

Michael Stolberg

**Learned Physicians and Everyday Medical Practice in the Renaissance**



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Translated by  
Logan Kennedy and Leonhard Unglaub

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# Introduction

This book has a protagonist most readers will likely never have heard of. His name is Georg Handsch. He was born in 1529 in Leipa, today's Česka Lipa, a small prosperous town approximately eighty kilometers north of Prague.<sup>1</sup> He would return to this town shortly before his death in February of 1578. On his life's journey, which led him from Leipa to Goldberg, Prague, Padua, and finally Innsbruck, he collected a number of achievements. He studied medicine in Padua and earned his doctoral degree in Ferrara. Though not as their equal, he was in the company of some of the famous scholars and physicians of his time, including Matthaeus Collinus, the figure-head of the Bohemian humanism, and the well-known physician and botanist Pietro Andrea Mattioli. In the end, probably thanks to the advocacy of Mattioli, he gained the position of court physician for the Habsburg Archduke Ferdinand II.

Handsch remains a largely unknown figure, even among medical historians.<sup>2</sup> Apart from his German translation of Mattioli's famous work on medicinal plants,<sup>3</sup> he did not publish a single book, and even this translation was soon to be replaced by a new German edition put out by Joachim Camerarius.<sup>4</sup> No important medical discovery and no exciting new theory is connected with his name – not even his portrait has survived. In all his life, he was not able to establish a lucrative practice of his own nor a household. Even his appointment as a physician at the Habsburg court in Ambras near Innsbruck was less glorious than one might assume. By contemporary standards, the court was of moderate size (see Fig. 1).<sup>5</sup> While renowned physicians at the time were able to acquire considerable wealth, Handsch was denied such fortune. He never married and never owned his own home, living as a tenant or guest in the houses of strangers all his life. When he died, his total monetary assets amounted to only about 600 gulden. Other physicians earned this sum, and sometimes a lot more, in a year.<sup>6</sup>

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<sup>1</sup> On the inside of the book cover of one of his notebooks (Cod. 9671) Handsch gave the date of his birth as 20 March 1529; on Leipa, its history, and the local archival documentation (which was largely destroyed by fire) see Schober/Neder, *Sechshundertjahrfeier* (1929); Bienert, *Böhm[isch] Leipa* ([around 1937]).

<sup>2</sup> For example, Josef Vinař, in his survey of Czech medical history, refers to Handsch in passing only as the translator of Mattioli's herbal (Vinař, *Obrazy* (1959), p. 111); Hlaváčková/ Svobodný, *Dějiny lékařství* (2004) do not mention him at all.

<sup>3</sup> Mattioli, *Commentarii* (1554); Mattioli, *New Kreutterbuch* (1563).

<sup>4</sup> Mattioli, *Kreutterbuch* (1586).

<sup>5</sup> Hirn, *Ferdinand II.* (1887), p. 467.

<sup>6</sup> Letter by Jakob Schrenck von Notzing, 15 May 1579. According to the calculations by the archducal treasurer, Handsch bequeathed 592 fl. to his heirs. From this money some debts in



**Fig. 1:** Joris Hoefnagel, Innsbruck with the castle of Ambras (after Alexander Colin), in: *Civitates Orbis Terrarum*, part 5, Cologne 1598, n°58.

At this point, the reader may wonder: what could justify putting this clearly rather insignificant physician into the center of a monograph – and a rather voluminous one, for that matter? The question is valid but it already holds part of the answer: the major works, discoveries and theories of the leading medical authorities in the Renaissance have been quite thoroughly examined. Nancy Siraisi, Ian Maclean, Katherine Park, Jerome Bylebyl, Vivian Nutton, and Andrew Wear, to mention only some central authors, have published valuable studies: about the genesis and reception of individual ancient texts and authors, about the work of outstanding physicians and anatomists, and about the great theoretical debates of the period.<sup>7</sup> However, a perusal of the relevant literature also reveals a serious research gap: our knowledge about the working life of ordinary physicians, about their practice and experiences is very limited. We remain largely in the dark about the ways in which they applied the theoretical knowledge we find in the

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Innsbruck would still have to be paid and the value of Handsch's library had to be added. Furthermore, according to Handsch's will he owned several cups made of silver or covered with gold, clothes and bedding and had inherited half of his father's house in Leipa.

<sup>7</sup> See the bibliography.

publications of a small elite of leading authors in their daily work at the sick-bed. Hardly any research has been done on how they explained and treated the most commonly diagnosed diseases and on their day-by-day interactions with their patients and with their competitors.<sup>8</sup>

Not least of all, this is due to the lack of suitable sources. It is only in rough outlines that we can reconstruct the working life of physicians from the medical publications of the time. And as opposed to later periods, personal notes, diaries, practice journals and similar sources that could give us more detailed insights into physicians' everyday medical practice during this period are scarce.

This brings us to the central reason for making Georg Handsch, as historically insignificant as he may be, the protagonist of this book: Handsch liked to write. He wrote a lot – a whole lot in fact – and much of what he wrote has survived. Close to thirty manuscript volumes from his pen, some of them counting more than a thousand pages, have been preserved in the Austrian National Library in Vienna.<sup>9</sup> Handsch's *Nachlass* comprises a broad spectrum of writings, ranging from an unpublished, multi-volume *Historia animalium* to the draft for a *Compendium medicinae*, dated 1558,<sup>10</sup> to a compilation of selected letters by his hand. A number of personal notebooks about the study of medicine and medical practice stand out among his manuscripts, however. On more than 4,000 pages, he wrote about all kinds of things he deemed noteworthy and worth remembering. Notes on lectures and on anatomical dissections he had

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**8** Even Laurence Brockliss and Colin Jones in their magisterial reconstruction of the “medical world of early modern France” had to limit themselves to scarce anecdotal evidence when it came to the physicians' ordinary medical practice and their interactions with patients and their families, in this early period (Brockliss/Jones, *Medical world* (1997), esp. pp. 284–344).

**9** Codd. 9550, 9607, 9650 9666, 9671, 9821, 11006, 11130, 11141–3, 11153, 11158, 11183, 11200, 11204–11208, 11210, 11226, 11231, 11238–40 and 11251; in addition, Handsch owned student notes on Augustinus Schurff's lectures in Wittenberg in 1537 (Cod. 11228). In a supplication to the Archduke, Handsch's last servant Matheus Pärtl also mentioned two notebooks bound in green parchment which Handsch left behind in Bohemia, i.e. presumably in Leipa; according to Pärtl, they offered an “extract” from the other notebooks and Handsch valued them highly (Tiroler Landesarchiv Innsbruck, Ferdinanda, supplication, not dated but with an administrative note referring to 19 June 1578). It seems that these two notebooks are lost.

**10** Cod. 11208; the title on the cover reads “Compendium medicum me autore”. Handsch added a short: “Compositus est hic liber a me Doct. Georgio Handschio, Pragae, Anno 1558 ad informationem M. Georgii a Sudetis”. Numerous corrections and the rather careless handwriting leave little doubt that it is a mere draft. In terms of content, the text is largely limited to dietetics, fevers and pharmaceuticals. Georgius Polenta a Sudetis was dean of the philosophical faculty in Prague in 1557/58 and later turned towards medicine (Kalina von Jätenstein, *Nachrichten*, vol. 1 (1818), pp. 48–52). It is not known whether he ever received such a compendium from Handsch.

witnessed as a student are found next to entries relating diagnostic and therapeutic observations and experiences. Without any transition, the remarks of medical colleagues about the healing power of certain plants or the value of particular diagnostic signs are followed by notes about things he heard from barber-surgeons and lay healers or from patients and other laypeople. Not least of all, Handsch described countless clinical cases that his teachers in Prague and Padua dealt with as well as many others which he himself and his colleagues later treated in and around Prague and Innsbruck. In this way, his notebooks came to contain not only his own experiences and observations vis-à-vis his patients but also those of a whole array of famous and lesser-known colleagues around him.

For the most part, Handsch's entries are very short. Frequently they extend, at best, over half a dozen lines. Much more rarely, he went into some detail on certain topics or traced the course of a person's disease as it unfolded day by day. Some of his notebooks also contain striking other elements. In hundreds of entries, Handsch recorded verbatim, mostly in German, the terms and expressions used by physicians to explain a medical condition to patients and their families. And again and again, the notes give patients and their relatives a voice in the notes, relating their ideas about the disease process, their desires and demands, as well as their perception of the medical treatment.

What makes Handsch's notebooks all the more valuable is that they were clearly intended only for his personal use and not written with an eye to publication. Apart from several lectures he transcribed and his accounts of anatomical demonstrations, his entries are for the most part unsystematic and disorganized. Handsch simply wrote down, more or less on a daily basis it seems, what he heard and saw, learned and experienced as it happened. Some of it was clearly not intended for the eyes of others. With unsparing candor, he regularly referred to mistakes and errors he and his colleagues made in diagnosing and treating illnesses and in dealing with patients. Quite often, he even highlighted these entries in the margin, with words like "error" or "errores mei".<sup>11</sup> He also repeatedly mentioned his hematophobia: he could barely stand the sight of blood.<sup>12</sup> This was a problem for a doctor because carefully examining the blood from bloodlettings was an important and widely practiced diagnostic procedure in those days. He even described arousing sexual dreams in which he was with another man,<sup>13</sup> and occasionally he noted actual sexual encounters he had had with men.<sup>14</sup> At a

<sup>11</sup> E.g. Cod. 11183, fol. 70v, fol. 77v, fol. 176v and fol. 391v; Cod. 11205, fol. 333v.

<sup>12</sup> Cod. 11183, fol. 85r.

<sup>13</sup> Cod. 11205, fol. 481v, "attractationem iuvenilis membri ad meum et mihi exire sperma".

<sup>14</sup> Cod. 11183, fol. 59v: "Ter manuduxi cum Venceslao Sseliha, in Maio".

time when same-sex sexual contact was considered a serious sin and offence, he would have had to fear grave consequences if this had become known.

Handschr did not offer an explicit explanation of what drove him to fill one notebook after the other with many thousands of entries. Despite some very personal entries, it would be rather far-fetched to interpret them as evidence of the frequently invoked rise of the individual during the Renaissance period.<sup>15</sup> Handschr as a person – his view of the world, his social relationships or his creed – is not at the center of these records. Notes about medical observations and experiences, about things he heard and read during his studies, in his everyday work as a doctor and later in his encounters with patients and other professional healers predominate by far. It appears that the driving force behind Handschr's writing was a concrete, practical interest. His notes were meant to help him become a good and successful doctor. This emerges above all from the many detailed entries about different patients and their treatment and from his recurring attempts to derive general lessons from experiences with individual cases of illness. In their own way, as we will see, Handschr's notebooks also document the growing appreciation for empirical knowledge in sixteenth-century learned medicine.<sup>16</sup>

The fact that Handschr's notebooks have survived at all is thanks to a concurrence of circumstances, fortunate for historical research but less so for Handschr and his heirs. Having experienced "a severe weakness of the body" in 1576,<sup>17</sup> Handschr travelled from Innsbruck to his birthplace of Leipa in the winter of 1577–78, where he died on February 25, 1578.<sup>18</sup> Historical studies on Handschr have so far claimed that Handschr sold his library to Archduke Ferdinand II before he died,<sup>19</sup> but this is disproven by the surviving records. A mere eight days before his death, Handschr, while in Leipa, hundreds of miles from Innsbruck, stipulated in his will that his "Liberay" in Innsbruck be sold and the money divided up between his siblings and other named heirs.<sup>20</sup> Handschr did

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<sup>15</sup> Burckhardt, *Cultur* (1860), esp. pp. 131–170 (section 2, "Entwicklung des Individuums"); Burke, *Individuality* (1998).

<sup>16</sup> Stolberg, *Empiricism* (2013).

<sup>17</sup> Tiroler Landesarchiv Innsbruck, Kopialbuch Geschäft vom Hof, 1576, foll. 501r–502r.

<sup>18</sup> The date of Handschr's death emerges from a letter by the mayor of Leipa, Wolff Heubner, to Archduke Ferdinand II, 6 April 1579 (Tiroler Landesarchiv Innsbruck, Ferdinanda 164).

<sup>19</sup> Hirn, *Ferdinand II.*, vol. 1 (1885), pp. 362–3 and vol. 2 (1885), p. 440; Beer, *Philippine Welser* (1950), p. 86.

<sup>20</sup> Tiroler Landesarchiv Innsbruck, Ferdinanda 164, copy of Handschr's will, February 17. This passage is missing in the second will Handschr, which he wrote only a few days later, but he now bequeathed the "best" ten books from his "Lyberey" to a *studiosus* (ibid.); see also Panáček, *Testament* (2013), who only mentions this second will. Since Handschr not only left his

not sell his books and manuscripts to the Archduke. Documents from the archducal archives show that the Archduke took them for his library at Ambras Castle, paying half of their estimated value.<sup>21</sup> This also explains why Handsch's notebooks entered the archducal collection despite some of their very personal and compromising entries that were obviously not intended for the eyes of the ruler and his court. If Handsch had sold his books and manuscripts to the Archduke before travelling to Leipa, he could have easily separated the notebooks out.<sup>22</sup>

I discovered Handsch's notebooks while carrying out systematic research on early modern medical manuscripts in the Austrian National Library. A look at the older literature in the field quickly revealed, however, that the existence of these notebooks had long been known to historians who were researching the court of Archduke Ferdinand II. More than a century ago, Josef Hirn praised them as a rich source "for knowledge about the culture and courtly life of their time".<sup>23</sup> For good reason, no one had systematically and comprehensively read and analyzed the entire corpus, however. The handwriting of Handsch is relatively tidy and most of it is quite legible to the trained eye (see Fig. 2). His Latin is fairly easy to read and largely free of error. The abbreviations and ligatures he used, like most scholars in his day, to represent doubled letters, conjunctions, and above all common endings such as "-orum" and "-entes" usually can be decoded reliably. Only some of the proper nouns and some of the numerous marginal notes he added later pose considerable paleographic challenges. And yet, simply reading the far more than 4,000 pages of notes, along with the

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books behind, in Innsbruck, but also his clothes and bedding he clearly intended to return to Innsbruck and had no reason to sell his library before his departure.

<sup>21</sup> Tiroler Landesarchiv Innsbruck, Ferdinandea 164, letter from Jakob Schrenck von Notzing to Archduke Ferdinand II, dated 16 May 1579; according to Schrenck, the value of the books had been estimated at more than 200 gulden and the Archduke had "approved" to pay 100 gulden for them, which Schrenck now listed as part of Handsch's estate. Handsch, Schrenck added, had not been able to enjoy the allowance of 200 gulden the Archduke had promised him for the time after his retirement as a court physician. According to Hirn (Hirn, Ferdinand II. (1887), p. 440 (note)), the Archduke usually had the rooms sealed when someone connected to the court died and made Schrenck come and select the books he wanted to acquire for his archducal library; on Schrenck see Heigel, Schrenck von Notzing (1891).

<sup>22</sup> After Ferdinand's death, his son Karl sold the library to Emperor Rudolf II. In 1665, Emperor Leopold I. ordered a large part of the books and manuscripts, including those of Handsch, to be brought from Ambras to Vienna (Purš, Bibliothek (2017); Lambeck, *Commentarium liber*, vol. 2 (1769), coll. 697–704, col. 926, col. 930 and col. 933).

<sup>23</sup> Hirn, *Erzherzog Ferdinand II.* (1885), p. 363; in his biography of Ferdinand II, Hirn repeatedly mentions Handsch and uses his notebooks as a source but does not provide precise references; according to his own account, Hirn drew primarily from Cod. 11183 and Cod. 11204.



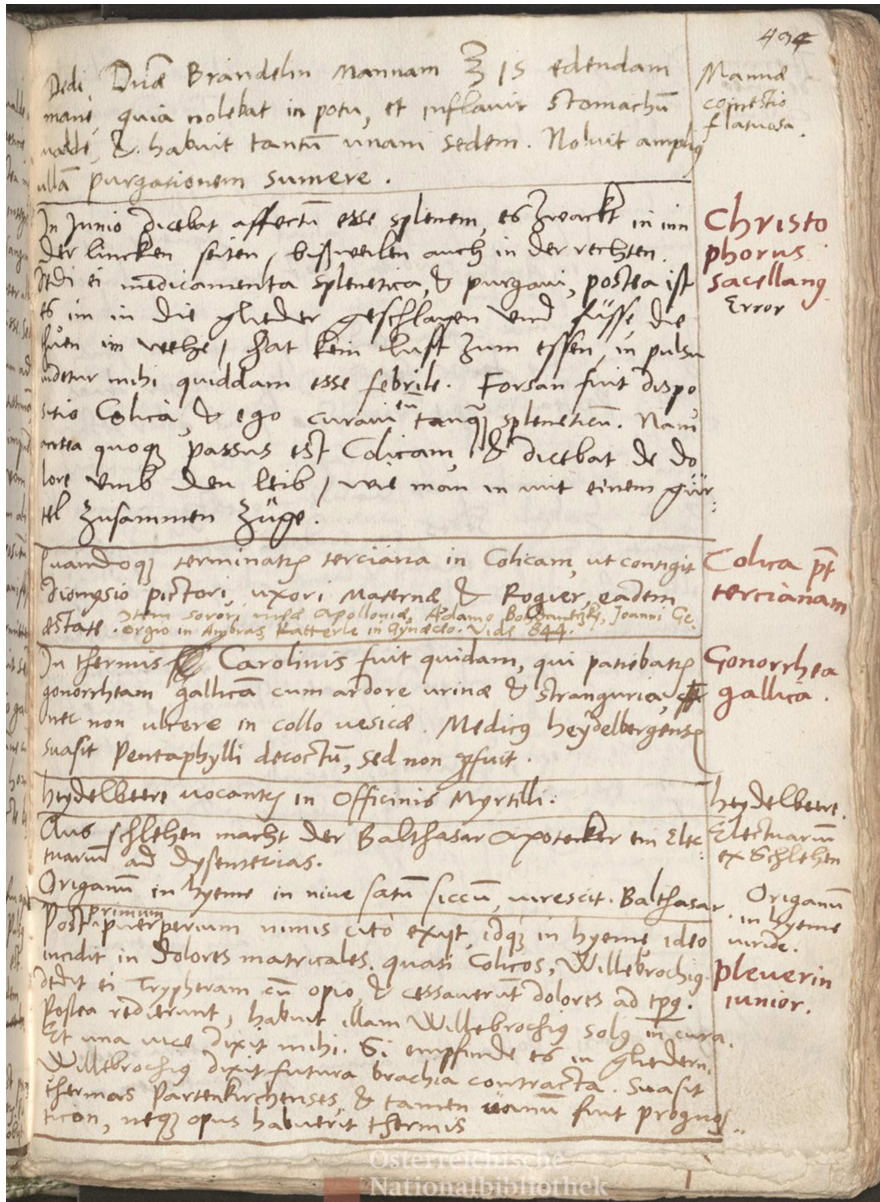


Fig. 2: Page from one of Georg Handsch's notebooks (Österreichische Nationalbibliothek, Vienna, Cod. 11183, fol. 434r).

remaining extensive handwritten texts from Handsch's *Nachlass*, is inevitably very time-consuming, even for someone who is well-versed in the material. The benefit, meanwhile, is anything but certain. As mentioned, Handsch's notes are often a motley jumble of more or less brief entries. Someone who wishes to make reliable generalizing statements about what Handsch knew or experienced concerning a particular illness or medication, for instance, would have to do what I did and read the notebooks in their entirety, collating dozens, or in some cases even hundreds, of entries made by Handsch on different occasions about the same subject.

For historians, however, who are interested not only in the great medical theories but also in their application – who seek to uncover the everyday experience and practice of Renaissance physicians, their life-world and self-conception, their relationships and interactions with patients and their families, with less learned medical practitioners, and with the medical culture in general of early modern learned medicine in all its diversity – there is more than a great challenge to be found in this colorful miscellany. The variety, the concreteness, and the closeness to everyday life are also what makes this source uniquely valuable and appealing. Handsch's notebooks give a wealth of insights into the world of learned medicine and show how young men were introduced to it and they paint a uniquely multi-faceted picture of everyday medical practice in the town and in the country, of the encounters between physicians and patients, of physicians' and lay-people's ideas about illness and how they approached it in everyday, practical ways. This picture is far richer and more detailed than that offered by the mostly printed sources on which most historical research in this area has so far had to rely.

So Georg Handsch and his singular notebooks are at the center of this book. This is definitely not a biography, however. In passing, I will also sketch out Handsch's professional career and fill in some details about his life.<sup>24</sup> Yet, my main aim is a different one. Taking Handsch's uniquely detailed notes as my starting point and drawing on a wide range of other handwritten and printed

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<sup>24</sup> Cf. the biographical sketches by Kalina von Jätenstein, *Nachrichten*, vol. 2 (1819), pp. 28–43; d'Elvert, *Geschichte* (1868), pp. 60f.; Wolkan, *Geschichte* (1894), pp. 124–133; Wolkan, Handsch (1904); Senfelder, Georg Handsch (1901); Maiwald, *Geschichte* (1904), pp. 23–25; Rudel, *Beiträge* (1925), pp. 74–77; Smolka/Vaculínová, Georg Handsch (2010); Lucie Storchová, Georg Handsch (2020). Handsch is also mentioned in works on Archduke Ferdinand II and his court in Ambras (Hirn, *Erzherzog Ferdinand II.* (1885); Forcher, *Erzherzog Ferdinand II.* (2017); Haag/Sandbichler, *Ferdinand II.* (2017).



sources, I intend to piece together the medical world of learned physicians in the Renaissance in its manifold facets.<sup>25</sup>

In methodological terms, this book links micro-historical and historical anthropological perspectives with praxeological approaches. Micro-history and historical anthropology – these are two largely overlapping approaches – have become established and widely acknowledged over the past decades. Their emphasis is on the life and culture of “ordinary people”, of the “common folks”. Seeking to reconstruct historical realities in all their diversity, however, with the explicit inclusion of the perspective of contemporary actors, researchers have long applied micro-history and historical anthropology to social, political, and intellectual elites as well.<sup>26</sup> In a number of essays, Gadi Algazi, for example, has addressed the everyday life of late medieval and early modern scholars, which included academically trained physicians.<sup>27</sup> As the example of Algazi’s work shows, these kinds of analyses may offer much more than a vivid description of everyday life. They also bring to light important insights about the learned “habitus”. I use this concept in the sense given to it by Pierre Bourdieu, who defined it as an ensemble of attitudes, norms, and behavioral patterns acquired in the course of socialization that find expression in everyday life and in turn also shape it.<sup>28</sup>

Praxeological approaches have garnered a great deal of attention in recent sociology and historiography and in areas far beyond them. They are rooted in the insight that societal structures and configurations as much as social, gender, professional and confessional identities are to a high degree created, reaffirmed, and changed through more or less routinized everyday practices about which only a limited degree of reflection takes place and which are sometimes literally incorporated or “inscribed” into the body. A central premise of these approaches is that “practical knowledge” largely follows an inherent, informal logic and needs to prove its worth time and again as it is confronted with the materiality of

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<sup>25</sup> I use the term “Renaissance” in a rather pragmatic fashion only, to roughly indicate the time period and because it evokes associations with phenomena such as humanism, the international republic of letters and the new anatomy which are central to my analysis. For my purposes, I can leave the hotly debated question aside whether it makes sense to talk of a “Renaissance” in the literal sense of the word (for some refreshing remarks on this issue see Starn, *Postmodern Renaissance* (2007)). A comprehensive account of the world of the Renaissance in its manifold aspects can be found in Roeck, *Morgen der Welt* (2017).

<sup>26</sup> Tanner, *Historische Anthropologie* (2004).

<sup>27</sup> Algazi, *Food* (2002); Algazi, *Scholars* (2003); Algazi, *Geistesabwesenheit* (2007); Algazi, *Habitus* (2010); see also Füssel, *Akademische Lebenswelt* (2007).

<sup>28</sup> Bourdieu, *Esquisse* (1972); cf. Raphael, *Habitus* (2004).

bodies and artefacts.<sup>29</sup> As a counterweight to the long-dominant work on the great discoveries and the theoretical conceptions of leading protagonists, approaches centered on praxis quickly acquired special significance in the history of science and the history of medicine. Here, these approaches have contributed crucially to new insights on the relation between theory and practice and have served to highlight differences and contradictions between them.

As my analysis of the interpretation, diagnosis, and treatment of illness in the Renaissance will show, a closer look at everyday practice forces us to call into question a range of well-established truths. Generations of medical historians, for example, claimed that early modern physicians rarely touched their patients and certainly did not do a systematic physical exam with their hands. It is true that physical exams are hardly mentioned in the medical textbooks of the time. Yet, the sources that describe everyday practice that I present here show clearly that the manual examination of the abdomen was a routine medical practice in the sixteenth century and that some physicians even performed manual vaginal exams on patients. To give another example from medical diagnostics: those who take at face value the copious polemical literature written by learned physicians who railed against diagnosing diseases from urine will find that this criticism was aimed chiefly at the numerous lay healers who relied, sometimes exclusively, on uroscopy. Uroscopy as such continued to be paramount also in the everyday practice of learned physicians.

In the case of disease concepts, the discrepancies are more striking still and have far-reaching implications for our understanding of early modern medicine as a whole. Not only in the media and in popular writings for a wider lay audience but even among renowned experts of early modern medicine, we still encounter the widespread notion that early modern medicine attributed diseases above all to an imbalance of the four natural humors (yellow and black bile, blood, and phlegm) and/or of their primary qualities (cold, hot, dry, and moist) and that therapy aimed at restoring a balance in the body. In fact, this notion is found in the theoretical writings of Galenic physicians, while the Paracelsians vehemently criticized the Galenists' alleged fixation on the four humors. Yet, when we turn to sources that document the diagnosis and treatment of specific cases in the everyday medical practice of the sixteenth century, we gain a completely different picture. Hardly ever were diseases explained by an imbalance of the qualities or the natural humors in the body. There was a different,

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<sup>29</sup> On the theoretical foundations see Schatzki/Knorr/von Savigny, *Practice turn* (2001); Reckwitz, *Grundelemente* (2003); Alkemeyer, *Subjektivierung* (2013); some exemplary applications of praxeological theory in writings on early modern history can be found in Alkemeyer/Budde/Freist, *Selbst-Bildungen* (2013) and in Brendecke, *Praktiken* (2015).

widely prevalent explanatory model: the vast majority of illnesses were attributed to more or less specific, impure, spoiled, foul or otherwise harmful morbid matter, which, consequently, had to be targeted specifically and evacuated.

Sources that describe everyday practice also bring to light remarkable differences between theory and praxis – in this case, more precisely, between norm and reality – when it comes to medical ethics and ideas about the professional duties of a physician. For example, the necessity of trying to help all patients equally, as proclaimed by Christian physicians, contrasted in practice with the great differences in the diagnostic and therapeutic effort made by learned physicians depending on how wealthy or poor their patients were. The widely acknowledged obligation of helping incurably ill and dying patients, to cite another example, was quite often put to the test in everyday practice when physicians, foreseeing the unfavorable course of an illness, had to fear for their reputation as successful practitioners – and sometimes preferred to leave patients to their fate.

As far as we know today, and considering the period in which they were written, the notes Handsch wrote are utterly unique with respect to how extensive, rich in detail, and close to everyday life and practice they were. I will be drawing on them throughout this book. I will complement my analysis of Handsch's notebooks extensively, however, with other handwritten and printed sources from this period. They will add to the picture painted by Handsch and will bring in some nuance where necessary and they will make it possible to assess to what degree the practice and experiences of Handsch and the physicians around him can be taken to be representative – for physicians in the German-speaking world or indeed for learned Renaissance physicians in general. A major and highly informative source for the physicians' training and for the ways in which they were introduced to the intellectual world of learned medicine are student notebooks. They have survived in substantial numbers, in handwritten and occasionally printed form and I will quote from a number of them. More rarely physicians' notebooks and practice journals are extant and provide insights into the everyday life of physicians and their clientele, and the diagnostic as well as therapeutic practice of other medical practitioners.<sup>30</sup> The extensive practice journal of the Zwickau town physician Hiob Finzel in particular will cross our paths more than a few times.<sup>31</sup> I will, of course, also take recourse to printed medical textbooks and treatises. In addition, we can gain valuable

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<sup>30</sup> Historical overview in Hess/Schlegelmilch, *Cornucopia* (2016).

<sup>31</sup> Ratschulbibliothek Zwickau, Ms. QQQQ1, Ms. QQQQ1a and Ms. QQQQ1b; cf. Stolberg, *A sixteenth-century physician* (2019).

clues about many aspects of the medical lifeworld from physicians' correspondence, from which we learn about such things as physicians' activities outside medicine, their relationships with other scholars, the circumstances of their employment with rulers and municipal authorities, and about their private living conditions. Thousands of such letters have survived from the sixteenth century. At the Institut für Geschichte der Medizin in Würzburg, Germany, a long-term project has focused on early modern physicians' correspondence since 2009. The project has established an online database which currently offers free access to the data of more than 50,000 letters, written to and by physicians, from approximately 500 archives and libraries in Germany and abroad and for several thousand letters a detailed summary of the content as well. About 23,000 of these letters go back to the 16th-century and their number is expected to grow further over the coming years.<sup>32</sup> Based on these kinds of supplementary sources, I will also address subjects that do not figure prominently in Handsch's notes. For example, I will discuss the significance of holding the office of a salaried town physician. Handsch never held this office but it was an important stepping stone in the life of many physicians and a crucial factor for the spread and the establishment of learned medicine.

With its focus on real-life, everyday medical practice, this book closely connects to previous work undertaken by an international research group, funded by the German Research Foundation DFG, in which I had the honor of acting as the spokesperson.<sup>33</sup> In a number of research projects, each focusing on a different, well-documented case study, the twenty participating historians studied the history of medical practice in the German-speaking world between the seventeenth and the nineteenth centuries. Using practice journals as the major source and drawing on various additional sources, they looked at eight individual practices. Moreover, on the basis of these case studies they embarked on a collective, comparative analysis. In various coauthored chapters they surveyed the changes and developments that took place over time, with respect to the physicians' typical clientele, the doctor-patient relationship, the conceptions of illness that informed physicians' actions, diagnostic and therapeutic practices, the significance of the social, political, and confessional context, and many

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<sup>32</sup> See [www.aerztebriefe.de](http://www.aerztebriefe.de). This project is funded by the Union of the German Academies within the so-called "Akademienprogramm" and run under the auspices of the Bayerische Akademie der Wissenschaften in Munich.

<sup>33</sup> For details see [https://www.medizingeschichte.uni-wuerzburg.de/aerztliche\\_praxis/index.html](https://www.medizingeschichte.uni-wuerzburg.de/aerztliche_praxis/index.html); the undertaking was initiated by Maria Ruisinger, now director of the Deutsche Medizin-historischen Museum in Ingolstadt, and by Martin Dinges, Stuttgart, who also served as the vice-spokesperson.

other aspects of everyday medical practice.<sup>34</sup> The oldest practice examined in this context was that of Johannes Magirus in Berlin and Zerbst during the 1650s and 1660s.<sup>35</sup> In this book, I will not only take up several central questions we approached in this collective undertaking but also close the significant chronological gap in the study of early modern learned medical practice that remained for the time prior to 1650.

This book is divided into three parts. Following an introductory sketch of the figure of the “learned” physician as it developed over time, Part I offers an overview of the medical training that gave prospective physicians the rich knowledge and versatile skills that they would later put to use when treating their patients. The medical training in Padua, where Handsch – like many aspiring physicians from north of the Alps – studied, is given special attention here. The focus is not only on the lectures the medical students attended, the books they read, and the anatomical demonstrations and clinical case discussions they were allowed to attend. I will also and above all seek to reconstruct the intellectual world, the theories, and approaches with which these soon-to-be physicians familiarized themselves, which became second nature for them in the course of the years, and which they were expected to apply in their practice. I conclude this part with a discussion of the learned habitus which the future physicians acquired over many years before they entered the more narrow realm of medicine. I look at some of the characteristic humanist activities in which many physicians engaged and in which this habitus became manifest, ranging from poetry to historiography and the humanist practice of collecting and ordering excerpts in the form of *loci communes*.

Part II, the most extensive part, concerns actual medical practice in all its diversity: the diagnostic, preventative and therapeutic practices of physicians, the concepts and explanatory models on which they relied, as well as their understanding of central and widely diagnosed diseases. I will also give an in-depth description of the rise of empirical approaches in medical practice, of observational practices and sometimes experimental testing of the effects of medications, of the rise of medical casuistry, and of the practice of autopsy on deceased patients, which was already quite common in the sixteenth century.

This part of the book will necessarily be demanding for the reader. The world that we encounter here is foreign to us. Physicians and patients relied on

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<sup>34</sup> Dinges/ Jankrift/ Schlegelmilch/ Stolberg, Medical practice (2016).

<sup>35</sup> DFG-research project “Ärztliche Praxis und medizinisches Weltbild um 1650: Johannes Magirus (1615–1697)”; details under [https://www.medizingeschichte.uni-wuerzburg.de/aerztliche\\_praxis/projekt\\_stolberg.html](https://www.medizingeschichte.uni-wuerzburg.de/aerztliche_praxis/projekt_stolberg.html); for the results of this project see Schlegelmilch, Ärztliche Praxis (2018).

concepts and images of the human body and its illnesses that often have little in common with the way we see things today. It is vital, however, if we wish to gain a historical understanding of medical thinking and acting in the past and of the way patients experienced illness, that we engage with this foreign world and its inner logic the way cultural anthropologists do when exploring foreign cultures today. If we are to understand the explanatory power and longevity of early modern disease concepts, we need to put aside the familiar view towards “progress”, the search for things that were “already” known back then. From the perspective of cultural anthropology and the sociology of knowledge, medicine is a socio-cultural construct.<sup>36</sup> Medical practice is not successful only if healers share the theories and explanatory models of modern Western medicine. It suffices that the explanations of a given medical system are plausible and believable, that they give sick people an orientation accompanied by the promise of effective remedies. Disease concepts, as Leon Eisenberg encapsulated it years ago, are a means of creating reality and giving meaning to the experience of a chaotic world. Eisenberg here even speaks of a shared “mythopoesis” of doctor and patient.<sup>37</sup>

This is not to deny the reality of pathological phenomena. They are not mere figments of the imagination. Yet, which phenomena and changes we give attention to, how we interpret them, how we distinguish between different diseases, how we deal with them – all this is shaped to a high degree by culture with its specific conception of the world and the human being and by the disease concepts derived from it. Only when we make this overarching and shaping influence of culture our starting point can we understand the great diversity of medical systems and worldviews of the past and present, of which Western biomedicine is only one variant, albeit the by far most influential today. As bizarre, at times even absurd as some of the notions may strike us today, the disease concepts I will be presenting in Part II corresponded with the contemporaneous state of scientific knowledge. They satisfied the widely accepted criteria for methodologically sound, scientific insights. The diagnostic, prognostic, and therapeutic practices that were derived from these concepts were, according to the understanding at the time, rational.<sup>38</sup> Moreover, as we will see, these practices also seemed to prove their worth every day, over and over during medical practice: after all, most patients got better under the physicians’ treatment.

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<sup>36</sup> Byron, *Medicine* (1994); Harley, *Rhetoric* (1999); Helman, *Culture* (2007).

<sup>37</sup> Eisenberg, *Physician* (1981), p. 245.

<sup>38</sup> Harley, *Rhetoric* (1999), pp. 417f.

Part III is devoted to the physician's everyday practice, delving into the subject of medical clientele, into what it meant for the career of many physicians to gain employment as a town or court physician, and into the interactions and conflicts between physicians and their patients. I examine the relation between the medical notions and practices of physicians and those of laypeople, unearthing a remarkable openness of learned physicians toward lay ideas and practices. Subsequently, I consider the possible reasons why, in their everyday practice, the learned physicians of the Renaissance embraced the disease concepts and practices that were preferred by laypeople when, instead of attributing illness to an imbalance of the humors and qualities, they ascribed them to impure, raw, foreign, or unnatural substances in the body.

While I will be drawing on a fair range of sources the geographical focus of my analysis will be on the situation in the Holy Roman Empire and – they overlap to a large degree – in the German-speaking areas, including large territories that are part of present-day Switzerland, Austria, the Czech Republic and Poland. Because of the marked institutional and political differences within Europe in this domain, the chapters on town and court physicians and on bath masters and barber-surgeons will indeed almost exclusively look at this area. My analysis of the medical training of future physicians, in turn, will concentrate on the universities in Northern Italy, which were widely appreciated for their superior teaching also by students from the German-speaking areas, many of whom came, like Handsch, to study or complete their medical education there. Most other chapters in this book will also draw predominantly on Handsch's notebooks from his years in Bohemia, Northern Italy and Austria and on other sources from the German- and Italian-speaking areas. However, in order to arrive at a more complete and nuanced picture, I will also draw on extant historical scholarship and to some degree on sources from other parts of Europe. Regarding the bulk of my analysis, the physicians' humanist self-fashioning and their place in the republic of letters, the prevailing explanatory concepts and theories, the diagnostic and therapeutic practices to which they resorted in their everyday practice, their interactions with patients and families and the rise of empirical approaches in learned medicine, I have not found evidence for major differences. The world of learned medicine with Latin as its common language clearly was an international phenomenon. I therefore believe that large parts of my analysis can throw a light on the world of learned medicine in Renaissance Europe as a whole.

This book is a revised English edition of my "Gelehrte Medizin und ärztlicher Alltag in der Renaissance" that came out in 2020 with De Gruyter, in German. Most of the revisions sprang from additional, new sources, such as the extensive notes of an unidentified student or young physician who accompanied Benedetto Vittore in 1540s Bologna on his patient visits and the *consilia* of Jakob Horst,

which I have only recently found and/or analyzed in detail. Some chapters draw – at times quite generously – on papers that I have previously published. I have dealt with bedside teaching and anatomical instruction in Padua in “Teaching anatomy in post-Vesalian Padua. An analysis of student notes”, *Journal of medieval and early modern studies* 48 (2018), pp. 61–78, and in “Bedside teaching and the acquisition of practical skills in mid-sixteenth-century Padua”, *Journal of the history of medicine and allied sciences* 69 (2014), pp. 633–661. I have studied the humanist activities and aspirations of Handsch and other Renaissance physicians in “The many uses of writing. A humanist physician in sixteenth-century Prague”, in Andrew Mendelsohn, Annemarie Kinzelbach und Ruth Schilling (eds): *Civic medicine. Physician, polity, and pen in early modern Europe*. London 2019, pp. 67–87. The rise of empirical approaches in Renaissance medicine was the topic of “Empiricism in sixteenth-century medical practice. The notebooks of Georg Handsch”, *Early science and medicine* 18 (2013), pp. 487–516. In ““You have no good blood in your body”. Oral communication in sixteenth-century physicians’ medical practice”, *Medical history* 59 (2015), pp. 63–82, I have used Handsch’s extensive notes to reconstruct the ways in which Renaissance physicians explained diseases and their treatment to patients and relatives. “A sixteenth-century physician and his patients: The practice journal of Hiob Finzel, 1565–1589”, *Social history of medicine* 32 (2019), pp. 221–240, provides an in-depth analysis of the earliest extensive practice journal of *doctor medicinae* that is known to have survived from the sixteenth century. The interactions between physicians and patients stand at the center of my recent paper on “The doctor-patient relationship in the Renaissance”, *European journal for the history of medicine and health* 1 (2021), pp. 1–29, which also draws heavily on Handsch’s notes.

A final note on practical matters: To make original Latin quotations more legible, I have adapted them to modern usage with respect to capitalization, punctuation, and the use of “u”/“v” and “i”/“j”, rendering, for example, “vsus” as “usus” and “uaria” as “varia”. Especially when Handsch quotes vernacular expressions used by physicians or laypeople I often provide the original German wording in the notes for the benefit of readers who are familiar with the German language. These vernacular terms and expressions are frequently endowed with a semantic richness, with metaphorical connotations and etymological connections that cannot adequately be rendered in translation. References to manuscripts with the shelf mark “Cod.” without an indication of the holding institution refer to the manuscripts in the Austrian National Library in Vienna. References to letters written by or addressed to physicians that I have not analyzed personally but which I owe to the Würzburg database on Early Modern Physicians’ Letters ([www.aerztebriefe.de](http://www.aerztebriefe.de)) are provided in the footnotes, citing the URL and the author(s) of the respective detailed summary.



This book is the result of years of research. Completing it would have been difficult without the various kinds of support I received. My thanks go first of all to my colleagues and collaborators at the Institut für Geschichte der Medizin in Würzburg. They helped me carve out the time for the painstaking analysis of the sources and in particular of the thousands of pages of handwritten Latin notes. I also would like to thank the staff of the National Library in Vienna, for their help and support over all these years. Alexander Pyrges and Sabine Schlegelmilch have given me valuable critical feedback on a draft of this book. My special thanks go to the Historisches Kolleg in Munich and the Fritz Thyssen Foundation, who awarded me a Senior Fellowship in 2018/19, allowing me to spend a year in the marvelous surroundings of the Kaulbach Villa, focusing almost exclusively on this book.

I dedicate this book to my wife Jackie, to whom I owe more than I will ever be able to express in words.



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## **Part I: Entering the World of Learned Medicine**



# Prologue: The “Learned” Physician. On the History of an Ideal

Western medicine changed fundamentally during the Middle Ages, with far-reaching effects on the development of the healing arts for centuries to come and ultimately to the present day. Medicine became an academic discipline. It established itself at the newly founded universities.<sup>1</sup> Today, this position is taken for granted. It is widely acknowledged that an adequate diagnosis and treatment of the various human diseases calls for a highly differentiated theoretical foundation, on the basis of a comprehensive and sophisticated knowledge of physiological and pathological processes in the body. As soon as we widen our perspective and look at the many different cultures on our planet, in the past as in the present, however, we quickly see that Western culture with its appreciation of an “academic”, theory-based, scientific medicine is exceptional. In all known cultures and societies there are diseases, and there are people who concern themselves with diagnosing and treating them. And in the vast majority of cultures, medical practice is guided by more or less complex ideas of the human body and its relation to the social, the natural, and the supernatural environment, and it is in the hands of people who are believed to possess special knowledge and skill in the area. Yet, on a global scale, the conviction that medical practice requires a comprehensive, written methodological and theoretical foundation and that a true doctor must be a “learned man” is not the rule but the exception. It is found only in the few so-called “advanced civilizations” that put special emphasis on the written word and book knowledge on the whole, civilizations which moreover, it has been shown, have sometimes had a mutual influence on each other.

The German term for physician “Arzt”, too, did not originally denote a studied, scholarly physician exclusively. The term likely derives from the Greek word “archiatros”, which referred to a prominent member of a group of healers. Early modern physicians still sometimes used the term “Archiater” in this sense, thus giving a kind of honorary title to the leading local doctor. Even in the late Middle Ages, however, many who were honored with the title of an “Arzt” had not studied medicine. A barber-surgeon or surgeon trained in medicine as a craft, for

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<sup>1</sup> For useful overviews see O'Malley, *Medical Education* (1970), pp. 89–102; Bylebyl, *Medicine* (1985); Siraisi, *Medieval & early Renaissance medicine* (1990), ch. 3: *Medical education*; Siraisi, *Fakultät* (1996), pp. 321–342; Siraisi, *Medicine* (2001); Grendler, *Universities* (2002), pp. 314–352; Mugnai Carrara/Forti, *L'insegnamento* (2008).

example, could also be referred to as an “Arzt”.<sup>2</sup> Only in the course of the early modern period did the term “Arzt” become a term which was reserved for the academically trained “doctor *medicinae*” and ultimately the simple term “doctor”, without the added “*medicinae*”, came to refer to the university-educated physician. Over the early modern period, in a further twist, “doctor” became synonymous to some degree, in turn, with “medical practitioner” in general and ordinary people also began to call non-academic healers such as itinerant practitioners, hangmen, and barber-surgeons “doctors”.<sup>3</sup>

Within Western culture, the ideal of “learned” medicine that rests on a scientific and philosophical foundation and on extensive reading is embedded in a millennia-old tradition.<sup>4</sup> The claim that a physician also needed to be a “philosopher” is already found in the writings of Hippocrates. This was an expression of the close connection between medicine and natural philosophy. For instance, the ancient doctrine of the body’s four natural humors – yellow and black bile, blood, and phlegm, with their corresponding and paired primary qualities (hot, cold, dry, moist) – was linked directly to the ancient natural-philosophical theory of the four elements and their qualities of which all things found in nature were made up, with the various combinations of elements and qualities giving rise to specific natural properties.

Of more consequence still than the transmission of specific explanatory elements was the methodological approach that had likewise been adopted from natural philosophy in antiquity. The ancient medical writers created a theoretical edifice which allowed them to explain and treat diseases in naturalistic terms. Even a disease like epilepsy, to use a famous example, which in antiquity was largely understood as supernatural, caused by the gods, was subsequently attributed in an almost mechanistic way to processes that took place inside the head, namely to the disrupted drainage of phlegm from the brain.<sup>5</sup> As heirs of this tradition, we may consider a naturalistic approach to be self-evident. But it is not. In many cultures, gods and other supernatural powers that are often and to varying degrees described in anthropomorphic terms continue to be central to the interpretation and treatment of illnesses.

Even in the Western world, the naturalistic approach was for a long time rivalled by other approaches. The notion that illnesses had supernatural causes or could at least be treated with supernatural means remained alive and well, for example in Asclepian medicine, which was practiced until late antiquity,

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<sup>2</sup> Kintzinger, *Status* (2000), pp. 68f.

<sup>3</sup> Cod. 11205, fol. 272r.

<sup>4</sup> See Jouanna, *Entstehung* (1996) and Jouanna, *Hippocrates* (2000).

<sup>5</sup> Temkin, *Falling sickness* (1971).

not only in the Greece but also in places like the Rhineland. It continued to shape the medical ideas and practices of the rural population into the nineteenth century at least. The “naturalistic” approach of Hippocratic medicine, however, informed medical writers for centuries. In the second century of our calendar, Galen of Pergamon elaborated this program of a medicine based on the theory of natural philosophy in numerous writings. He also expanded it by granting a pivotal role not only to the humors but also to the *pneuma* and the innate vital heat as well as to the individual organs and their faculties. Through his writings, he would have a leading role in the development of Western medicine for about 1500 years to come.<sup>6</sup>

In the late ancient and early medieval West after the collapse of the Roman Empire, learned medicine was passed on and practiced mainly in the monasteries with their libraries and scriptoria.<sup>7</sup> During the same period, the heritage of learned ancient medicine was cultivated and passed down to a far greater extent in the advanced cultures of the Middle East, where it was also enriched with elements of Greek, Arab, and Persian philosophy.<sup>8</sup> The joining of these two traditions, the European, initially predominantly monastic, and the Arab and Persian tradition, would still shape Western medicine centuries later, when, during the High Middle Ages, the first cathedral schools and universities were established.<sup>9</sup> Above all in the areas of contact between Western and Arab cultures, in southern Italy and Spain, extensive translation activity took place. The works of Avicenna, Averroes, and Ḥunain ibn Ishāq (Iohannitius) took their place in libraries next to those of Hippocrates, Galen and the other Greek and Roman authorities. Initially known mostly for its successful practitioners, the famous school of Salerno, located near Montecassino with its vast library, increasingly adopted a highly differentiated theoretical and philosophical foundation.<sup>10</sup>

For our historical understanding it is moreover important to realize that medical subjects and especially medical theory were also discussed and taught in places other than faculties of medicine. They were taught at cathedral schools and later at universities as part of the study of the liberal arts. Even in some grammar schools, students were given the opportunity to learn from medical writings. Fourteen-year-old Isaak Keller in Strasbourg, for example, read not only excerpts

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<sup>6</sup> Galen, *Opera* (1822); Temkin, *Galenism* (1973); Hankinson, *Cambridge companion* (2008).

<sup>7</sup> MacKinney, *Medical education* (1955), p. 844.

<sup>8</sup> Ullmann, *Medizin* (1970); Pormann/Savage Smith, *Medieval Islamic medicine* (2007).

<sup>9</sup> The history of universities in Europe has been studied by numerous scholars. For a survey of the developments in the sixteenth century see the contributions to Ridder-Symoens, *University* (1996).

<sup>10</sup> De Renzi, *Collectio* (1852–59).

from Cicero’s speeches and the dialogue between Aeschines and Demosthenes in Greek, but also Galen’s *De sanitate tuenda*.<sup>11</sup> This was the case even more so for the *gymnasia illustria*, founded in the sixteenth century in some cities. These institutions occupied a place between the grammar schools and the universities, and the local municipal physician often taught classes there.<sup>12</sup> It was sometimes physicians, in fact, who made the explicit demand for such classes to be held. In the opinion of Johann Ludwig Havenreuter of Strasbourg, medicine was to be taught at school no less than the other subjects.<sup>13</sup>

It was nevertheless far from obvious that learned medicine and those who taught and practiced it would gain a foothold at universities such as those of Bologna, Montpellier, Paris and Padua, which were among the earliest universities and for a long time the dominant ones. Medical knowledge, after all, was always connected to its application: to diagnosing, preventing, and treating diseases. In academic disputes over the hierarchy of disciplines, especially between physicians and jurists, the claim that medicine was a *scientia* was bitterly contested for centuries, with some saying that it only deserved the lesser rank of an art or craft (*techne*). Even leading medical teachers like Jacobus Sylvius conceded that medicine was a *scientia* only in a wider, more general sense.<sup>14</sup>

Ultimately decisive for medicine’s successful establishment in academia was its proximity to the philosophy of Aristotle, whose position at the medieval universities towered above everything else. The Galenic writings as well as Avicenna’s *Canon medicinae*, which became the leading medical textbook in the High Middle Ages,<sup>15</sup> were shaped by Aristotle. In fact, it was physicians more than anyone else who during the thirteenth and fourteenth centuries underlined the importance of Aristotelian philosophy.<sup>16</sup>

Subsuming medical subjects under the teaching of the liberal arts made a lot of sense in some respects. There was a great deal of overlap between the issues and questions of medicine and those of natural philosophy. The human being was part of nature and resembled other living beings in many respects. In *De sensu et sensatu* (436a-b) Aristotle had explicitly demanded that natural philosophy

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11 Letter to Bonifacius Amerbach, 12 September 1544, edited in Jenny, Amerbachkorrespondenz (1967), pp. 47f. ([www.aerztebriefe.de/id/00007426](http://www.aerztebriefe.de/id/00007426), S. Krauss/S. Schlegelmilch).

12 My thanks to Sabine Schlegelmilch for pointing this out to me.

13 Havenreuter, Theses (1586), thesis I.

14 Sylvius, Ordo (1548), p. 6.

15 Siraisi, Avicenna (1987).

16 Schmitt, Aristotle (1983); Schmitt, Aristotle (1985)



concern itself with the fundamentals of health and illness.<sup>17</sup> In the early Middle Ages, Isidore of Seville pointed out the proximity of medicine and the *artes* again. According to him, medicine was a “second philosophy” (“secunda philosophia”). While, unlike philosophy, it did not address the soul but the body, it concerned itself with the whole human being. The only reason it did not count among the individual liberal arts was that it was itself based on the liberal arts in their entirety. The physician required grammar to understand what he read and put it in his own words and he required rhetoric to make arguments, and dialectics which helped him to illuminate and consider the causes of illnesses. Arithmetic and geometry, too, were useful to the physician, for example in calculating time and the calendar. Astronomy made it possible to trace the movements of the stars, which had an immediate effect on the human body. Even music proved beneficial at times. David, for example, used his art to liberate King Saul from an impure spirit, and Asclepiades healed a raging man (“phreneticus”) with “symphonia”.<sup>18</sup>

For their part, the learned physicians of the High Middle Ages did everything they could to underline their erudition and the broad theoretical and philosophical basis of their thinking and acting. The scholastic method came to be widely adopted in medicine as it was in many other domains. Leading physicians like Taddeo Alderotti and Pietro d’Abano concerned themselves extensively with philosophical questions, were interested in solving contradictions between the medical tradition and Aristotelian philosophy, and even discussed general moral questions.<sup>19</sup>

In the Renaissance period, the demand that medicine be based on a philosophical foundation resonated more strongly than ever before. Galen’s small treatise *Quod optimus medicus sit quoque philosophus*, translated by none other than Erasmus of Rotterdam, was widely read.<sup>20</sup> With great insistence, Galen demanded that a physician must also be a philosopher and have mastered the different branches of philosophy: *philosophia rationalis*, *philosophia naturalis* and even *philosophia moralis*. He must, based on logical observation (“logica speculatione”), recognize the nature of the body, its composition from elements, different substances (“partes similes”) and organs (“partes instrumentales”) as well as their functions and use for the living being. He must be familiar with different diseases and their treatment. In all that, he had to seek certain proof (“demonstratio certa”), as taught by the “ars rationalis”. With regard to morality, the physician must maintain levelheadedness and must not give in to greed for money.<sup>21</sup>

<sup>17</sup> See also Stolz, *Artes-liberales-Zyklen* (2004), p. 446.

<sup>18</sup> Isidor von Sevilla, *Praeclarissimum opus* (1509), fol. 24r (book 4, ch. 13).

<sup>19</sup> Siraisi, Taddeo Alderotti (1981).

<sup>20</sup> Schmitt, Aristotle (1985), pp. 1–15 and pp. 271–279 (notes), here p. 2.

<sup>21</sup> Galen, *Optimus medicus* (1547), pp. 27–31, cit. pp. 30f.

These demands were echoed by the learned physicians of the sixteenth century and reflected in university teaching. With good reason, a degree in the liberal arts was usually a prerequisite for a university degree in medicine. In some places, such as Montpellier, the pertinent knowledge was tested prior to enrollment.<sup>22</sup> At Italian universities, the *artes* and medicine were commonly taught in the same faculty, but here too a preparatory study of the *artes* was considered indispensable. As a minimal requirement, students had to continue with the liberal arts while studying medicine. When Ulrich Ellenbog enrolled at the university in Siena in April of 1504, he thought it common sense to first familiarize himself with the foundations of logic and philosophy before he turned to medicine. This was the way everyone did it, young and old, he found.<sup>23</sup> Two years later, in the spring of 1506, he reported that he had almost completed his study of logic and was now beginning his study of medicine.<sup>24</sup> The only philosophical subject he would continue to study was the doctrine of nature. He had already read the aphorisms of Hippocrates privately.<sup>25</sup> In Padua as well, sixteenth-century students of medicine did more than hear medical lectures and see anatomical demonstrations. The Zurich medical student Georg Keller, for example, studied Aristotelian logic in much detail and attended the philosophy lectures of the Padua professor Bernardino Tomitano.<sup>26</sup> In his letters, medical student Johannes Greiffenhagen gave as much attention to the commentary on Aristotle by Francesco Piccolomini and Jacopo Zabarella as he did to the activities at the faculty of medicine and the latest publications of Girolamo Mercuriale.<sup>27</sup> In the 1590s, Galileo Galilei deliberately held his lectures in mathematics at a time in the evening when no one else was lecturing, so that students of both medicine and philosophy could attend. By Galileo’s account, the majority of his listeners were students of medicine.<sup>28</sup> Most of those students who earned their doctoral degree in Padua or at another Italian

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<sup>22</sup> Stolberg, *Studying medicine* [2022].

<sup>23</sup> Allen, *Letters* (1907), pp. 740–754, here pp. 741f.; on Bologna see Simeoni, *Storia* (1940), p. 30.

<sup>24</sup> On medical teaching in Siena see Piccinini, *Scienza* (1991).

<sup>25</sup> Ellenbog, *Briefwechsel* (1938), p. 16, summary of Ellenbog’s letter of 8 March 1506.

<sup>26</sup> Schieß, *Briefe* (1906), p. 10.

<sup>27</sup> Letter from Johannes Greiffenhagen to Sigismund Schnitzer, Padua, 27 June 1589, printed in: Hornung, *Cista* ([1626]), pp. 289f.; a preceding letter on the commentators of Aristotle’s works seems to have gone lost.

<sup>28</sup> Archivio di Stato, Venice, *Riformatori allo Studio* 419, letter from Galileo Galilei to the *Riformatori* in Venice (they were responsible for the administration of the university), 9 March 1609. Galileo complained that, after seventeen years of teaching, his students suddenly had to choose between his own lecture and that of Annibal Bimbiolo who had started to lecture at the same hour, without permission.

university consequently obtained a double degree, receiving the title of doctor of philosophy and medicine, which these graduates later proudly underlined in their letters and publications.

Given this situation, Georg Handsch, as we learn from his Padua notebooks, had to resort to certain tricks in order to earn his doctoral degree in medicine. While he had had thorough training in the *studia humanitatis*, he did not even have the title of a *baccalaureus* to show for himself, not to mention that of a *magister*. As his private notes tell us, he therefore had the idea of having letters sent from his home country that addressed him as “magister”. Furthermore, he was going to write a panegyric for the famous professor and ducal physician Antonio Musa Brasavola (1500–1555) in Ferrara.<sup>29</sup> He was, by all appearances, successful. In June of 1553, he completed his studies, earning his doctoral degree in Ferrara under Brasavola.<sup>30</sup>

The study of the *artes* offered more than a thorough training in philosophy, rhetoric, and the art of debating, which was useful to future physicians. It also gave students some of the knowledge and skills that were useful for the study of medicine and for later professional life as a physician: natural history offered diverse insights into the world of plants, animals, and minerals, which were also used to make medicines. Mathematical skills helped with calculating birth horoscopes (nativities) and creating astrological calendars for a town (usually for the physician’s place of residence), for a particular longitude and latitude. Physicians were among the major authors of astrological calendars, one of the most widely sold products of the printing press at the time.<sup>31</sup> Some town physicians published such a calendar for their place of activity every year.<sup>32</sup>

There was furthermore quite an overlap between philosophy and medicine in academic teaching in the sixteenth century, especially at the Italian universities. With medicine and the *artes* being at home in one and the same faculty, personal exchange necessarily took place. Moreover many a university career at the time led from a lesser regarded and lesser paid chair in philosophy to medicine. At the University of Bologna, for example, professors tended to first teach logic and then philosophy for a number of years before they eventually were given a chair

<sup>29</sup> In Handsch’s manuscript collection of his poems, there is a eulogy on Brasavola, which he recited on the occasion of his doctoral exam in 1553 (Cod. 11210, fol. 174a v; see also Cod. 9821, fol. 243v).

<sup>30</sup> Pardi, Titoli (1901), pp. 166f.

<sup>31</sup> Sudhoff, *Iatromathematiker* (1902); Herbst, *Biobibliographisches Handbuch* (<https://www.presseforschung.uni-bremen.de/dokuwiki/doku.php?id=startseite>).

<sup>32</sup> E.g., in Zürich, Christoph Clauser (Wehrli, Clauser (1924), pp. 84–98).

of medicine.<sup>33</sup> Some philosophers studied medical subjects thoroughly. For example Jacopo Zabarella, one of the most influential Aristotelians of his time, sought to find ways of establishing a stringent, logical rationale to guide medical diagnostics and therapy. He put great emphasis on the significance of an analytical course of action, a *methodus resolutiva*, for medicine: from the symptoms, the physician must conclude the cause. In a second movement of thought, the physician could reverse his direction and, performing a *regressus*, arrive at an even more precise understanding of the symptoms from his knowledge of the cause of the disease.<sup>34</sup> There is much to suggest that Zabarella for his part was influenced by the Padua physicians of medicine. Most notably, Giovanni Battista da Monte, decades before Zabarella, cultivated a strict methodical procedure to be followed at the bedside and taught his students to draw from their observations of individual patients and from the changes and complaints the patient was reporting to identify and understand the pathological changes and processes that were taking place inside the body.<sup>35</sup>

During the sixteenth century, philosophy and medicine were also closely linked north of the Alps, where the two disciplines were commonly taught in separate faculties. As in Italy, many a German professor of medicine started out teaching the *artes*. Philipp Melanchthon’s *De anima* was among the works that reached far beyond the scope of medicine and philosophy, and it was one of the most influential treatises of the period. In formal respects, the work was conceived as a commentary on Aristotle’s doctrine of the soul, yet it offered anatomical and physiological knowledge on a broad scale.<sup>36</sup> As can be seen from the repeated references to it in Handsch’s Padua lecture notes, *De anima* also received an early reception in Italy.<sup>37</sup>

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<sup>33</sup> Thus, Benedetto Vittore, taught logic in Bologna for two years and philosophy for another six before he took the chair of *medicina theórica* in 1512; like him Virgilio Gherardi and Jacopo Pacini moved from logic to philosophy and finally medicine (Mazzetti, Repertorio (1847), p. 321, p. 147, p. 230).

<sup>34</sup> On Zabarella’s logic see Mikkeli, Aristotelean response (1992); Ingegno, Astrologia (1995), pp. 85–113.

<sup>35</sup> Da Monte, Consultationum (1554); Da Monte, Consultationum (1556); Da Monte, Consultationum (1558); Da Monte, Consultationum (1559); Da Monte, Consultationum (1565). Many of Da Monte’s “consultationes” were judgements on individual patients he delivered orally and which his students recorded on paper.

<sup>36</sup> Melanchthon, Commentarius (1540); Melanchthon, Liber (1552); cf. Helm, Galenrezeption (1996) and idem, Aristotelismus (1997).

<sup>37</sup> E.g. Cod. 11210, fol. 4r and fol. 34r.

# Choosing a Profession

At the beginning of one of Handsch's notebooks, there is a list that at first seems puzzling. It includes the words "poeta", "orator", "arithmeticus", "musicus", and also "grammaticus", "medicus", "organista" and "nigromanticus". With a different pen and different ink, Handsch added further terms such as "dialecticus" and "praestigiator".<sup>38</sup> On the following pages, other, more explicit entries reveal what the list is about: his "magister" intended to recommend him for work as an "arithmeticus" in the metal works of the Herr von Gendorf. God may see to it that he may become a "lector" at the university in Prague, he wrote. Other positions he named include "Stadtschreiber" (town clerk) and even "sacerdos" (priest), and teacher in the chantry ("ynn der Canterey praeceptor").<sup>39</sup>

There is no doubt that Handsch, who was barely twenty years old,<sup>40</sup> was pondering his professional future and weighing his options. It becomes clear from this list that medicine was only one of many possibilities at that point in time and by no means was it at the top. He could see himself becoming a poet, rhetor or "grammarian" – likely this meant a school teacher – a musician or organist, a town scribe or, apparently this was his favorite choice, a university lecturer. The list only appears random at first glance. Perhaps with the exception of the "career option" of "magician" or "necromancer",<sup>41</sup> which he was presumably not serious about, these professions had one thing in common: they required knowledge and skills of the kind that were taught in the seven liberal arts, in the *trivium* of grammar, rhetoric, and dialectics, and in the *quadrivium*, which added special knowledge and proficiencies in natural philosophy, arithmetic, geometry, and musical theory.

As Handsch's list illustrates, the cultural capital<sup>42</sup> of a good education in the *artes liberales* already opened up various professional prospects. A look at the medical biographies of that time shows that more than a few physicians appreciated and made use of this multitude of options. An extensive, quantitatively robust prosopography of early modern physicians in German-speaking

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<sup>38</sup> Cod. 9666, fol. 1r.

<sup>39</sup> Ibid., fol. 1v.

<sup>40</sup> The manuscript carries the date 23 September 1547 but Handsch probably added the list only later on the first pages, which he had initially left blank. Without doubt the entries date from the time before he went to Padua, however, in the autumn of 1550, to study medicine.

<sup>41</sup> In another entry in the same notebook, Handsch mentioned that he had learned some magic tricks with cards and numbers (Ibid., foll. 134v-135r).

<sup>42</sup> On the concept of "cultural capital" see Bourdieu, *Les trois états* (1979); Bourdieu, *Forms* (1986).

areas remains an urgent desideratum. But even a rough look at historical work done on the biographies of graduates of individual universities<sup>43</sup> and at the data about several thousand physicians in German-speaking areas which the Würzburg project “Frühneuzeitliche Ärztebriefe” has been amassing since 2009<sup>44</sup> indicates that many future physicians did not follow the straight path from Latin school to studying the liberal arts to acquiring a doctoral degree in medicine. Prior to studying medicine, many later physicians practiced other professions, some for many years. Some practicing physicians continued throughout their lives to have other sources of income that had no connection to medicine. Heinrich Stromer (1476–1542), the owner of the tavern “Auerbachs Keller” in Leipzig, is a well-known example.<sup>45</sup>

One obvious and relatively popular profession to take up after completing a course of studies in the *artes* – and this applied, among others, for a number of graduates of the Prague university – was that of a teacher.<sup>46</sup> Even some of the most renowned physicians and scholars of the time taught intermittently at a school or directed one, like Georg Agricola (1494–1555) in Zwickau. Others started out in the employ of a prince or nobleman, acting as tutor for their sons. Johann Aichholz (1520–1588), for example, travelled in France and Italy as a private teacher before earning the degree of doctor of medicine at the age of 35 and, several years later, becoming a professor at the medical faculty in Vienna.<sup>47</sup>

A further opportunity or way station that is commonly found in the biographies of well-known physicians, in particular, was teaching at a university. A fair number of future *doctores medicinae* first taught at an arts faculty. Heinrich Stromer lectured at the Leipzig university about the logician Petrus Hispanus (13th cent.), before turning to medicine.<sup>48</sup> Teaching at the Jena university in the early seventeenth century, Thomas Reinesius (1587–1667) lectured about mnemonics and other subjects before accepting the position of *Hofmeister* (private tutor) with the imperial apothecary in Prague and later with Count von Schlick. He then went on to resume his studies, earning his doctoral degree in Basel.<sup>49</sup>

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<sup>43</sup> Koch, Medizinische Fakultät (2007).

<sup>44</sup> See [www.aerztebriefe.de](http://www.aerztebriefe.de); the biographical data that is currently accessible online is quite rudimentary and sometimes based on secondary sources only. As part of the project work, a far more comprehensive internal biographical working database was established which will be made accessible when funding for the project terminates (probably in 2024).

<sup>45</sup> Wustmann, Wirt (1902).

<sup>46</sup> Truc, Aufgabe (1998), p. 205; Horský, Bedeutung (1988), pp. 279f.

<sup>47</sup> Schrauf/Wenzel, Wiener Ärzte (1894).

<sup>48</sup> Wustmann, Stromer (1902), p. 7; Hiob Finzel first taught in the arts before he embarked on his medical studies (Aewerdieck, Register (2010), pp. 12–21).

<sup>49</sup> Hase, Reinesius (1858), pp. 315–6.

Even the hope of being employed as a musician was not unique to Handsch. Simon Wilde, for instance, who would later be a physician in Zwickau, initially attempted to secure a position as cantor.<sup>50</sup>

Clearly, many of those who eventually became physicians were not destined for a medical career from the start. The study and practice of medicine was only one of many possible options for a young *baccalaureus* of the liberal arts who hoped to find his place in society. Yet it was important to weigh this option carefully, especially in comparison to studying in one of the other higher faculties, theology or law. Physicians, who would have known best about the advantages and disadvantages of the profession, had good reason to have their sons study medicine as well, as they often did.<sup>51</sup> The work of a physician was respected and would become more attractive economically in the course of the sixteenth century, as we will see. Especially in cities, growing sections of the population used the services of learned physicians or indeed came to prefer them over those of other practitioners. In addition, more and more cities employed doctors of medicine as town physicians, paying them a salary that secured them a basic income. More so than theology and law, medicine promised a certain degree of freedom and independence. The physicians of that time became leading representatives of a new social phenomenon which was to play a prominent role in the centuries to come: often far from their home town and without the support of family ties, many of them were successful in establishing their livelihood thanks to their academic training alone. Some of them even achieved considerable wealth. An analysis of tax contributions along with the numerous physicians and physicians' daughters who married into the urban patriciate and in some cases even into aristocracy, reveals that many physicians were part of the urban upper classes. The most successful among them amassed extensive assets through their work and dowries and became financially powerful moneylenders.

A medical career also had its shadow sides. Young physicians in particular often struggled to hold their own and establish a successful practice in the face of the numerous competitors. Moreover, the very object that was at the center of medical practice, the human body, put the physician's reputation and dignity at risk. While university-educated physicians largely steered clear of the manual aspects of medical treatment – readily leaving bloodletting, cupping, and clustering up to the barber-surgeons – they still invariably found themselves associated with stench, corruption, putrefaction. At a time when “uncleanliness” threatened to mar one's

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<sup>50</sup> Buchwald, Simon Wilde (1894), p. 70.

<sup>51</sup> For figures on Lyon and Montpellier see Lingo, Rise (1980), pp. 46f.

honor or at least one's repute, physicians had no choice but to examine human excretions as a major path to a precise diagnosis.

Contemporary critics of medicine did not mince words when bringing up this painful subject. The art of medicine, as Agrippa von Nettesheim mercilessly put it, was "filthy". It was only "because of a shameful profit" that physicians circled "around sick people's piss-pots and outhouses". They were "for the most part contagious and reeking of patients' urine and feces", "filthier than even the midwives, as they have to look at nasty and filthy things with their own eyes, and hear and smell the belching and farting of the patients."<sup>52</sup> Zeno Reichart was "not born for stool and urine" a befriended apothecary argued and recommended that the young man should study law rather than medicine. Although he had first wanted him to study medicine, Zeno's father now agreed.<sup>53</sup> Theology and jurisprudence – the latter commonly favored over medicine by the sons of nobility – did not endanger one's dignity in the same way. In addition, medicine put the physician's own health at risk, especially in times of epidemics. Many a physician fell victim to the plague, and it was commonly assumed in such cases that he had contracted it from his patients.

Apart from all that, the road to becoming a *doctor medicinae* was long and costly – though the same could be said about theology and jurisprudence. Usually following the study of the liberal arts, a medical degree took at least three or four more years, often more. This was a long time in which the young men usually continued to be a drain on their fathers' financial resources. The expense was even greater if they spent at least a part of their studies at a renowned university abroad. In addition to travel costs, enrollment fees and other tuition fees, for example for anatomical demonstrations or private courses, which played a very important role in Padua,<sup>54</sup> there were the costs for room and board, for clothing and books.<sup>55</sup>

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<sup>52</sup> Nettesheim, *Eitelkeit* (1913), p. 79.

<sup>53</sup> Ludwig, Vater und Sohn (1999), p. 227, letter from Wolfgang Reichart to Zeno Reichart, 24 February 1524, "non ad stercora et lotia esse natum".

<sup>54</sup> Johann Schwartz, e.g., claimed that he could make ends meet in Padua with the grant he received but only if he did not seek deeper medical knowledge ("medizinischen Sachen nicht sonderlich nachforschen") (Hauptstaatsarchiv Stuttgart, A 282, 1301, letter from Johann Schwartz to Franz Kurtz, 4 February 1573).

<sup>55</sup> Precise figures are difficult to come by and the variety of coins and their changing value make any comparison problematic. The 70 fl. which Ulrich Ellenbog had to pay in advance at the Domus Sapientiae (University) in Siena in the early sixteenth century suggest a relatively modest price; the money bought him food, a room with bed and bedding, two tables and two chairs for a period of seven years (Ellenbog, *Briefwechsel* (1938), pp. 14f.). In 1553, Philipp Bech had to pay one taler and two groschen per week in Leipzig to the physician Martin



Georg Keller, in 1556, tells us about fellow students in Padua who could not make ends meet even with an annual allowance of 100 gulden<sup>56</sup> – and this in spite of the relatively low cost of living in Padua.<sup>57</sup> In Paris – expensive and in turmoil due to the French Wars of Religion and later the St. Bartholomew's Day massacre – room and board could not be obtained even for 14 gulden a month, according to a sup-  
plication by Johann Schwartz in 1572.<sup>58</sup>

These costs were not the only obstacle. Increasingly, having a successful medical career was tied to carrying the title of *doctor medicinae*, preferably granted by one of the leading universities of the time. Until the sixteenth century, it had been possible in many places to make a decent living as a physician without a doctoral degree. Lacking the title of *doctor medicinae*, Ulrich Lehner from the town of Kaub had a flourishing practice in Prague as late as 1550. Yet he was already an exception. In some cities, like Augsburg with its many physicians, not even a doctoral title came with a license to practice. It was merely the prerequisite to seek accreditation from the *collegium medicum*. In France, only a doctoral degree from Paris or Montpellier gave the right to practice anywhere in the country. Graduates of other universities could expect having to pass another exam if they were going to practice in a French city.<sup>59</sup>

A proper doctorate from a recognized university was expensive. According to Georg Keller's account, the cost in Padua in Handsch's time was twenty-four to thirty gulden, and even as much as fifty.<sup>60</sup> In addition to the fees paid to the professors and the custodian, students often had to pay for the banquet that was commonly hosted by doctoral candidates and for gifts in kind, such as the gloves that were given to professors in Montpellier, for example.<sup>61</sup> Consequently, there

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Drembeck, in whose house he lived. The upkeep for the horse with which he wanted to ride from Leipzig back to Basel cost another taler a week; whether the amount included the cost of food and drink, is not clear (letter from Bech to Johann Ulrich Iselin, 9 September 1553, in: Jenny, *Amerbachkorrespondenz* (1982), pp. 140f. ([www.aerztebriefe.de/id/00007930](http://www.aerztebriefe.de/id/00007930)), M. Kohler/T. Walter). Jakob Baldenberger, a medical student in Montpellier in 1551/52, spent 22 crowns or about 35 fl. in eight months (letter from Baldenberger to the town council of St. Gallen, 19 June 1552; [www.aerztebriefe.de/id/00019601](http://www.aerztebriefe.de/id/00019601), A. Döll/ T. Walter). According to Johann Schwartz, in Padua in 1573, the modest meal in the *bursa* alone cost 6 crowns (Hauptstaatsarchiv Stuttgart, A 282, 1301, letter to Franz Kurtz, 4 February 1573).

56 Schieß, *Briefe* (1906), pp. 22f.

57 Brugi, *Gli scolari* (1903), p. 12.

58 HStA Stuttgart, A 282, Bü. 1301, letter from Johann Schwartz to Duke Ludwig of Württemberg, October 1572.

59 Lunel, *Maison* (2008), pp. 42–45.

60 Schieß, *Briefe* (1906), p. 23; conversion into gulden based on his own (rough) indications (*ibid.*, p. 5).

61 Dulieu, *Médecine* (1979), pp. 66–69.

were many German-speaking students of universities in Northern Italy or Montpellier who opted to conclude their studies later by obtaining a doctoral degree from a different university which offered more attractive financial conditions. In the late sixteenth century, Basel was an especially popular place in this respect.

In the correspondence between medical students and their fathers, financial questions and requests for more money played a central role and were a potential source of conflict, especially when fathers suspected that their sons were not dedicated enough to their studies, or that they might even be engaging in licentious behavior or throwing money away. Johann Georg Gockel complained that the beating his father had given him had made him stop asking for money to buy new trousers, but it did not change the fact that his current trousers were riddled with holes. Going around in rags like this, he ran the risk of becoming the laughing stock among those around him.<sup>62</sup> Mothers and sisters, too, were sometimes approached about money. In response to his request, Gockel's mother sent her son only a pittance, and combined it with a stern admonition that he was not to waste it all on food or to mingle with bad company. If he should prove to be a wretch like his cousin, whom she had just seen, she would kick him until the dirt came out of his gullet.<sup>63</sup> From Siena, Ulrich Ellenbog wrote three letters in quick succession to his sister Elisabeth in Ravensburg to ask – successfully, it seems – for money for his doctorate.<sup>64</sup> Some medical students borrowed money from friends and fellow students, or they became indebted to their landlords for their room and board, telling them that they expected more money to be sent soon, only to make for the hills. The representatives of the *Natio germanica artistarum* in Padua – an association of the numerous German-speaking students of the arts and of medicine – had to deal on a regular basis with Padua citizens who came to them demanding the money owed them by members of the *Natio* who had left without paying.<sup>65</sup>

The costs of studying and gaining a doctoral degree may have been high, yet they were not prohibitive: social mobility was greater at the time than one might assume. Studying medicine was by no means open only to young men from the wealthy upper classes of European cities. The sons of ordinary craftsmen, too,

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<sup>62</sup> Stadtarchiv Ulm, J1 Autographen, L 74f., letter from Johann Georg Gockel to his father Balthasar, 10 May 1627.

<sup>63</sup> Ibid., L 76, letter from Susanna Gockel to Johann Georg Gockel, around 1627.

<sup>64</sup> Ellenbog, *Briefwechsel* (1938), p. 86, summary of a letter from Nicolaus Ellenbog to Ulrich Ellenbog, 6 January 1512.

<sup>65</sup> Archivio antico dell'Università di Padova, Padua, n. 476 and n. 477, *Epistolario della Nazione degli Artisti*, 1565–1647.

could sometimes find a way into medicine. There was, for example, Daniel Sennert, the son of a shoemaker, who studied in Wittenberg in the late sixteenth century and went on to become one of the most well-known and most recognized physicians of his time.<sup>66</sup> Many students were able to earn at least some of the money they required for their studies and to meet their needs. The position of assistant or *famulus* to a professor was greatly sought after. It promised not only financial rewards. Sharing a household and a place at the dinner table with a professor, students were able to establish a social bond and perhaps get to know the professor's colleagues and acquaintances, who might prove helpful further down the road. In 1572, Johann Schwartz, for instance, asked permission from his Duke to study under the famous Felix Platter, who was known to take those with whom he dined along with him when he practiced his profession.<sup>67</sup> Rudolf Gwalther advised the young Georg Keller, whose studies he supported financially, to try and become the assistant to a professor in Padua. Keller saw no opportunity at the time, likely because all available positions had been taken.<sup>68</sup> Later, when he spent more time in Padua, he did indeed have hopes of being received in the house of his revered teacher Bassiano Landi.<sup>69</sup> Theodor Zwinger, said Keller, was already serving Landi as his *famulus*, like other students before him. He thought that this was not a particularly toilsome position. All he had to do was write down the lectures of the professor, who would dictate them to him, go to his lectures, and generally accompany him. In exchange, this would give him the opportunity to learn Latin and Greek.<sup>70</sup> The path chosen by Jean Zonion, by contrast, was likely an exception. He first taught school in Basel but then married an approximately seventy-year-old woman, whose money allowed him to go to Montpellier and earn his doctoral degree. After her death, he practiced medicine in Ravensburg.<sup>71</sup>

More than a few young men who came from modest circumstances were able to win the support of a patron or were awarded a scholarship. In Augsburg, for example, a private endowment, the Remboldsche Stiftung, funded the medical studies of Adam Buecher and others.<sup>72</sup> In Jena, a privately funded scholarship was

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<sup>66</sup> Vita Danielis Sennerti in Sennert, Opera (1656).

<sup>67</sup> HStA Stuttgart, A 282, Bü. 1301, letter from Johann Schwartz to Duke Ludwig of Württemberg, October 1572.

<sup>68</sup> Schieß, Briefe (1906), p. 8.

<sup>69</sup> Ibid., p. 20.

<sup>70</sup> Ibid., p. 21.

<sup>71</sup> Platter, Tagebuch (1976), p. 188; Gaudin, Platter (1892), p. 63.

<sup>72</sup> Letter from Adam Buecher to the town authorities in Augsburg, 13 June 1603 ([www.aerztebriefe.de/id/00011653](http://www.aerztebriefe.de/id/00011653), S. Herde).

available for students of medicine from Coburg.<sup>73</sup> A scholarship donated by the physician Johann Neeff in Chemnitz allowed Martin Cotta to study in Leipzig.<sup>74</sup> Some municipal authorities likewise supported the sons of their citizens with significant sums of money and enabled them to study medicine at a distinguished university, thus securing the future services of a well-trained physician for the town. Scholarships like these are known to have existed in Torgau,<sup>75</sup> Zurich,<sup>76</sup> St. Gallen,<sup>77</sup> and Königsberg,<sup>78</sup> for example. Some territorial lords supported the medical studies of their native sons for similar reasons. Johann Schwartz, for instance, received 150 gulden from Duke Ludwig of Württemberg for his medical studies in Paris.<sup>79</sup>

Georg Handsch, like many young men who later practiced medicine, came from a well-to-do middle-class background. His father Wenzel must have been a rather wealthy and respected man.<sup>80</sup> Probably he was a cloth merchant or clothier. In his botanical notes about *rubea tinctorum*, also known as “madder” or

<sup>73</sup> Hase, Reinesius (1858), p. 314.

<sup>74</sup> Letter from Cotta, who was still an arts student at the time, to Johann Neeff, 12 April 1561 ([www.aerztebriefe.de/id/00030051](http://www.aerztebriefe.de/id/00030051), T. Walter).

<sup>75</sup> Horst, *Epistolae* (1596), p. 70, “vestrumque studium iuvandi egestatem meam mihi [. . .] gratissimum acciderit”.

<sup>76</sup> Schieß, *Briefe* (1906).

<sup>77</sup> Arbenz/Wartmann, *Vadianische Briefsammlung*, part 6/2 (1908), pp. 612–615, letter from Jakob Baldenberger to Joachim Vadian, Strasbourg, 31 March 1547, about fellow students and others of his age group who received a grant from the town council ([www.aerztebriefe.de/id/00006766](http://www.aerztebriefe.de/id/00006766), M. Kohler/T. Walter/M. Huth).

<sup>78</sup> See, e.g., the letter from Konrad Battus to the Elector Joachim Friedrich of Brandenburg, 10 July 1600 ([www.aerztebriefe.de/id/00004069](http://www.aerztebriefe.de/id/00004069), U. Schlegelmilch); letter from Valerius Fiedler, medical student in Padua, to Duke Albrecht von Preußen, Padua, 20 August 1554, asking for his grant to be increased in order to allow him to spend a third year in Italy, in spite of the high costs ([www.aerztebriefe.de/id/00020767](http://www.aerztebriefe.de/id/00020767), U. Schlegelmilch); idem, Padua, 12 January 1554, expressing his gratitude for the 200 crowns he was granted for the current, third year ([www.aerztebriefe.de/id/00020768](http://www.aerztebriefe.de/id/00020768), U. Schlegelmilch).

<sup>79</sup> Hauptstaatsarchiv Stuttgart, A 282, 1301, letter from Johann Schwartz to Duke Ludwig of Württemberg, October 1572.

<sup>80</sup> The parish books from Leipa have survived only from the eighteenth century onwards. The “memory books” (*Gedächtnisbücher*) of the town mention Wenzel Handsch since 1531 (Hantschel, *Heimatkunde* (1911), p. 617); in the council minutes (“*Stadtbuch*”), Wenzel appears for the first time in 1540, as a guarantor for a new citizen (Ebelová, *Pamětní* (2005), p. 161; further entry in 1549, *ibid.*, p. 168). It is possible that the family originally came from Leipzig. In the 1550s a certain Georgius Hantschius ran a printing workshop there. He may have been a relative but this is made unlikely by the fact that Handsch (according to Cod. 11205, fol. 1r) was surprised when he saw a book at Collinus’ that bore the note “*Lipsiae in officina Georgij Hantschij*”.

“dyer’s madder”, Handsch remarked that he had seen how the cloth makers at his father’s place used the red root of the plant for dyeing.<sup>81</sup> His father owned a house in Leipa<sup>82</sup> and was a member of the town council.<sup>83</sup> For the burial of his son Christoph in 1557, at which various members of the nobility were present, he spent around eighteen talers.<sup>84</sup> He gave Georg a good schooling, first with a teacher in Leipa, whom Georg later thanked with a poem saying he had led his peasant’s mind (“agrestem mentem”) to higher things.<sup>85</sup> After this he attended the Latin school in the Silesian town of Goldberg, today’s Żłotoryja in Poland. This school was one of the most renowned Latin schools of the time and, under the directorship of Valentin Trotzendorf, was known far beyond the borders of the land. Among its students were Caspar Peucer and others who later rose to eminence. It offered a comprehensive education in the *studia humanitatis*, above all in the ancient languages. Classes were taught in Latin and students were admonished, under the threat of punishment, to speak only Latin among themselves.<sup>86</sup>

Presumably in 1544, but perhaps as late as 1545 or 1546,<sup>87</sup> Handsch went to Prague. There is no evidence that he was enrolled there at Charles-University to study the arts.<sup>88</sup> His own notes tell us that he never earned the title *magister artium* and the dean’s records of the faculty in Prague do not even list him among the graduated baccalaureates.<sup>89</sup> His poems from that time – among them a versified autobiography – suggest that instead he attended the private-school lessons

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**81** Cod. 11205, fol. 117r.

**82** Cod. 9821, fol. 80r: “Has Venceslaus Handsch renovavit sumptibus aedes/ Ista stat Italico facta labore domus”.

**83** Pardi, *Titoli dottorali* (1901), p. 166.

**84** Cod. 9550, fol. 1r-v.

**85** Cod. 9821, foll. 24r-27r.

**86** Bauch, Valentin Trotzendorf (1921); a Latin school was established in Leipa in 1627 only (Hantschel, *Heimatkunde* (1911), pp. 856–858). A contemporary school book based on Trozendorf’s method (Ludovicus, *Compendium* (1572)) shows that the teaching of Latin was quite sophisticated in didactic terms.

**87** In December 1544, he wrote a letter from Prague but this does not prove that he had moved there permanently (Cod. 9650, foll. 1r-3r).

**88** Wolkan (*Geschichte* (1894), p. 126) already came to the same conclusion.

**89** *Liber decanorum* (1832).

for “boys” taught by Magister Johannes Schentigar,<sup>90</sup> perhaps in preparation of a later course of study at university.

Then, however, came a caesura: it seems that Handsch’s father Wenzel, who had been generous for many years, was no longer willing to continue to support the education of his son in the same manner.<sup>91</sup> The reasons for this remain unclear. Following the early death of Georg’s mother, Wenzel had married again and had more children.<sup>92</sup> Numerous entries in Handsch’s notebooks show, however, that he had a good rapport with his stepmother, whom he often called simply “mother” (“mater”), and with his half-siblings. When later writing his will, he specifically asked to be buried next to his father. We can only speculate about the reasons, but it appears they had a falling-out. In later times, Georg’s father continued to be critical of his work and sometimes accused him of lacking earnestness, as various entries in Georg’s notebooks tell us. Possibly, he was unhappy about his son’s lifestyle. Georg’s notebooks include numerous indications that he had a pronounced penchant for wine, even by the comparatively generous standards of the time.<sup>93</sup> Already as a young man in Prague, he was rebuked by his mentor Lehner and others because of his drinking. He considered these remonstrations justified and intended to remain soberer and mindful of his dignity.<sup>94</sup>

Georg Handsch, in any case, found himself in the position of needing to earn his own living. He asked Schentigar to commend him to Matthaeus Collinus (1516–1566), the leading mind of the Prague humanists and a teacher in the arts faculty,<sup>95</sup> and to ask that he be given the vacant position of assistant.<sup>96</sup> In 1543, Collinus had founded a private school for the sons of the Prague gentry,

<sup>90</sup> Cod. 9821, fol. 130r, “Et quia Schentyarus clarus, doctusque poeta/ Privatum pueros instituebat ibi/ Huius discipulus sum factus ludimagistri”; drawing on ancient Rome as a model, “ludimagister” was a commonly used term for “teacher” at the time. In 1545, Handsch contacted Schentigar several times and asked, among other things, on behalf of the student body (“grex discipulorum”) for permission to play some “honourable” games (ibid., foll. 7v–8r.); on Schentigar see Kalina von Jätenstein, *Nachrichten*, vol. 1 (1818), pp. 18–29; Hejnic, *Dva humanisté* (1957), pp. 6–16.

<sup>91</sup> Cod. 9821, fol. 130v: “Ante meus genitor sumptus mihi suppeditarat/ Et studium largo foverat aere meum.”

<sup>92</sup> She died in 1539 (Ibid., fol. 69r and fol. 74r).

<sup>93</sup> Feustel, *Grenzgänge* (2013), esp. pp. 34f.

<sup>94</sup> Cod. 11205, fol. 292v: “Sis sobrius et serva gravitatem”; “hic peccavi q[uod] permisi me inebriari, et hoc M. Ulricus in me reprehendit”; similarly, ibid., fol. 533v.

<sup>95</sup> Cf. Storchová, Collinus (2020); see also Jakubcová/Pernerstorfer/Reitterer, *Theater* (2013), pp. 123–125, and Menčík, *Dopisy* (1914).

<sup>96</sup> Cod. 9821, foll. 77v–78v; the heading “Pragae Anno 1547” on the preceding page, fol. 77r, suggests that he wrote this poem like the two preceding ones in 1547.

and in 1548, he acquired the so-called Angel's Garden in Prague's New Town including its buildings for this purpose.<sup>97</sup> Schentigar's efforts were apparently successful and Handsch took up work as teaching assistant in Collinus's school.<sup>98</sup> Thanks to his excellent education, he had knowledge enough of the *studia humanitatis* and the *artes liberales* to earn a modest living even without a formal academic degree. He was able to instruct his friend Thomas Mitis not only in music and arithmetic but even in the Hebrew language.<sup>99</sup>

This connection with Collinus was decisive for Handsch's future. Thanks to Collinus, Handsch gained access to the circle of humanists and poets associated with the wealthy Bohemian vice judge Johannes Hoddeiovinus (Hodiejowsky of Hodiejowa), who asked them to write poems for him that would, for one thing, glorify him and his possessions. We will come back to this later. It was also Collinus who, in 1548, helped Handsch find a position as assistant with the aforementioned Prague physician Magister Ulrich Lehner.<sup>100</sup> At the time when he was writing poems for Hoddeiovinus, Handsch, under the tutelage of Lehner, was also striving to expand his medical knowledge, and thus he was – as he wrote in a letter – doubly following in the footsteps of Apollo, the inventor of poetry and medicine.<sup>101</sup>

We know little about his work for Lehner. Handsch made only infrequent notes. While two of his notebooks concern Lehner's practice during the late 1540s,<sup>102</sup> it appears that Handsch only copied the practice records of his teacher,<sup>103</sup> including many entries from years before he was under Lehner's tutelage. There are only occasional indications that he personally treated patients during his time

<sup>97</sup> Jakubcová/Pernerstorfer/Reitterer, Theater (2013), p. 124.

<sup>98</sup> Handsch called himself one of Collinus' "hypodidascali", i. e. lower ranking teachers (Cod. 9650, foll. 6r-9r, copy of a letter to Thomas Mitis, 25 July 1548).

<sup>99</sup> Cod. 9821, fol. 77r-v, copy of a letter from Handsch to Mitis; possibly Handsch learnt Hebrew from Dominicus Nösler in Leipa, whose knowledge of Hebrew and Latin he later praised in an epitaph (ibid., foll. 80v-81v).

<sup>100</sup> Ibid., fol. 130v.

<sup>101</sup> Cod. 9650, foll. 6r-9r, copy of a letter to Thomas Mitis, 25 July 1548.

<sup>102</sup> Cod. 11006, "Praxis et factitatio medicinae D. Ulrici medici Pragensis nec non D. Galli et Gerhardi regis Ferdinandi physicorum, observata et collecta exquisitissime per Georgium Handschium Lippensem germanicoboemicum Pragae An[no] 1550"; "Gerhardi" probably refers to the Habsburg court physician Gerhard Bucoldianus; Cod. 11247, "Secunda pars practicae D. Ulrici Leonori a Cauba, Medici Pragensis. Collecta per Georgium Handschium Lippensem Germanico-Bohemum Anno 1550".

<sup>103</sup> The handwriting is very clean and uniform; repeatedly Lehner's approach is explicitly rendered in the first person ("omisi", "ordinavi").

with Lehner. For example, Handsch mentioned a formula Lehner had dictated to him for an acquaintance in Leipa.<sup>104</sup>

At any rate, the course had been set for the first leg of Handsch's medical journey. It appears that Handsch came to the conclusion relatively early that medicine had particularly good prospects to offer. "Recht Artzney Künst / Erlanget Günst / Lob, Ehr unnd Gellt / Ynn aller Welt" [Good medical art / Achieves favor / Praise, honor and money / In all the world], he rhymed at the beginning of one of his notebooks. Commenting on his verse, he wrote that medicine was a safe companion ("viaticum") in all lands.<sup>105</sup> Without his father's support, however, he lacked the necessary means to study medicine, all the more so because he would have to go abroad; the medical faculty at the Prague university was no longer active in Handsch's time.<sup>106</sup> It appears that in the end it was thanks to a benefactor that Handsch was able to study medicine. In the summer of 1549, when Handsch was already learning from Lehner, he still hoped to find employment at the court chancellery.<sup>107</sup> The following summer, he was still encouraging an acquaintance of his to send that man's brother to Prague, promising that he would help him learn the Czech language.<sup>108</sup> Yet, then in the fall of 1550, Handsch left for Padua and took up the study of medicine. He documented his journey via Salzburg in an elaborate travel poem, a *hodoeporicon*.<sup>109</sup> It has been supposed that a young nobleman, Karl von Dietrichstein, whom Handsch accompanied to Padua, funded his studies, but there is no explanation of what might have caused Karl von Dietrichstein (or his parents) to extend this generous support.<sup>110</sup> An entry in Handsch's notebooks as well as his later work in the house of the Habsburg court physician Andrea Gallo make it almost certain, in fact, that things were different: "Doctor Gallus wants to send me to Italy with his son and pay for my expenses", the succinct entry reads.<sup>111</sup> Gallo lived in Prague and Handsch had befriended his son Giulio.

<sup>104</sup> Cod. 11006, fol. 31v; it was merely a remedy against toothache.

<sup>105</sup> Cod. 11210, fol. 1r.

<sup>106</sup> Svobodný, Medical faculty (2001); Hlaváčková/ Svobodný, Dějiny lékařství (2004), pp. 51–53; Hlaváčková/Svobodný/Adamec, Biografický slovník (1988/1993).

<sup>107</sup> Cod. 9650, foll. 18v–20r, copy of a letter to Martin Hanno, 25 July 1549.

<sup>108</sup> Cod. 9650, fol. 22r–v, copy of a letter to Martin Huber, 22 July 1550.

<sup>109</sup> Cod. 9821, foll. 288v–297v.

<sup>110</sup> Handsch dedicated a long poem to von Dietrichstein in which he referred to the years they spent together, first at Collinus' school in the Angel's Garden, in Prague, and later in Padua, but he did not mention any financial support or express his gratitude, something he was not usually reluctant to do (*ibid.*, foll. 248r–250r).

<sup>111</sup> Cod. 9666, fol. 1v: "Doctor Gallus vult me mittere in Italiam cum filio suis sumptibus".



Attending an Italian university must have seemed an obvious choice in the case of Giulio Gallo. His father had studied in Padua and, before coming to Prague, had practiced in Trento.<sup>112</sup> To Handsch, going to Padua came with another tangible benefit: medicine was taught in Padua in the arts faculty.<sup>113</sup> And this meant that, unlike with other universities, students wanting to enroll did not have to show the master's degree that he had never earned.

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**112** For Gallo's biography see Span, *Epicedion* (1560). According to Span Gallo spent the last twelve years of his life, i.e. from about 1548, in the service of the Habsburg court; before that he practised medicine in Trento. He had two other sons, Guglielmo and Ludovico. For Gallo's correspondence with Sigismondo Thun see Quaranta, *Medici-physici trentini* (2019) pp. 62–73.

**113** Bylebyl, *Medicine* (1985); only the students of law had a faculty of their own.

# The Study of Medicine

In the sixteenth and seventeenth centuries, students from north of the Alps flocked to the universities of Northern Italy, mainly Padua and Bologna. Although there were quite a number of universities north of the Alps that had their own faculties of medicine, a Europe-wide comparison yields striking differences. At most of the late medieval universities in German-speaking areas – and the situation was similar in England and large parts of France<sup>114</sup> – the faculty of medicine played a rather insignificant role.<sup>115</sup> It stood in the shadow of the arts faculty and the other two higher faculties, theology and law. Some faculties of medicine employed only a single professor and even in places where there were two or three professors of medicine, they were often little known, unrenowned individuals. The number of medical students was also very modest in most cases and the number who received a medical degree was even smaller. According to the matriculation records in Cologne, for example, only about 0.4 percent of students studied medicine there in the time between the late fourteenth and the early sixteenth centuries.<sup>116</sup> During about the same time period in Erfurt, there was a total of sixty-four medical graduates, including those who had followed up their studies in the local arts faculty with medical studies. Medical scholars and students there did not even have their own lecture hall.<sup>117</sup> And even in Basel, where at the end of the sixteenth century a considerable number of medical students received their doctorates, the situation was described as unsatisfactory by Georg Keller: of the two professors, one, Johannes Huber, was considered a practitioner more than anything else and the second, Isaak Keller, did not enjoy a good reputation.<sup>118</sup>

At the leading universities in Italy – and the same was true in France in Montpellier and Paris – the situation was very different. There medicine was more or less on par with the two other higher faculties with respect to the number of students and lecturers, but also with respect to status, and this found expression not least of all in the remuneration of the professors. In addition, a certain degree of religious tolerance was extended, at least to foreigners.<sup>119</sup> Accordingly,

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**114** Lunel, Maison (2008), p. 31.

**115** On medical education in the universities of the various European countries, see Siriasi, *Medicine* (2001); with a focus on the German universities Nutton, *Medicine* (1997), pp. 173–190 and on those in the Netherlands Lindeboom, *Medical education* (1970), pp. 201–234.

**116** Abe, *Medizinische Fakultät* (1974), p. 26, on the figures for Cologne.

**117** *Ibid.*, p. 28.

**118** Schieß, *Briefe* (1906), p. 11.

**119** Although Johann Schwartz was full of praise for the University of Padua in the 1570s, he preferred to take his doctorate in Basel because he would have had to take a papal oath in

the aforementioned universities attracted many medical students from north of the Alps.<sup>120</sup> Precise numbers are lacking, but a look at physician biographies even suggests that it was more a rule than an exception for physicians from German-speaking areas to do their training (and often receive their doctorates) in Italy or the south of France until well into the sixteenth century.<sup>121</sup> This gradually began to change in the second half of the sixteenth century when Basel and Wittenberg increasingly attracted medical students.

By far, the most predominant form of transferring knowledge at universities across Europe throughout the entire early modern period and for all disciplines was the *lectura*, the lecture.<sup>122</sup> Lectures gave shape to teaching activities and set the daily, weekly, and annual rhythm of academic life. In Padua and Montpellier, but also in Ingolstadt for example, the lecture period ran from late autumn to early summer.<sup>123</sup> In Padua, the anatomical demonstrations were held over the Christmas holiday,<sup>124</sup> and the winter carnival in nearby Venice caused long interruptions. As Georg Keller complained, no *collegia* were held during his first year in Padua between January 21 and March 4.<sup>125</sup> Teaching activities were sometimes disturbed for even longer periods by epidemics. In times of pestilence, students found themselves needing to move to other university towns that had not yet been affected – if they were still allowed to do so. In his letters, Georg Keller described the drastic measures to which everyone, including of course students, was subjected when the plague befell Padua in 1555. Houses that were suspect were barricaded, the town gates closed. He had already experienced something similar in Paris.<sup>126</sup>

Generally, lectures were held in the morning and in the afternoon, five days a week. Usually no lectures were held on one workday. The university in Padua

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Padua (HStA Stuttgart, A 282, Bü 1301, supplication by Johann Schwartz to Duke Ludwig of Württemberg, submitted 26 April 1576; *ibid.*, letter from Schwartz' father-in-law, Samuel Heiland, 6 April 6 [1575]).

**120** Cf. Germain, *Les pèlerins* (1878), vol. 1, pp. 161–181.

**121** See also Dotzauer, *Deutsches Studium* (1974).

**122** Overviews of medical education in the sixteenth century in O'Malley, *Medical education* (1970), pp. 89–102; Talbot, *Medical education* (1970), pp. 73–87; Siraisi, *Faculty of medicine* (1992), pp. 360–387; Nutton/Porter, *History* (1995); Nutton, *Medicine* (1997), pp. 173–187; Brockliss, *Curricula* (1996), pp. 565–567; Siraisi, *Medicine* (2001).

**123** In Padua, the academic year was usually inaugurated on the day after All Saints' Day (Bertolaso, *Ricerche* (1958–59), p. 19).

**124** Adam, *Vitae* (1620), p. 205.

**125** Zentralbibliothek Zürich, Ms F 38, fol. 30bis r, letter from Keller to R. Gwalther, 10 March [1552]; cf. Schieß, *Briefe* (1906), pp. 7f., letter from Padua, 26 February 1551.

**126** Schieß, *Briefe* (1906), p. 18, letter, 4 October 1555.

was unique insofar as two professors who had the same areas of specialization would give their lectures at the same hour and would thus enter into direct competition with each other. When Joachim Curaeus went to Padua in 1557, Vettore Trincavella, for example, whom Curaeus considered to be the more learned professor, was competed against Antonio Fracanzano, who according to Curaeus knew better how to attract students with his well-chosen words.<sup>127</sup> In these circumstances it was especially important in Padua to coordinate the times of the lectures. Statutes precisely regulated the schedule. Immediately following the tolling of the morning bells, the professors for theoretical medicine would start the morning lecture. Unlike for professors with other specializations, they were required under the threat of disciplinary action to read for at least two hours. Subsequently, associate professors lectured on *medicina practica*. In the afternoon – until Easter at the 21<sup>st</sup> hour and after Easter at the 19<sup>th</sup> hour (in Padua, the first hour started at sunset the previous evening) – the associate professors of theoretical medicine delivered their lectures followed by the full professors of *medicina practica*.<sup>128</sup>

The term “lecture” has endured to the present day, but for the early modern period it is to be taken quite literally. In the traditional lecture, the lecturer read from an authoritative text, explaining the meaning sentence by sentence or passage by passage. Supported by a firm grasp of Latin, a basic knowledge of natural philosophy, and critical evaluation skills acquired through training in Aristotelian logic, prospective physicians gained significant knowledge during these lectures in which a professor introduced texts, interpreted difficult passages, and weighed conflicting opinions or tried to reconcile them.

With the so-called *Articella*, a certain canon of authoritative texts had already become established in the Middle Ages. The central texts of this collection of writing, which has its origins in the Salerno medical school, remained influential in the medical teaching of the Renaissance: the Hippocratic *Aphorisms* with Galen’s commentary, Hippocrates’ *Book of Prognostics*, and Galen’s *Ars parva* with the introduction (“Isagoge”) by Ḥunain ibn Ishāq (Iohannitius). Since the High Middle Ages, Avicenna’s *Canon medicinae* had served as a further central textbook. In contrast to the loose succession of the numerous writings by Galen and the short, largely unstructured propositions of the Hippocratic *Aphorisms*, Avicenna’s work offered a systematic survey of medicine as a whole and could thus serve as a first-rate textbook.<sup>129</sup> The curriculum that was set forth in the statutes of Padua in

<sup>127</sup> Adam, *Vitae* (1620), pp. 204f.

<sup>128</sup> Bertolaso, *Ricerche* (1958–59) gives a list of the holders of the individual chairs; the major early modern source is Facciolati, *Fasti* (1757).

<sup>129</sup> Avicenna, *Canon* (1595); Siraisi, *Avicenna* (1987).

1495 largely still corresponded with this traditional canon of writings. First-year students had to read the entire first book of the *Canon*, followed in the second year by the Hippocratic aphorisms and Galen's commentary and, if time permitted, Hippocrates' writings on prognosis. In the third year, Galen's *Ars parva* was next in line.<sup>130</sup>

With the rise of humanism, some physicians, buttressed by their excellent knowledge of Latin and Greek, made it their mission to significantly expand the traditional teaching canon. In their investigations of old manuscripts, they discovered medical texts of ancient authorities that had remained unknown thus far, especially those from the Hippocratic school and by Galen. Toiling collectively, they went through the collected Greek works of Hippocrates and Galen, producing numerous translations of the ancient writings in elegant, humanist Latin.<sup>131</sup> The spectrum of available writings was thus greatly expanded, so that Jacobus Sylvius, for example, in his *Ordo et ordinis ratio in legendis Hippocratis et Galeni libris* (1548), was able to list dozens of works by Galen, Hippocrates, and other authorities in thematic order. For university teaching, however, this richness also presented new challenges. In a disclaimer to his list, Sylvius commented that it would be exceedingly protracted and onerous ("longissimum et molestissimum") to treat all of these works in medical teaching. His personal selection was already extensive enough. As one could gather from his lectures, he limited himself to certain works for each of the different areas of medicine. He named about fifteen works in particular, most of them by Galen.

For some in the medical profession, medical humanism brought with it pronounced anti-Arab sentiment.<sup>132</sup> Certain physicians pulled Persian and Arabic physicians to pieces along with their "barbaric" medicine, and even wanted to see them banned from the medical curriculum.<sup>133</sup> Others considered a deficient translation of these works to be the problem. Even some of the humanist admirers of Hippocrates and Galen had to admit, however, that the writings they

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**130** Statuta (c. 1600 [?]), book 2, XVI; this is probably a later print – the statutes are clearly dated 1495.

**131** The literature on this topic is extensive; a good first orientation is provided by Durling, *Census* (1961); Bylebyl, *Medicine* (1985); Boudon-Miller/Cobolet, *Lire les médecins Grecs* (2004); Fortuna, *Latin editions* (2012). Vivian Nutton has explored various aspects of medical humanism in numerous contributions; see *idem*, *Diffusion* (2002); *idem*, *Hippocrates* (1989); *idem*, *John Caius* (1984). An excellent overview of the situation in Padua can be found in Bylebyl, *School of Padua* (1979).

**132** Germain, *La médecine arabe* (1877); Baader, *Medizinische Theorie* (1987).

**133** Cornarius, *Medicina* (1556), pp. 116–119.

had left behind were not nearly as extensive and thorough as Avicenna's systematic survey of the whole field of medicine in his *Canon medicinae*. It was not until the second half of the sixteenth century that the *Canon* was challenged by a serious competitor in the form of the *Universa medicina* by Jean Fernel (1497–1558). Based on Galen but developing his medicine further, Fernel gave a comprehensive overview of the entirety of theoretical and practical medicine, one that was comparable to the *Canon* but more readable, up-to-date, and succinct. His work remained very influential until well into the seventeenth century.<sup>134</sup>

As a result of the intensive editing and translation work of the medical humanists, the *Canon*, Rhazes's *Ad Almansorem* and other leading works of Persian and Arabic medicine gradually lost significance. In no way, however, did they become obsolete. At leading Italian universities as elsewhere, the *Canon* remained a pillar of medical teaching.<sup>135</sup> In Padua – and this is also shown by Handsch's extensive lecture notes – the *Canon* and *Ad Almansorem* still made up the core curriculum around 1550, along with Galen's *Ars parva* and the Hippocratic *Aphorisms*.<sup>136</sup>

The most important source in historical research about university teaching has traditionally been the historical statutes listing the set texts that were to be commented on in lectures. These lists, however, give an incomplete view of the actual lectures. Not only did they lag behind the actual teaching practice, frequently laying down what had actually been long established in teaching practice.<sup>137</sup> They also represent only a part of the teaching activity. Looking only at these lists, essential elements of medical training remain largely invisible.

A more precise and detailed picture of the medical teaching can be gained by looking at student notes. Happily, a wealth of such notes from the sixteenth century has survived, but not much of it has been systematically researched.<sup>138</sup> The notes vary widely with respect to the form they take. Sometimes students wrote down the lecture word for word. This went so far that they even reproduced forms of address such as “you young men” (“vos juvenes”), used by the

<sup>134</sup> Fernel, *Universa medicina* (1644); Sherrington, *Endeavour* (1946); Roger, Fernel (1960); Hirai, *Medical humanism* (2011), pp. 46–79.

<sup>135</sup> Siraisi, *Avicenna* (1987).

<sup>136</sup> Under the heading “leguntur Paduae”, Handsch explicitly listed the works mentioned – and only these (Cod. 11240, fol. 28r); even in the early seventeenth century there was still a chair in Padua with the denomination “Ad lecturam secundae fen primi Canonis Avicennae” (Bertolaso, *La cattedra* (1960), p. 113). On the humanistic reception of Galen's *Ars parva* see Mugnai Carrara, *Epistemological problems* (1999).

<sup>137</sup> Brockliss, *Curricula* (1996), p. 563.

<sup>138</sup> In the course of my research, I have so far been able to identify more than two dozen such handwritten lecture notes from Padua alone.

lecturer. It was also not unusual for them to retain the use of the first person (“ego”) in their notes when the lecturer made statements about his own experience or relayed his personal opinion. At the other end of the spectrum there are short, sketchy notes only about certain aspects that struck the student as noteworthy and important to remember. In Handsch’s Padua notebooks we find the whole range, from *dictata* to short, loose notes.

From Handsch’s notes as well as those of other contemporary students, two important developments come to light which find only very incomplete expression in the statutes. First, the professors did much of their teaching privately, outside the official, curricular courses, with smaller groups of students. As we will see, “private” lessons given to a limited group of paying students were especially important in teaching anatomy. They were, in fact, far more important in helping students gain anatomical knowledge and skills than the large public anatomy demonstrations which have so far been the focus of historical research on anatomical instruction in the early modern period.

Second, the sixteenth century saw an increase in the significance, at least at the Italian universities, of lectures with a thematic orientation. Here the professor did not comment on one specific text. Instead he would treat a certain subject area, drawing on the works of different authors and sometimes on personal, practical experience as well. Giovanni Battista da Monte was once more among the trailblazers who, as his student Girolamo Donzellini emphasized, not only explained authoritative works, but treated important subjects separately.<sup>139</sup> In Padua, Handsch heard the private lectures of Fracanzano on diseases of women and took notes during private, at-home lectures about stomach diseases, which were given by Trincavella on holidays.<sup>140</sup> Handsch’s notes on a lecture by Fracanzano about the French disease also give the distinct impression of a private lecture.<sup>141</sup> A couple of years later, another student in Padua took notes on Fracanzano’s *lectiones extraordinariae* on fever symptoms.<sup>142</sup> During those years, Bellocati lectured, again “extra ordinem”, about children’s diseases, while Trincavella, in

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**139** Da Monte, *Opuscula* (1558), vol. 1, dedicatory epistle by Donzellini to Giulio Alessandrini: “Solebat enim ille, praeter seriem authorum, quos explicabat, peculiaries aliquando tractationes facere, in quibus de rebus maxime necessariis auditores erudiebat, et ad autores ipsos exactius intelligendos magno eorum emolumento instituebat.”

**140** Cod. 11226, fol. 160v.

**141** *Ibid.*, foll. 92r-119r, from 16 December 1551; *ibid.*, foll. 123r-140r; cf. Fracanzano, *De morbo* (1564) (based on student notes on Fracanzano’s lectures in Bologna). Fracanzano taught in Padua from 1538, first logic and then medical theory. He went to Bologna in 1555 and returned to Padua in 1564 (Mantese, *Storia* (1969, pp. 64–66).

**142** Biblioteca dell’Arciginnasio, Bologna, Ms. A 46, title according to the heading of the index on fol. 143r.

addition to his lectures about Avicenna's writing about fevers as well as about Rhazes's teachings on the diseases of the head and chest, taught "extra ordinem" about "worms" and "arthritis".<sup>143</sup>

The authors of contemporary study guides put great emphasis on attending lectures. Johannes Brettschneider (aka Placotomus, 1514–1577), for example, stressed that in no way should students choose independent study over a lecture. He held that a lesson with a living voice ("viva voce") best allowed medical doctrine to be imparted as the voice had something of a "hidden energy" ("energieae latentis"). No one could learn the *pensum* of a lesson on his own with equal success.<sup>144</sup>

The transcripts of good lectures were, however, valuable to students who could not attend the lecture. Some lectures were even printed and published from student notes. It seems a certain demand for them was to be expected. And students would also request handwritten copies of lecture notes from each other.<sup>145</sup> Such a copy of a lecture, written in another man's hand is also found among the manuscripts in Handsch's *Nachlass*. It was a lecture that Augustin Schurff had given years earlier in Wittenberg, and Handsch wrote his own supplementary notes in the margins.<sup>146</sup>

Not only were students urged to attend lectures; intensive preparatory and follow-up work was also recommended. Student guidebooks like the one by Brettschneider even advised students to read the passages from an authoritative text that were to be addressed in the lecture at home beforehand. After the lecture, they were then supposed to carefully go through their notes and excerpt the most important topics, theorems, problems, and questions in a *diarium*. It was also said to be useful to talk and compare notes with other students, since presenting to others what one had learned was a good schooling for the mind. At the end of the week, it was then advisable to go through the week's notes, now organized thematically, and to enter them in a second, permanent notebook, one that allowed entries on certain subjects to be looked up and the grasped material to be committed to memory. It was furthermore recommended to learn one

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**143** Adam, *Vitae* (1620), p. 205.

**144** Placotomus [Brettschneider], *De ratione* (1552); Adam, *Vitae* (1620), p. 204 attributes the same notion to Joachim Curaeus.

**145** See e.g. Planerio, *Epistolae* (1584), letter to Franciscus Ticinensis, 1 January 1536, responding to a request for a copy of the "lectiones ordinarias".

**146** Cod. 11228, "Annotationes in Nonum Rhasis ad Almansorem dictatae a doctore Augustino Schurphio in schola Vitebergensi Anno 1537". In the back cover, we find the name "Hanns Adlerus", possibly the name of the writer; in the *Corpus Inscriptorum Vitebergense*, however, no student of this name can be found (<https://www.civ-online.org/de/service/startseite/>).



theorem by heart every day. Within just a year, one would thus gain a considerable wealth of knowledge.<sup>147</sup> Such recommendations were taken to heart. Georg Handsch sketched a very similar two-step process. From one's unorganized lecture notes it was advisable to first gain an overview of the subjects that had been treated and then to enter the notes in a book, organizing them under different headings.<sup>148</sup>

Above and beyond the lectures the students also – and this was expected of them – studied the medical literature independently. The long summer vacations in particular provided opportunity for this. Some students appear to have acquired their medical knowledge almost exclusively from reading books. This was particularly true of those who started out in other areas and earned their living doing non-medical activities. The thirty-seven-year-old humanist and poet Helius Eobanus Hessus, for example, a long-time teacher of Latin at the University of Erfurt, said he had been reading Galen's works for a long time and it seemed to him that he had gained extensive knowledge of medical theory. All he was missing, he said, was practical experience and the doctor title.<sup>149</sup>

Contemporary reading- and study- guides provided extensive recommendations for students on how they could work methodically and commit what they read to memory. It was important first of all to make a careful selection of authors and works. In his *De ratione discendi medicinam epigraphe*, Girolamo Mercuriale asserted that one should concentrate on the recognized authorities. Students were warned not to attain their medical knowledge from compendia or summaries. According to Mercuriale, one should even avoid reading commentary if possible; it was better to penetrate the text oneself. The only exceptions here were the works of Hippocrates, with its dark passages, and Avicenna's *Canon*.<sup>150</sup>

The study guides recommended concentrating on not more than a few works at the same time. As Brettschneider put it, the person who ate too many dishes at once ruined his stomach and the same was true of reading.<sup>151</sup> Mercuriale made the specific recommendation that only one or two authors should be studied closely at once; they should be read each day at the same time, preferably in the early

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**147** Placotomus [Brettschneider], *De ratione* (1552).

**148** Cod. 11239, fol. 100v.

**149** Hessus, *Helii Eobani Hessi* (1543), pp. 112–115, Brief an Georg Sturtz, 14.3.1525 ([www.aerztebriefe.de/id/00013019](http://www.aerztebriefe.de/id/00013019), M. Bleistein); Hessus asked Sturtz, who had left Erfurt and settled as a physician in Annaberg, for support, just as he had given it to his student Euricius Cordus; in a subsequent letter to Sturtz, dated 5 June 1525 (*ibid.*, pp. 118–9), Hessus also referred to his medical studies.

**150** Mercuriale, *De ratione* (1607); see also Durling, Girolamo Mercuriale's *De modo studendi* (1991).

**151** Placotomus, *De ratione* (1552), no pagination.

morning hours and in the evening.<sup>152</sup> It was helpful, in Johannes Brettschneider's view, to proceed from the simple and general to the more specific. Not all books required the same amount of study. Some had to be read again and again ("crebro"), while others needed to be picked up only a few times or once.<sup>153</sup> Despite these qualifications, the long lists of recommended authors in reading- and study guides indicate a reading load far too great to be reasonably tackled.<sup>154</sup> Mercuriale further underlined to prospective physicians the importance of reading the poets and historians: Homer, Hesiod, Lucretius, Virgil, Horace, Juvenal, Martial, Columella, Vitruvius, Herodotus, Strabo, Pausanias, and others. Galen for his part quoted from them repeatedly and thus, according to Mercuriale, it was appropriate to branch out and collect whatever served the enrichment and adornment of medicine.<sup>155</sup> Not surprisingly, when Isaac Habrecht prefixed his notebook from around 1600 with an extensive list of well over sixty ancient and contemporary works, these writings found only very limited expression in his excerpts. For the most part, his notes focused on introductory *institutiones* and surveys like those by Jean Fernel and Leonhard Fuchs.<sup>156</sup>

## Theoretical Medicine

In *medicina theorica*, students first learned to grasp the essence of medicine, to define it and to name its various branches. One of Handsch's Padua notebooks accordingly offers an overview of the terminology and classifications as we know them from numerous printed works of the time.<sup>157</sup> The source of his knowledge is unclear, but the systematic approach and the occasional rejection of certain parts of academic wisdom point to a lecture, perhaps by Bassiano Landi.<sup>158</sup> He began with Galen's oft-cited definition of medicine: medicine was the art that protected existing health, improved impaired health, and restored lost health.<sup>159</sup> As Handsch noted, speaking of health that was only "impaired" – as opposed to

<sup>152</sup> Mercuriale, *De ratione* (1607), pp. 34–35.

<sup>153</sup> Placotomus, *De ratione* (1552).

<sup>154</sup> Stainpeiss, *Liber* (1520); cf. Pawlik, Martin Stainpeis (1980); Pons, *Medicus* (1600).

<sup>155</sup> Mercuriale, *De ratione* (1607), p. 25.

<sup>156</sup> Det Kongelige Bibliotek, Copenhagen, Ms. Gl. Kongl. 4 1691, medical notes of Isaac Habrecht (1606).

<sup>157</sup> Cod. 11210; the title which Handsch gave to it was "Compendium medicinae collectum Patavii A[nn]o 1551".

<sup>158</sup> On Landi see Ferretto, Bassiano Landi (2006–2009) and Ferretto, Maestri (2012).

<sup>159</sup> Cod. 11210, fol. 2r: "Est ars quae sanitatem praesentem custodit, viciatam emendat, et amissam restaurat".

“existing” and “lost” health – referred to a Galenic concept that was heavily discussed at the time, that of a “neutral state” between disease and health.<sup>160</sup> Medicine was a “scientia” insofar as it considered the causes of illness, the nature of human beings, and the efficacy of medicines. At the same time, it was a craft or an “acting art” (“ars factiva”), insofar as it was practiced. Its subject was the human body; its goal was health.<sup>161</sup> This was a goal it could not always achieve, however. What was crucial was to act in such a way that health was served, even if success sometimes failed to materialize.<sup>162</sup> Medicine consisted of a preventative and a curative part. Curative medicine consisted of medicinal, dietetic, and surgical or manual treatment.<sup>163</sup>

According to Handsch’s notes, this was followed by a short overview of ancient medical schools after Galen. The following distinction was another topos of contemporary medical literature: on the one hand, the “empiricists” (“empirici”) treated diseases based only on their experience (“suis experimentis”), without reason (“ratio”) and judgment (“iudicium”).<sup>164</sup> The “dogmatic” (“dogmatici”) or “rational” (“rationales”) physicians on the other hand considered human nature and the causes and fortuities of diseases on the basis of early, present, and future signs and used remedies on patients with rationality and the most finely-attuned ability to judge (“exquisito cum iudicio”).<sup>165</sup> According to Galen, reason (“ratio”) and experience (“experientia”) were the legs on which medicine stood.<sup>166</sup>

Essential for a rational, scientific approach as per contemporary standards were the fundamental principles of natural philosophy. Knowledge based on natural philosophy about the construction, the faculties, and the functions of the human body and its parts – which is to say, knowledge about *physiologia*, as it was already called at the time – was indeed an indispensable requirement for the understanding, the diagnosis, and the treatment of illnesses.

Aspiring physicians were told and they read that the human body was composed like everything in nature of the four elements: fire, earth, water, and air. To each of these a combination of two of the four primary qualities – hot, cold, dry, and moist – was assigned. Naturally, what was even more important in understanding the human body and its functions were the four humors, whose

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**160** Joutsivuo, Scholastic tradition (1999).

**161** Cod. 11210, fol. 2r.

**162** Ibid.

**163** Ibid., fol. 2v; the third medical sect commonly discussed in this context were the methodists who attributed diseases to an excessive widening or narrowing of the ducts in the body.

**164** Ibid.

**165** Ibid.

**166** Ibid.

existence ancient medicine had already postulated on the basis of the teaching of the elements: yellow and black bile, phlegm, and blood. As with the elements, each of these was assigned a pair of primary qualities. Yellow bile was hot and dry; black bile was cold and dry; phlegm was cold and moist; and blood was hot and moist. The individual combination of the four humors in the body resulted in the temperament of the person in question, or, with respect to the qualities, in the person's *complexio*. Temperament or *complexio* was often recognized in external features such as the color of the hair and face. The English word "complexion" still denotes facial color or countenance today. The humors also, however, had a far-reaching effect on what was taking place within the body and they determined not least of all the temperament as we define it today. If yellow bile predominated, the resulting "choleric" (from Greek, *chole* = yellow bile) temperament would lead to a tendency toward fits of anger. If, on the other hand, viscous, slimy phlegm was predominant, one could expect a thoughtful or even sleepy nature – a "phlegmatic" nature as we still say today. The individual combination of humors and qualities was innate, but it was subject to change with age and the influence of the external environment.

To properly understand the physical functions and processes within the body, it was essential to have a knowledge of the body's faculties, the so-called *facultates* or *virtutes* such as the *facultas expulsiva*, the *facultas motrix*, and the *facultas cogitativa*. From today's perspective, they may seem like a mere theoretical construct, even like empty words, but from the perspective of the time, they were indispensable to understanding human (and animal) physiology. They emerged from Aristotelian natural philosophy, according to which every motion and thus every change had an efficient cause. In the healthy human body, changes were constantly at work: matter was moved, food was assimilated, excretions were taking place, and a host of further functions were carried out, all without an identifiable source of the movement and change. Even if a movement could be traced to a person's will, there was still the question of how a decision made by the immaterial soul could have the very concrete effect of moving a finger or the leg. This gap was filled by the concept of nature in general but in particular by its concretization in the *facultates*. Handsch noted a succinct definition: "The faculty ["virtus"] is the cause that precedes the action."<sup>167</sup> And, conversely: "when the faculty perishes, there is no action."<sup>168</sup>

Three general *virtutes* or *facultates* were to be distinguished which "governed" ("gubernant") and preserved the body. Handsch made a carefully

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<sup>167</sup> Ibid., fol. 41v.

<sup>168</sup> Ibid., fol. 42r: "Si facultas perit, nulla sequitur actio."

subdivided list here. First there was the mental faculty, the *facultas animalis*, which had its seat in the brain and communicated sensations and conscious, deliberate movements via the nerves. Cognitive faculties in a narrower sense were subdivided into the imagination, judgment, and memory. Second, there was the *facultas vitalis*, which had its primary seat in the heart. And third, there was the *facultas naturalis*, the natural faculty that ensured the alimentation of the body.<sup>169</sup>

The vital and the animal faculties – whether the natural faculty could be included here remained subject to debate – required a material instrument that would allow them to take effect not only in their particular location but throughout the whole body. This came in the form of the *spiritus*, a further key concept of contemporary physiology. The *spiritus vitalis* was, as we find in the standard definition noted by Handsch, a “subtle, airy, transparent substance that is produced from the most delicate part of the blood so that the faculties can be taken from the main parts to the other [parts], so that they can carry out their specific activities”.<sup>170</sup> This *spiritus vitalis* was generated with the help of the innate, vital heat (“*insiti et nativi caloris causa existens*”). It was produced in the left chamber of the heart from delicate blood and inhaled air and it flowed through the arteries into the rest of the body.<sup>171</sup> Parts of this *spiritus vitalis* were refined in the brain or, as Handsch wrote, in the *plexus reticularis* to become the *spiritus animalis*, or animal spirit, which spread throughout the entire body via the nerves and was responsible for movement and sensation.<sup>172</sup>

A central task of the natural faculties and of vital heat, the *calor innatus*, was the assimilation of ingested food. This process had presented learned physicians with a puzzle since antiquity. How was the body able to quite literally assimilate the wild mix of comestibles that it took in daily, producing material that belonged to the body, as the growth of children and adolescents so impressively illustrated? How could milk, grits, porridge, bread, and the like be made similar to or indeed transformed into bodily substance, into muscles, bones, and individual organs? In the case of adults, the necessity of the constant assimilation of food that was foreign to the body was not quite as apparent.<sup>173</sup> Stories of young women who had reportedly not eaten for years lent credence to the idea that the human body was not crucially dependent on a constant intake of food. These apparent miracles of fasting were, however, a frequent subject of controversy among physicians and were sometimes exposed as frauds – for example when the woman said to be

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<sup>169</sup> Ibid., fol. 41v.

<sup>170</sup> Ibid., fol. 42v.

<sup>171</sup> Ibid.

<sup>172</sup> Ibid., foll. 42v-43r.

<sup>173</sup> Ibid., fol. 50r.

fasting had, as it turned out, drunk her mother's breastmilk when she came to visit.<sup>174</sup> Physicians assumed that the adult body, too, required constant nutrition because it was always using up or losing substance and it needed to offset this loss. Handsch noted: "Children and adolescents eat so that they may grow, [while] adults eat only to preserve their bodies".

Models explaining the process by which food was assimilated had already been developed by ancient physicians, and constituted basic knowledge that every aspiring physician in the early modern period had to learn. To summarize the essential: Galenic medicine described the assimilation of food quite literally as a cooking process. Just as food was cooked on the kitchen stove, vital heat within the body concocted the ingested food in several steps, separating that which was of use – so that it could be appropriated by the body – from the useless, which had to be excreted.<sup>175</sup> In a first step – and this was also learned by Handsch – food was concocted in the stomach. Useless, coarse, and dry matter was excreted as feces via the bowel. Via the abdominal veins, the more delicate matter was transported as liquid food or *chymus* to the liver, where in a second step it was concocted to become nutritious blood that made its way to all parts of the body through the veins. Unusable matter was also separated out in this second concoction process; it was transported for the most part to the gall bladder as yellow bile and ultimately emptied into the bowel. Further substances were carried to the spleen as black bile. The superfluous watery matter, finally, accompanied the blood first in the large vena cava but was then attracted by the kidneys together with some of the blood and excreted through the urinary tract.<sup>176</sup> The third step in the concoction process took place in the individual body parts, which took from the blood the matter that they were able to appropriate. The unusable parts, destined for excretion, which resulted also during this last concoction process, either went back to the blood and were finally excreted with the urine or they left the body as imperceptible perspiration ("transpiratio insensibilis") or as visible sweat through the numerous pores of the skin.<sup>177</sup>

Each organ thus fulfilled a different function. The stomach and liver primarily served to concoct food into blood. The kidneys, spleen, bladder, skin, and bowels, on the other hand, were excretory organs first and foremost. The lungs, too, belonged to the latter insofar as they not only cooled the hot heart but also freed the body of fumes. The heart and brain took prominent positions. The heart was where *spiritus vitalis* was produced, while in the brain the *spiritus animalis* was

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<sup>174</sup> Pulz, *Nüchternes Kalkül* (2007).

<sup>175</sup> Da Monte gave a good summary in his introduction to Da Monte, *Lectiones* (1552).

<sup>176</sup> Cod. 11210, fol. 80v, here in the context of the theory of the origin of urine.

<sup>177</sup> *Ibid.*, fol. 67r.

generated, which communicated between the immaterial soul and the body in the ventricles of the brain; they were considered the true location of the faculties of understanding.<sup>178</sup>

## Practical Medicine

Learning the theoretical, natural-philosophical foundations of medicine was only one of the pillars of medical training. *Medicina theorica* was complemented by *medicina practica*. This division must not be misunderstood.<sup>179</sup> The teaching of *medicina practica* was also largely theoretical and based on lectures about authoritative texts with commentary. The difference, however, was that the lectures in *theoria* were primarily directed at general natural-philosophical and epistemological foundations, while teaching in *medicina practica* put pathology at the center, the etiology and pathogenesis of particular diseases and, based on this, diagnosis, differential diagnosis and – especially in the context of pharmacology – therapy.

In the hierarchy of the disciplines, practical professorships stood for some time below theoretical ones, something that also found expression in professors' salaries. The typical career of a successful university professor thus began with a professorship in practical medicine and led to one in theoretical medicine. Even Giovanni Battista da Monte, known today above all as a clinical teacher, followed this trajectory in Padua. In the course of the sixteenth century, however, this relationship began to reverse, indicating the effects of an overarching development that we will encounter again and again in this book, namely the growing appreciation among learned physicians of the practical knowledge and skills that were indispensable to successful diagnosis and treatment.

Handsich heard a number of lectures on the canonical texts and the specific subject areas of *medicina practica*. Over time, he complemented his notes on these lectures with many more notes, often based on actual experiences with patients or on what he heard from colleagues. Clearly, the foundation he acquired as a student proved helpful during his time as a physician. In 1551, for example, he attended a lecture by Vettore Trincavella on pathology as discussed in the ninth book of Rhazes's *Ad Almansorem*. According to Handsich's notes, which appear to relay the lecture word for word, Trincavella gave a detailed presentation

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<sup>178</sup> A good, widely quoted overview was given in the early seventeenth century by Daniel Sennert (Sennert, *Institutionum* (1620)).

<sup>179</sup> Bylebyl, *School of Padua* (1979), pp. 337–339.

of the different forms, causes, and treatments of headaches, palsy, tremors, and melancholy. After about 160 pages, however, Handsch's notes end with catarrh. Trincavella had not even completely covered the diseases of the head up to that point.<sup>180</sup> To these notes Handsch added notes from lectures by Alvise Bellocati about the sections in the ninth book of Rhazes's *Ad Almansorem* on the diseases of the chest and abdomen.<sup>181</sup> He also included an excerpt of notes from G. B. da Monte's lecture on pathology according to Rhazes.<sup>182</sup> Further notes on various private lectures were included as well, for example by Fracanzano about fever, female diseases, and the *morbus gallicus*, as well as by Trincavella about stomach diseases.<sup>183</sup> Nevertheless, Handsch's notes in their surviving form remain piecemeal. Systematic notes by his hand or even lectures transcribed verbatim on the entire thematic spectrum of *medicina practica*, on all diseases from the head to the foot and on fevers, are not extant. Possibly to make up for this lack, Handsch obtained for himself an extensive, 250-page-long transcript, which survives in his *Nachlass*, of a lecture given by Augustin Schurff in Wittenberg in 1537. In the lecture, Schurff covered all subjects presented in the ninth book of *Ad Almansorem*.<sup>184</sup>

Following Galen, learned medicine in the sixteenth century defined itself as a decidedly rational undertaking. This self-image arose not only from its basis in natural philosophy but even more so from its strict methodological approach.<sup>185</sup> The positive experiences made by trying certain medications and other treatments on certain disease patterns might be a satisfactory basis for treatment to "empiricists", but for learned physicians who followed the Galenic motto "ratio et experientia", it was important to be able to get to the bottom of things and recognize the cause of the complaints and the disease itself. As Da Monte and other professors advised their students, it was only in this way that the disease and its cause could be eradicated, literally pulling the disease out by the roots with a "radical" treatment; the term "radical" comes from the Latin "radix" for "root". Not getting to "root", on the other hand, meant that one was contenting oneself with merely a

**180** Cod. 11226, foll. 2r-82r.

**181** Ibid., foll. 149r-175v and foll. 182r-207v.

**182** Cod. 11240, foll. 9r-26r.

**183** Cod. 11226, foll. 92r-119r and fol. 160v.

**184** Cod. 11228.

**185** Wightman, *Quid sit methodus* (1964). It was in this spirit that Fonseca recommended to the budding physicians in his theory of fevers to follow "prae caeteris exactissimam methodum, sine qua nihil recte vel scribi, vel operari potest" (Fonseca, *Opusculum* (1596), p. 4). A detailed discussion of the teaching of method and its significance for Paduan medicine can be found in Ferretto, Bassiano Lando (2006–2009) and Ferretto, Maestri (2012). On method in contemporary philosophy in general see Leinkauf, *Philosophie* (2020), pp. 48–81.