a handful of Latin ones.¹¹⁴

Manuscript B, by contrast, presents a situation that is perhaps the inverse of the two cases above. Although it primarily transmits Latin surgical literature, the compiler nevertheless inserts recipes in Italian. For instance, folio 111v records a “Balsamus artificialis ut oleum preciosissimum etc.,” while folio 113r contains “Balsamo artificiale da mettere nelle ferite,” followed by a series of vernacular recipes before the text returns to Latin material.¹¹⁵

¹¹¹ On secrets and books of secrets, see Leong and Rankin, *Secrets and Knowledge*, 7–20; Eamon, “How to Read a Book of Secrets,” 23–46. On recipe collections and secrets as part of the surgical practitioner training in England, see Jones, “Learning surgery from medieval manuscripts,” 126.

¹¹² See, as an example, Strocchia's well-documented reconstruction of Nardi's profile and career.

¹¹³ Mag XV 76, e.g., “Longinus miles fuit hebreus virus non vidit latus domini nostri jesu Christi cum lancea perforavit...” (ff. 14r–v) and “Signor mio, Jesu Christo, como lonzino fo hebreo e fo cavaliero zudio e denote per lo fiancho dritto de lalancia sangue...” (ff. 22r–v).

¹¹⁴ Wellcome 174, ff. 11r, 13v–14r, 19v–20r, 20v–21r, 48v–49r, 33r, 65v–66r, 67r.

¹¹⁵ BNCF, Pal. 1068, ff. 111v, 113r and subsequent folios.

Another instance of co-occurrent bilingualism is found in Manuscript E. As shown in the sample page from his casebook, Nardi uses Italian for recording the patient, condition, cure, and treatment. (Fig. 10) As marginal annotation, the surgeon adds paratextual *tituli*, such as “de ulceribus in vulva” “de ulceribus gallicis in mammellis,”¹¹⁶ which may be interpreted as reference markers for later consultation or as points of correlation with diseases described in medical literature.¹¹⁷ In this instance, vernacular and Latin are juxtaposed in a clear case of functional bilingualism, reflecting a professional surgeon proficient in both a higher linguistic register used for technical medical discourse and the everyday vernacular employed in hospital practice.

In other cases, slippage or variation between the two codes occur in evidently perfunctory and unconscious ways. These are evidence of what linguists have termed code-switching or code mixing, namely “the alternate use of two languages (or dialects) within the same stretch of speech, often within the same sentence.”¹¹⁸ This includes insertion of isolated items from the second language within the syntactic structure of the first language; the interchange between the first and second language, each with their own separate syntax, or congruent lexicalization, notably shared syntactic structure where both languages can fulfil lexical items. Nardi’s book provides interesting cases. Recipes are recorded largely in Italian but, incidentally, Latin may slip in inadvertently. This happens when, for example, after an Italian recipe against “tigna” – a scaly, crusting disease of the scalp and skin –, Nardi inserts a Latin *titulus* “Ad idem sepius probatum” and then continues in Italian (Fig. 11).¹¹⁹ This case begs the question of whether the surgeon was actually translating impromptu from a Latin recipe collection and a lapsus occurred with the title, or whether the expression “Ad idem ...” had become a fossilized phrase to introduce similar recipes in succession.

A similar question arises with Nardi’s transcription of the cerate reportedly formulated by his master (“dal mio maestro”) discussed earlier.¹²⁰ In this case, the surgeon may have been translating there and then a Latin recipe into Italian, except for the final section which was copied in Latin (cf. Fig. 6 above):

di poi lo sfasciai et vi metti su il cerotto di ordinatione dal mio m(aestro) quale e in questo modo:
R/ terebentina venetiana d 4

¹¹⁶ BNCF Mag. XV 142, f. 2v.

¹¹⁷ Ibid., ff. 1r–3v, 31r–32v. The procedure is repeated on several folios.

¹¹⁸ Winford, *An Introduction to Contact Linguistics*, 14. The terminology to describe this or similar phenomena, however, is debated among specialists, see, Gardner-Chloros, *Code-Switching*, 10–13 and Schendl and Wright, *Code-Switching in Early English*, 23–24.

¹¹⁹ BNCF Mag. XV 142, f. 20v.

¹²⁰ Ibid., f. 10r.

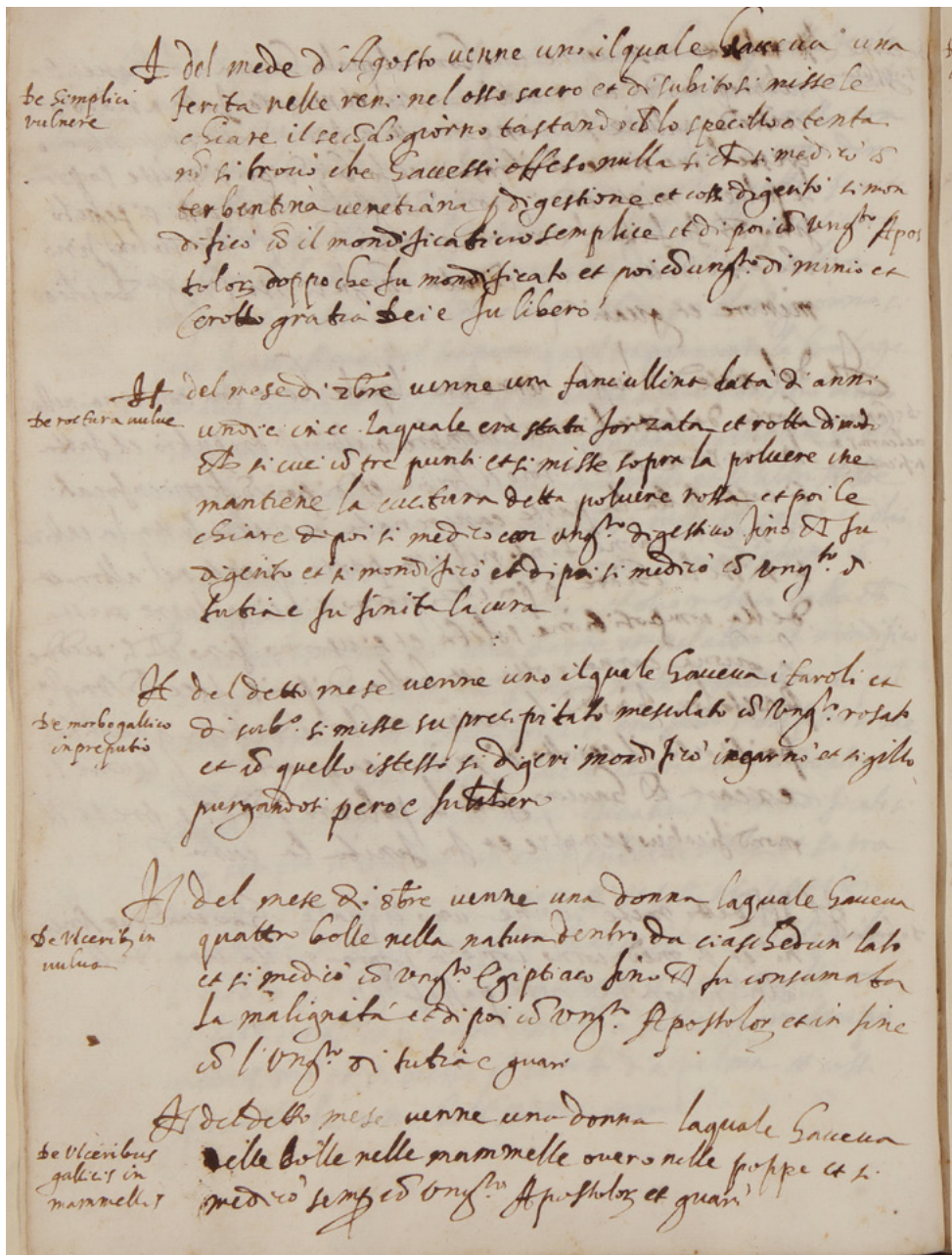


Fig. 10. BNCF, Magliabechiano XV 142, f. 2v. Coexistence of vernacular and Latin marginalia. Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

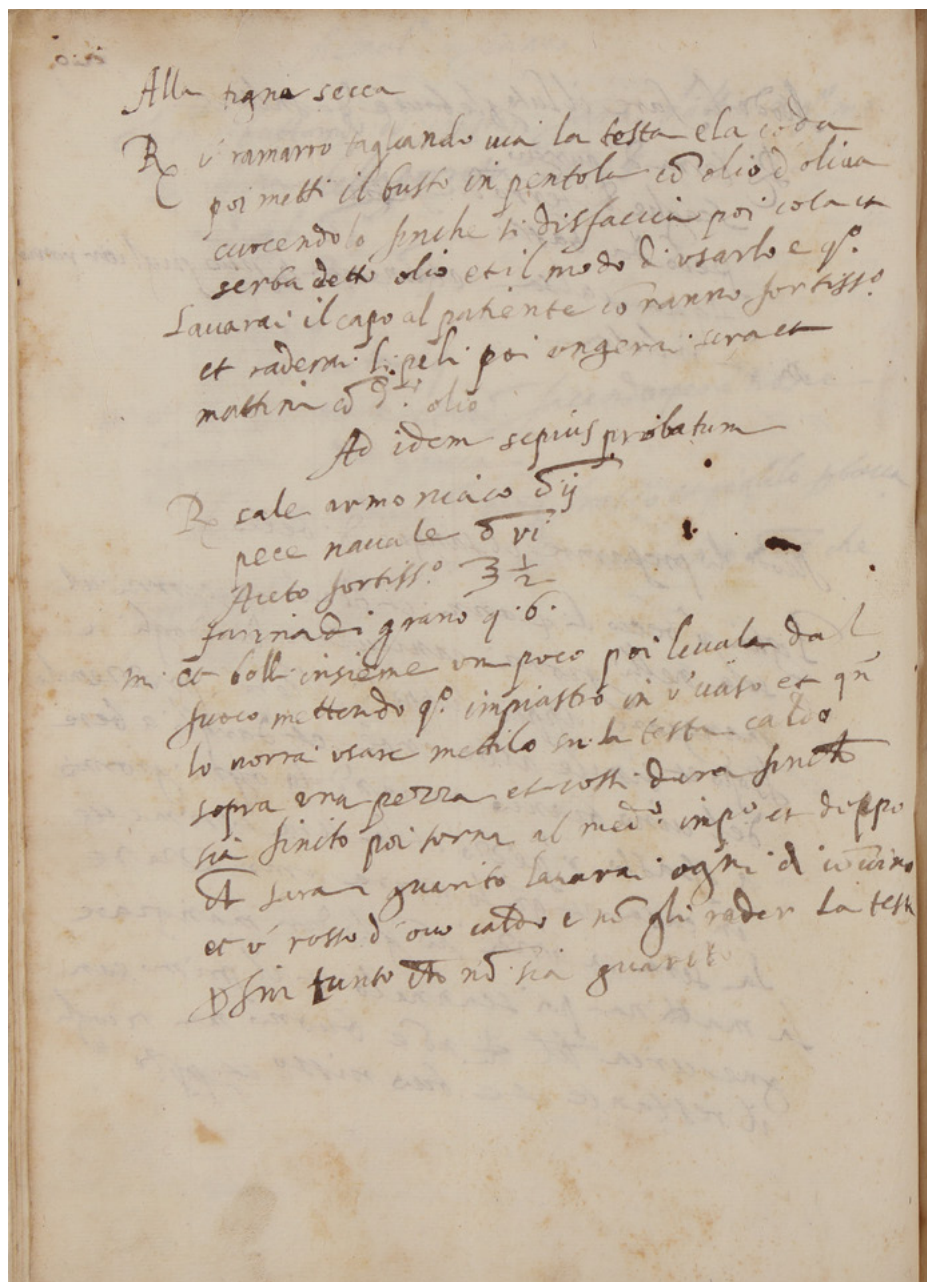


Fig. 11. BNCF, Magliabechiano XV 142, f. 20v. Italian recipe followed by a *titulus* in Latin. Courtesy of the Biblioteca Nazionale Centrale di Firenze, Ministero della Cultura.

Terra sigillata

Sangue di drago (an p. eg.)

Bolarmenio

m. et subtilissime fiant pulveres et fiat cerotum S.A. et impongasi (atur) super locum affectum.

Evidence of the code-mixing is the word “impongasi” in Italian, crossed out, and corrected as “imponatur” (Latin). This type of instance indicates an advanced convergence between the two codes, an actual overlap in functionality as regards both the status and register. From the user’s perspective, shifting from one linguistic code or variety to another implies a degree of competence in the languages involved and, therefore, requires a previous stage of bilingualism.¹²¹ Nardi’s capacity to self-correct and adjust are indicative of an advanced Latin literacy, as expected from a professional surgeon.

A final case of code-mixing reveals, by contrast, what seems to be a lower-literacy practitioner who sometimes merges both registers. Unlike Nardi, the Veronese surgeon compiling manuscript C, who in most cases keeps Latin and the vernacular separate, occasionally produces a macaronic Latin-vernacular.¹²² A case in point is the list of astrological correspondences of certain plants discussed above.¹²³ (Fig. 12) Likely an impromptu and partial translation of a Latin source, the scribe fails to fully adapt the original to the Italian (both morphologically and syntactically) and produces a hybrid discourse combining elements of both languages. This hybrid language appears, for example, in the entries below:

Lune est herba peonia et quando la luna cresse questa cresse e anchora quando la luna descesse questa descesse et vale contra epileisia et demonum et terzianam

Jovis est herba eupatorium vel agrimonia vel petalasilus: valet contra litragia et desenteria colicam.¹²⁴

These examples offer a snapshot of the social and educational range of practicing surgeons, many of whom operated across different levels of society and within a variety of guild structures and public institutions, in both urban and rural settings. This diversity points to a profession situated within a diglossic, if not multilingual, world and challenges the rigid professional and artisanal divide traditionally ascribed to surgery. As the language of these manuscripts demonstrates, the distinction was not between discrete hierarchical niches

¹²¹ See Crespo and Moskowich, “Latin Forms in Vernacular Scientific Writing,” 52.

¹²² Wellcome MS 174, ff. 24r, 56v–58r.

¹²³ Wellcome MS 174, f. 57r.

¹²⁴ See traces of Latin cases (genitive: “Lune”; accusative: “tertianam” / “colicam”); verbs (“est” / “valet”); conjunctions (“et” / “vel”) alongside vernacular forms (“quando la luna cresse” / “vale contra epileisia,” etc.)

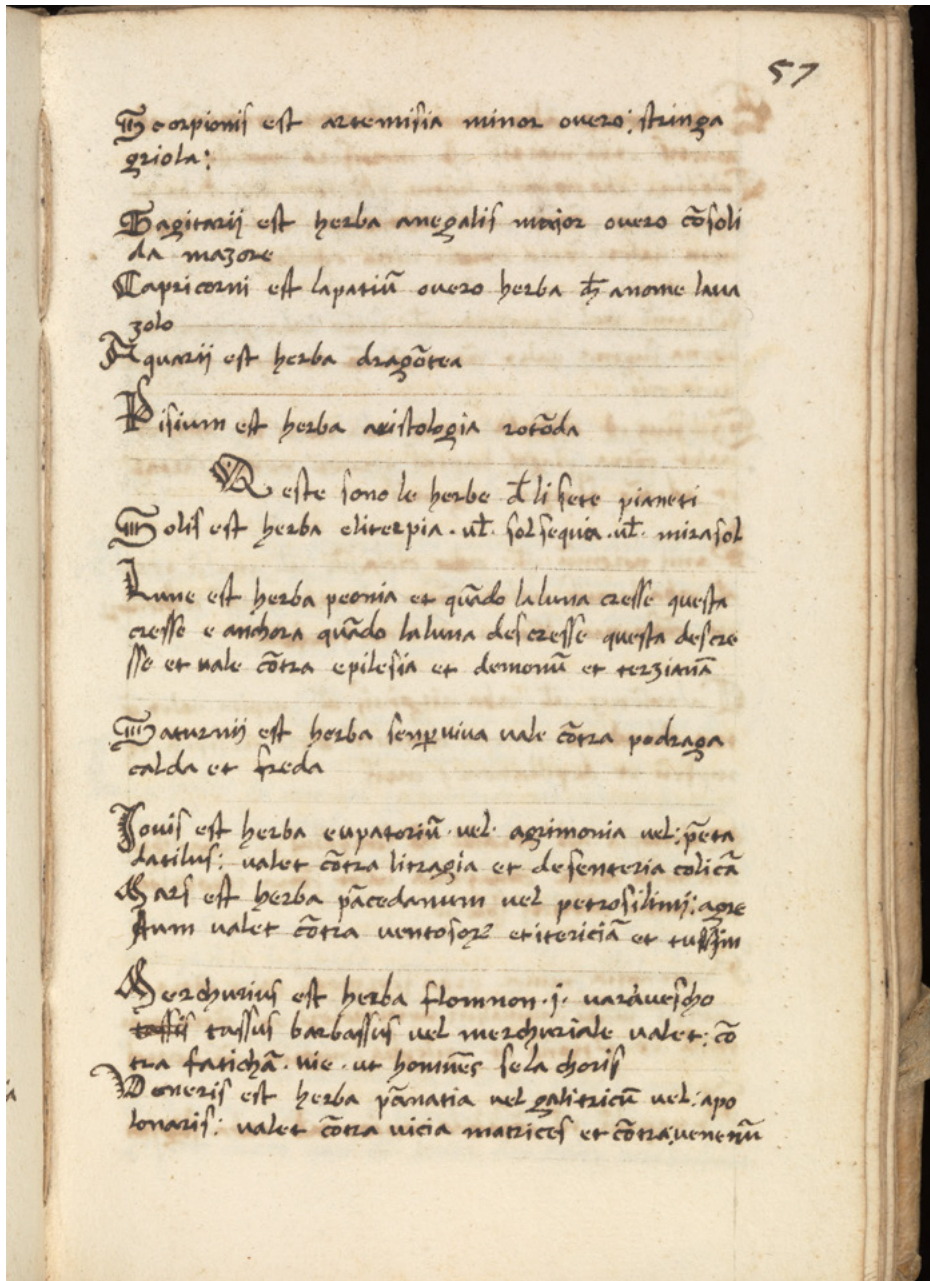


Fig. 12. Wellcome Library, MS 174, f. 56v. Astro-botanical section connecting the properties of herbs to zodiacal signs and planets. Courtesy of the Wellcome Library.

but rather involved fluctuating degrees of literacy, practical training, formal instruction, and experience, combined in highly idiosyncratic ways.

Conclusion

This study focuses on three areas that scholarship on early modern surgery has only recently brought to the fore.¹²⁵ First, it places medication and pharmaceutical knowledge at the heart of the surgeons' practice – an aspect that has often been obscured by the conventional distinction between interventions on the external and internal parts of the body imposed by the structures of medical colleges and guilds.¹²⁶ Second, it examines the porosity between different modes of surgical knowledge: on the one hand, "learning by doing," associated with craft and artisanal education, oral transmission, and the vernacular; on the other, institutional forms of teaching in universities, associated with writing, learned literature and, above all, Latin.¹²⁷ Third, it considers the status and circulation of surgeons' manuscript books and recipe collections, which were produced, used, and transmitted across generations but have barely survived. These books brought together practical experience, medical and pharmaceutical knowledge, and personal information about their authors' lives and professional activities, thereby challenging clear-cut distinctions between practical manuals, learned medical texts, and personal records.

The surveyed manuscripts provide a variegated picture of early modern surgical practice in northern Italy, shedding light on actual knowledge-in-use across a diverse category of practitioners. Medication emerges as a particularly crucial area of surgical activity, and the recording of recipes is perhaps the best-represented feature of the corpus. Yet their number, distribution, and organizational criteria vary considerably, depending on the pragmatic function of each book. Manuscripts A and C, for example, are fundamentally recipe collections, whereas the others, besides recording remedies, perform additional functions, such as documenting patients and treatments, transmitting surgical literature, and recording personal observations and miscellaneous information. As a whole, these texts perform overlapping functions to varying degrees: (1) as encyclopaedic repositories of learned or empirical knowledge (memory); (2) as platforms for experimentation, in which different strands of medical knowledge are combined; and (3) as documentation of

¹²⁵ On some of these new directions, see Donato, Leong, and Taape, "Introduction," 3–7.

¹²⁶ As this essay was under review, similar conclusions have been drawn independently by Stolberg, "Surgical Training and Practice," 84–86 (for Germany) and Cavallo, "Learning to Dress Wounds," 58, 67–68 (for Turin) in a recent publication. This essay provides yet further evidence for fifteenth and sixteenth-century Tuscany. On the notion of "surfaces" of the body and the dichotomy between external and internal, see Savoia, *Corpi, pratiche e modelli cognitive*.

¹²⁷ On this divide between "learned" and "artisanal" approaches in history of surgery, see Donato, Leong, and Taape, "Introduction: Learning to Cut and Cutting to Learn," 3.

actual praxis, closely tied to the practical application of medication and healing.

The remedies recorded are, as expected, primarily oriented toward the external treatment of the body, reflecting the surgeon's practice, but also extend to more general medicine of the whole body in some cases. Significant differences emerge. Nardi's casebook, for example, attests to his role as a surgeon in the *medicheria* of Bonifazio's hospital, with therapies focused on the treatment of wounds, lacerations, and other external ailments, and characterized by a predominance of waxes, unguents, plasters, and oils. By contrast, other cases examined here display a wider therapeutic repertoire, including incantations (Manuscript A) and iatromathematics or medical astrology (Manuscripts C and D), suggesting that the barber-surgeon's role often encompassed first-aid cures, treatment of common diseases, and general medicine also grounded in popular medical practices.

In institutional settings – most notably Nardi's casebook – remedies closely follow the remedy-type approach typical of official formularies and printed pharmaceutical literature, thus aligning more closely with medical orthodoxy. However, unlike printed pharmacopeias, the emphasis in recording remedies is placed on practical “how-to” instructions, often implying customization, simplification, or variation from standard formulas. Other manuscripts, by contrast, organize remedies according to disease, symptom, body part, or therapeutic action, in keeping with more traditional forms of healing that place the patient, rather than the production of standardized pharmaceutical forms, at the center of medical practice. Whatever the particularities of individual manuscripts, pharmaceutical knowledge and practice emerge as a core component of the surgical profession. Although the evidence remains incomplete, it is likely that the preparation of remedies was considered a core surgical competence and formed part of surgical training, as evidence from outside Italy suggests.

The sociodemographic contours of surgery are also well mapped in the corpus. The evidence reveals the broad social spectrum and range of practitioners encompassed by the category of “surgery” in the early modern Tuscany. This spectrum ranges from licensed, university-trained physicians – most notably the authors of manuscripts B and E, who display a strong command of Latin and of the surgical medical literature – to barber-surgeons (the owner of A and D) or practitioners with modest or limited institutionalized training (the author of C). This variety confirms the porosity of the discipline and cross-pollination mechanisms underscored by recent studies.

In a similar vein, the linguistic features of these texts further reveal the surgeons' varying levels of education and social positioning. The manuscripts thus range from purely vernacular texts – often kept as *ricordanze* by rural barber-surgeons – to largely vernacular works that incorporate occasional Latin sections or glosses, and, at the other end, to texts produced by university-trained physicians who demonstrate a strong command of both linguistic registers and the ability to combine or alternate between them. However, overlaps and contamination blur the traditional distinctions between learned and artisanal do-

mains, featuring individuals often operating in a diglossic context with varying degrees of education and access to Latin and/or vernacular medical literature.

The more complex question of what genre of literature texts like the ones in our sample belong to, and whether a single label can encompass such variety, remains unresolved. Nevertheless, an *instrumental* dimension emerges consistently. Like tonsils, razors, and plasters, these texts were part of the surgeons' professional toolkit – a *vade mecum* for use. Shorn of the pretense of public authorship and ostentatious erudition of surgical casebooks and printed works, these modest books served the crucial function of recording the private secrets of a practice, often within close-knit family or apprenticeship networks. Whether in the form of closed, definitive collections treasured for immediate and future reference, or as open, miscellaneous records by multiple hands over time, these manuscripts stand as a rich – and quite exceptional – testament to early modern surgical practice.

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