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- 1 *Opera Mesuae* is a compilation of four texts: *Canones universales*, *De simplicibus*, *Grabadin*¹, and *Practica*. These four texts originated in roughly ten Hebrew, some Italian, and more than seventy Latin manuscripts circulating in Europe from the thirteenth to the eighteenth century². From the late fifteenth to the early seventeenth century, Mondino de Liuzzi, Giovanni Manardo³, Jacques Dubois (Jacobus Sylvius; who was also responsible for the Neo-Latin translation), and Giovanni Costeo added commentaries and additions to subsequent editions of *Opera Mesuae*. In the following pages, I show that this medical database is at the crossroads of translation, exchange, humanistic rhetoric, the medical schools of Italy and France, printing, and transnational conversations. In comparing a number of entries by Manardo and Dubois, I situate both practitioners within the disputes about simples that aimed to re-evaluate the Islamic world's contributions to science and medicine. The medical condition that will serve as the central theme will be the plague.

Opera Mesuae: A Crossroads

- 2 The early Abbasid physician Yuhanna ibn Māsawayh (d. 857), also known as Mesuë, claimed that sucking an acrid pomegranate or plum, and eating lentils, Indian peas, and pumpkin seeds would stave off the pestilence. Drinking sour fluids made from lemons, pomegranates, grapes, and onions would likewise keep the sickness away, as would eating a pickled onion every day before breakfast⁴. Mesuë also mentioned “pomi” (apples), that is, either “pomum ambrae” or smelling apples, as Avicenna would

likewise do⁵. The early printing of the works of Mesuë were done so under the name of Ioannes filius Mesuae, filii Hamech, filii Hely, filii Abdela regis Damasci, who was either an Egyptian medical authority, according to both Symphorien Champier and Leo Africanus, a ninth-century Nestorian Christian physician, or an eleventh- or twelfth-century Italian practitioner⁶. The first part of the *Opera Mesuae* considers theoretical explanations concerning physiology and the general indication and effect of laxatives (*Canones universales*), the second part discusses untreated simple remedies (mostly vegetabilia) in fifty-four chapters (*De simplicibus*), the third offers complex remedies or composite drugs in twelve chapters (*Grabadin*), and the fourth is an all-encompassing therapeutic (*Practica*). In 1542, Jacques Dubois (Sylvius) published a new version, which was re-issued nine times, as well as four times together with the “versio antiqua”, before 1566⁷. Of the Latin text, we know of roughly sixty print editions until 1623, to which we must add several complete works by Dubois of which the first dates from 1630⁸. Starting with the edition printed in Venice in 1490, the commentary of Mondino de Liuzzi or Mondinus (ca.1270-1326) is added and as of 1537 the additions of Giovanni Manardo (1462-1536). The five Venetian editions from 1568 to 1623 feature the additional commentary of the editor Giovanni Costeo (d. 1603), mainly for the *De simplicibus*. Dubois's translation helped both learned doctors and non-academic apothecaries, not only because the Latin compilation published under “Ioannes filius Mesuae” represents the only book in the West that gives in detailed form the theory of laxatives and their preparation and application, but also because the original version, apparently from Arabic sources, was done in such “barbaric” Latin that it is readable only with difficulty⁹.

- 3 Whether Mesuë-Māsawayh actually wrote these works can be debated, as can his identity. What is important in the context of Franco-Italian medical exchanges during the Renaissance is the fact that Mesuë's writings are associated with the Arabic world and medical tradition – they therefore would have provoked certain resonances for Renaissance users. According to Arabic sources, Mesuë was “a sagacious, learned physician, experienced in the art of medicine as well as a good stylist and the author of well-known treatises”¹⁰ who turned his Baghdad home into a literary salon (“mujalasa”)¹¹. Ibn Abi Usaybia, in *Kitab Tabaqat al-Attiba* (*The Best Accounts of the Classes of Physicians*, first published in 1245-1246), describes the meteoric rise of this medical practitioner who started out as a successful oculist and who gradually worked his way up into the favour of caliphs and kings against many competitors:

The teaching sessions of Yūḥannā ibn Māsawayh attracted the largest audience of any I have seen in the city of Baghdad, whether conducted by a physician or theologian or philosopher, for every type of educated person assembled there. Yūḥannā was endowed with a great capacity for being funny, which was part of the reason for the large gatherings. His impatience and irascibility surpassed even those of Jabrāʾil ibn Bukhtīshūʿ, his sharpness expressing itself in droll statements. His teaching was especially enjoyable in the sessions when he examined phials of urine.¹²

- 4 In addition his brother, Mīkhāʾil ibn Māsawayh, was personal physician to the caliph al-Maʾmūn¹³. The name Mesuë was thus well known and any publication using it until well into the seventeenth century would have invoked the medical tradition with which it was associated. The database of Mesuë-Māsawayh, far from being spurious, is instead a compilation on a par with Albucasis, Rhazes, Avicenna's (Ibn Sina's) *Canon of Medicine*, and its commentaries equal those of Ibn Abi Hajalah¹⁴, the Salernitan Rule of Health (*Regimen Sanitatis Salernitanum*), the Cremona translations, or Lemnius Levinus' *The*

Secret Miracles of Nature (1559)¹⁵. Elsewhere I have argued for Mesuë's widespread use in a chapter on purging and rhubarb¹⁶. Here, I would like to pursue the importance of purging in the context of epidemics and in particular the plague, given that many if not all of the plants listed in the early modern database *De simplicibus* can be used to fight the plague.

Nomenclatures of Plague

- 5 One of the issues in diagnosing early modern plague is that, on one hand, doctors and patients noticed its ubiquity (divine scourge theory) and, on the other hand, they saw that it spread dissimilarly over time and space. The reason for plague's universality, in medieval physicians' eyes, was that "celestial events could, through a series of intermediate changes, corrupt the substance of one or more of the four elements" (humoral theory).¹⁷ Air as the most important conduit (in its early modern definition as cosmological medium, world soul, and human soul) could be altered so that it would draw pestilential vapours from polluted places and waters (miasma theory).¹⁸ From early modern reports on epidemics, we glean common symptoms of the plague: fever, shivering, local pain in armpit or groin, buboes in armpits or groin, headache, nausea, and vomiting, resulting in high case mortality and few survivors. For the severe plague, symptoms would extend to coughing, coughing up blood, incessant vomiting, petechiae (rashes) and purple skin, and carbuncles, with the patient dying after two or three days¹⁹.
- 6 Most doctors treated pestilential fevers and the skin ailments, that is, the physical expressions of the scourge, but many also recommended the management of the "six non naturals" – the aspects of an individual's daily life that could be altered to reduce the danger of falling ill²⁰. Because many plague treatises held the illness or its victims to be contagious, they also recommended intensive environmental management of the sickroom, the isolation of the patients, the bypassing of crowded spaces, confinement in the countryside, escape, and interruption of travel²¹.
- 7 The rapid progress of the plague, the inability to pinpoint its source (until the discovery of the *Yersinia pestis* bacterium in 1894), and ideas of contagion²² made prevention necessary through empirical means. Preventive measures consisted of extra layers of clothing and plague masks that contained herbal powders mixed with vinegar, or the chewing of roots, such as angelica archangelica (wild celery)²³. Houses and sickrooms were disinfected by overheating and fumigating them to chase foul air, or by cleaning them with vinegar; clothes were purified through the fumes of herbal suds, mail was smoked, and money was washed in suds. Corpse washers and shrouders used germander (teuricum scordium)²⁴ while both quacks and respected medical practitioners offered anti plague elixirs, theriac, and alchemy to vanquish a contagious disease localised in persons and places.
- 8 One of the main remedies for fighting the various abnormal states of the body due to the pestilence was purgation (such as evacuation of the bowels, vomiting, expectoration, gargling, sneezing, or sweating), which could be undertaken in conjunction with bloodletting, a means to reduce "excess of blood". Ibn Khatimah (d. 1369), for example, in his plague tract *Description and Remedy for Escaping the Plague* (c. 1349), suggests a decoction of prunes and breastberries with sugar and tamarind – this

could be taken on an empty stomach and would both purge (prunes) and soothe (breastberry, a potential narcotic)²⁵. Alfonso de Córdoba's recipe in *Letter and Regimen concerning the Pestilence* (1348) recommends patients purge with pills of Master Nicolai²⁶ and with dissolved theriac: "purgetur cum pillulis magistri Nicolai et cum teriaca dissoluata. Cum aqua scabiosae purgatur saepius locus cordis et hoc reiterari, quotiens necesse fuit, quosque perfect curetur". One should avoid strong and malignant medications, because those frequently made patients die of dehydration and intestinal flux; instead, one should administer cassia fistula, tamarind, rhubarb, violets, prunes, and the occasional clyster: "Caveatur a forti medicina et maligna, quia tales frequenter per fluxum ventris moriuntur. Sed cassia fistula, tamarindi, reu barbarum, viole, pruna, et quandoque clisteria possunt administrari."²⁷ Thick cooked quince juice with bolus rubra (red clay-rich earth) was effective against diarrhoea, and clysters (enemas) were used to relieve dangerous intestinal accumulations²⁸. Favoured above all interventions, however, was the use of theriac, the traditional remedy against poison:²⁹ "Analgesic, sudorific, antitussive, antidiarrheal, and sedative, theriac was ubiquitous."³⁰ Given that this remedy could be composed of multiple ingredients, medicinal plants were of utmost importance. Moreover, they were also used for compresses or poultices, creams, salves, fumigations, drinks, and foods that were meant to restore the patient to health.

Medicinal Herbs against the Black Death

- 9 "Contra pestilentiam cithara usus est, quod non nisi ex vitigineo ligno esse poterat, quum mire vinum et acetum contra pestilentiam valeant. Vel ex lauro, cuius folia tusa, et olfacta, subinde pestilentia contagia prohibeant; Theophrastus scribit quosdam."³¹ "Against the pestilence, the cithara is used, only if it could be from the vitiginea wood, whereas wine and vinegar are remarkably valiant against the pestilence. Or from laurel, whose leaves are pounded, and well smelling, that stop every now and then the pestilential infections; Theophrastus writes such things."³² While some practitioners recommended medicinal music, most were inclined to prepare medications that they considered empirically helpful against an illness that manifested itself through bad smell. Such is the smelling apple likely referred to by both Avicenna and Mesuë above, though both mention "pomi" (apples) without the "ambra": "Equal parts of black pepper, and red and white sandal, two parts of roses, half a part of camphor, and four parts of bol armeniac. All but the camphor are to be ground very fine, sifted and shaken, pounded during a week with rosewater, then the camphor mixed with them, and the apples made with paste of gum arabic and rosewater."³³ This produced an apple-formed counter-corruptive, a portable remedy both preventative and curative frequent in early modern medicine. Amber would refer to either real amber that could be smoked or ambergris (gray amber), an expensive animal substance found in whale excrement. This rare and precious ingredient, named karabe in Arabic, was often confused with the less prestigious ambra, though early modern physicians fighting the plague seem to have known the difference³⁴. One of their likely sources, Mesuë, names both ambra-anbar, carabe-charabe-kharaba, and pomum-apples.
- 10 Common herbal remedies were choices of simples, often administered by themselves, in combination, or with narcotics, sedatives, and flavour-boosting spices. All parts of the simples could be utilised, such as blossoms, leaves, berries, roots, seeds, and resins. They could be applied in multiple forms such as fresh, dried, pulverised, or preserved

in vinegar, alcohol, wine, or vegetable oils. As drinks, they could be both cold and warm. The plant's effect determined its use against the plague, whether it was pain relieving, sudorific, thirst-quenching, diuretic, or stimulating to the heart. External applications could be compresses, embrocations, bath additives, ointments, dressings, amulets, smelling apples, smoke rituals, and tufts of herbs. They could be ingested as distilled alcoholic drinks or spirits, salts, essential and vegetable oils, pills, powders, herbal juices made from fresh plants, chewable products, foods, and medicinal wines and vinegars. Especially popular were the pimpermell and juniper, separately and in combination³⁵ in view of the theory of chasing like with like, but also as wood: scented woods, such as juniper, ash, and vine were used for burning to keep miasma or foul air at bay. It is here that Manardo and Dubois intervene.

Franco-Italian Approaches to Medical Substances: Manardo and Dubois

- 11 Giovanni Manardo (1462–1536), Niccolò Leonicensi's successor at the Ateneo in Ferrara, was a medical practitioner, botanist, translator, and astrologer who made himself a name through his commentaries on Galen's *Ars parva* (or *Ars medica*), which has earned him the epithet of "first modern Galenist"³⁶. Starting in 1521, he began to issue a series of *Epistulae medicinales* (*Medical Letters*), and in 1531, François Rabelais published volume two of these commentaries (books seven to twelve) in Lyon. Rabelais saw Manardo's work as both a useful contribution to restoring medicine to the prestige it had once enjoyed in antiquity, and an authoritative voice underlying the renewal of culture. In addition, he considered Manardo's letters to have been dictated as if by Paeon and Asclepius themselves:³⁷ "Parmi les hommes qui de nos jours ont appliqué leurs efforts à restaurer dans tout son éclat la médecine ancienne et authentique ... ses premières lettres recueillies sous la dictée de Péon ou d'Esculape lui-même."³⁸ Book ten of Rabelais's edition examines the pharmacopeia of Mesué.³⁹ The last edition of the *Epistulae* appeared in Basel in 1540, and some letters were published separately, such as volume V, 6 on the plague (1516), translated and republished as *Tractato contro la peste* (Ferrariae: Rossi da Valenza, 1522).
- 12 Manardo recommended drugs based on exotic herbs, and he became part of an international controversy about simple herbal remedies that aimed at re-evaluating the Islamic world's contributions to science and medicine. This controversy emerged with humanism and the recognition that a doctrine based on the authority of possibly faultily copied or translated texts may cause fatal mistakes.⁴⁰ Manardo himself knew Latin, Greek, and Arabic, as shown by one part of the *Epistulae* that became popular enough to warrant a translation titled *Traicté familier des noms grecz, latins & arabiques ou vulgaires, avec les définitions de toutes les maladies qui surviennent superficiellement au corps humain ... extraict du septiesme livre des Épistres de... Jehan Manard,... traduit de latin en François* (Paris: J. Langlois, 1555). Manardo also applied his philological principles to pharmacy, annotating Mesué in 1521 and publishing his annotations in the 1535 edition of the *Epistulae*. In the preface to this work, he explained that the truth ("veritas") of medicine and pharmacy can be attained "by explaining unclear passages, developing the too concise texts, filling omissions as well as correcting errors."⁴¹ Thus, for Manardo, not only did philology become the tool of medicine, but also "botanica ancilla medicinae."⁴² Errors are corrected by looking at the live plant, exemplified by the

quarrel on rhubarb in which Manardo participated by sending specimens all over Europe to his colleagues.⁴³

- 13 Jacques Dubois (1489-1555) was an anatomist and dietician from Picardy in northern France who taught in Paris at the Collège de Tréguier in the 1530s and later, from 1550 on, at the Collège royal⁴⁴. Like many humanists, he studied Greek and Latin, was interested in Hippocrates and Galen, and then switched to medicine and anatomy to become the teacher of Jean Fernel, Ambroise Paré, Simon Thomas, and Andreas Vesalius. With the latter, he entered into a quarrel over Galen's authority⁴⁵. Dubois was the first to attempt an accessible synthesis of Galenic semiology in his *Methodus sex librorum Galeni* (1539)⁴⁶, and the first to use the Greek term "pharmacopoeia" as referring to knowledge necessary for physicians and apothecaries (*Pharmacopea*, 1548). In addition, he made a name for himself as a nutritionist in *Victus ratio scholasticis pauperibus partu facilis & salubris* (1540) and *Conseil tresutile contre la famine: & remedes d'icelle* (1546). Dubois' method is typical of the humanist practitioner who combines the authority of the ancients, commentaries by contemporary colleagues, and some observation – in his case, human anatomical dissection – in order to create an authoritative text. In order to reconcile his findings with Galen, and to confirm this master's authority, Dubois claimed that the human body has degenerated over time⁴⁷.
- 14 According to Dubois, it is impossible to ignore the Arabs and Mesuë in particular, who invented so many remedies and who has described mild laxatives much less dangerous than those used by the Greek physicians: "Mesue operibus ipsis scripta communione iunxit et prima scripsit medicamenta purgantia maxime clementia et parte maxima graecis prioribus incognita magno mortalium incommodo, quippe qui elleboro, peplo, colocynthide et similiter valentibus medicamentis purgabantur quanto cum periculo, abunde docet Hippocrates lib.5 aph.1." Dubois's aim was to restore the splendour of a text that had been immersed in long, murky darkness and foul slime: "Quam vero non sit facile rebus longa et obscura caligine mersis et velut illuvie sordida obsitis dare aut verius reddere splendorem, norunt omnes."⁴⁸ According to Dag Nikolaus Hasse, the republication of *Opera Mesuae* by Dubois was a revision built on translation, comparison, excavation, and medical expertise⁴⁹: "Sylvius's version aims at a better understanding of the medical content by extinguishing ambiguities and by reordering Mesue's textual material."⁵⁰ Dubois's re-working of the *Opera Mesuae*, and the subsequent successful reprints, shows that the humanist project of purifying scholarly texts of Arabic influences does not diminish Mesuë's influence in the medical world of the Renaissance⁵¹. According to Hasse, the main reason for the great interest in Arabic authors such as Mesuë was their firm rooting in Renaissance university culture. Thus, "Arabic-Latin *materia medica* not only remained part of the Western tradition, but received unprecedented philological, medical, and botanical attention in the sixteenth century."⁵²

Dubois, Manardo, and Mesuë on Aloe, Myrobalan, Tamarind, Fumoterra, and Colocynth

- 15 I turn now to the handful of plants found in Mesuë's work on laxatives, *De Purgantium Medicamentorum*, focusing in particular on the correction of simple herbs in book two on simple herbal remedies⁵³. Whether Manardo's comments on Mesuë were transferred from the *Epistulae medicinales*, whether they emerged from his annotations of Mesuë's

Simplicia Medicamenta (written in Hungary between 1513 and 1519, and first published around 1521), or whether they are a combination of both still requires some research⁵⁴. The first of the simple herbs listed, aloe, is introduced as follows in the three versions, all three of which sing its praise:

Mesuë: Aloe est de melioribus & sublimioribus medicinis, habens praerogativam supra alias medicinas. Quanquam n. intentio solutivi secundum plurimum sit debilitare virtutes, & membra, quae sunt minerae virtutum, & afferre eis nocumentum propter illud quod diximus, cadit haec intentio ab aloe. (27v)

(Aloe is among the best and most eminent remedies, having privilege over other medications. However according to some, the concentration of the laxative may weaken the forces and parts that are the strength of the minerals, bringing them harm because of what we have said, this diminishes aloe's concentration.)

Sylvius: Aloe medicamentorum purgantium praestantissima & ob suam quandam praerogativam excellentissima. (28r)

(Aloe is the most prestigious among the laxatives and due to its privilege the most excellent.)

Manardus: Aperit orificia venarum. Hoc non dicunt antiqui, sed contrarium potius: dicit enim Dioscorides, quod sanguinem sistit per ora venarum ani manantem, & Plinius undecunq; fluentem. (28v)

(Opens the pores/blood vessels. This the ancients do not say, but rather the contrary: for Dioscorides says, because it stops the blood that flows through the ends of the veins of the anus, and Pliny [blood that flows] from any place.)

- 16 From these initial lines we can see what both sixteenth-century practitioners contribute to Mesuë's "versio antiqua": Dubois simplified and focused the text, whereas Manardo often added sources, generally Pliny and Dioscorides. What also becomes clear from the beginning is the multiple usage of every simple herb, often quite different from contemporary prescriptions. Although aloe latex would have been used to alleviate constipation (in the form of thickened leaf juice) and aloe-based gel would have been applied to soften the skin conditions caused by the plague, the wood of the plant could also be used to reduce fever when dissolved in wine or pulverised⁵⁵. Moreover, pills against the plague might contain aloe as an active ingredient⁵⁶. According to modern medicinal plant lists, the aloin contained in the plant is skin-softening, it can be tried in cases of burn treatment or ingested against constipation; it can also be applied to cuts, scrapes, abscesses, to general skin problems like scabies and sunburn, as well as swellings⁵⁷.

- 17 Some herbs seem of particular interest to the early modern medical practitioners, given that there are a variety of plants listed under one lemma, or that there is uncertainty with regard to which plant is meant and what its effect is, or whether the effect described actually corresponds to the plant the commentator has in mind. Such is the case of the myrobalan, the second herbal remedy that Mesuë records in his work. Differently from the mirabelle, cherry plum, or purple-leaf plum of the *prunus* genus that we may associate with myrobalan, this plant name covers a variety of species, including almonds. Mesuë dedicates a number of entries to its varieties and distinguishes between several kinds⁵⁸. He catalogs "bellerici" from Arabic "balilag," the fruits of *Terminalia bellirica* (Gaertn.) Roxb. He lists "chebuli" (from Arabic "kabuli"), "the Myrobalan imported from Kabul", that is, *Terminalia chebula* (Gaertn.) Retz. (*Myrobalanus chebula*), which are designated as black or Madras myrobalan. He registers "myrobalani indi," possibly seedless black myrobalan. He itemises "myrobalani citrini", yellow or Bombay myrobalan, which are the fruits of *Terminalia citrina* Roxb. (potentially a variant of *Terminalia chebula*). He records "emblici" (from

Arabic amlag) that stem from the East Indian Euphorbiaceae *Phyllanthus emblica* L. (*Emblica officinalis* Gaertn.), whereas the other myrobalan are part of the Combretaceae family. In *De simplicibus*, Mesuë has one chapter on myrobalani citrini, nigri, and Indi in which he also discusses the chebuli (as “germen secundus”, a different sprout); emblici and bellerici are discussed in two separate chapters. This division, which Dubois keeps in his “versio nova”, corresponds to the one handed down from the Aryurvedic tradition where we have the three fruits called triphala, that is, emblic, beleric, and chebulic myrobalan – the pulp of beleric myrobalan is astringent and a laxative, its kernel may be applied to inflamed parts, and it can serve as a narcotic⁵⁹. According to contemporary medical plant lists, the chebula, because of its styptic and astringent properties (tannin), has been used to treat tonsillitis, pharyngitis, hemorrhoids, and skin eruptions; it was also administered internally to check diarrhoea and intestinal bleeding and as an antidote for metallic, alkaloidal, and glycosidic poisons⁶⁰.

- 18 Renaissance practitioners mentioned diverse colours of the fruit, and they sought to determine the correct nomenclature. Nevertheless, uncertainty as to what is being discussed seems to pervade. In addition, there were an overwhelming variety of potential inner and outer applications in the form of salves and unguents for the eye. Here, the annotations by Manardo and Dubois contribute more clarity. In his short comment on the myrobalan, Manardo notes: “Nomen, glandem unguentariam designat: res autem ipsae, ad pomorum potius genus spectant: Proprium de eis caput non scripsit Diosc. sed nec Galenus, licet inter remedia aliquando nominis meminerit” (31v) “The name designates an oily gland: but the thing itself looks rather like the apple genus: Neither Dioscorides nor Galenus write a separate chapter about it, one may remember its name among the remedies of any time”. The fruit re-appears as the topic in Mesuë's chapter “De Ben”: “Ben est granum almesus, & eius aliud magnum, aliud parvum. Magnum autem est in magnitudine fructus avellanae triangulatum. Parvum vero est sicut cicer, & utrunque habet medullam unctuosam, lenem, & albam.” (68v) “Ben is a nourishing seed that can be big or small. The big one is in the size of the Abella fruit [hazelnut], whereas the small one is like a chickpea, & each has an oily kernel, soft, & white.” Manardo adds a paragraph, titled with the Arabic name, explaining that its Greek name is balanus myrepsica and its Latin name glans unguentaria, oily nut: “De Ben. Graeci balanum myrepsicen, Latini unguentariam glandem vocant.” Manardo also reminded the reader that the plant is generally unknown at the time he writes his note, though it was in fact becoming very well known: “[R]es ut olim celebris, ita paucos ante annos fere ignota, nunc autem unguentariis ad odorum materiam notissima, & (ut audio) in Hispania frequens. Quo tempore hanc epistolam scripsi, ignota erat: nunc coepit esse notissima” (69r). Dubois titled his versio nova with the Greek name, “De balanum myrepsica” (69r). The nut-like fruits appear again in the article “oleum de ben” (oleum balanum).
- 19 Another plant that we frequently encounter as employed against the plague is the tamarind. According to Mesuë: “Tamarindi sunt dactyli acetosi, & sunt ex fructibus palmarum sylvestrium in India. Ipsi quoque sunt ex medicinis nobilioribus, in quibus non est excessus (34v). Complexio et proprietates: Frigidae complexionis sunt, & siccae in secundo. Et sunt refrigerativi, extinctivi, & sedativi acuitatum & inflammationum” (35r). “Tamarinds are sour dates and are from the fruits of the sugar date palm in India⁶¹. They are among the most noble remedies that one cannot surpass. Constitution and quality: cold and dry. They are cooling, quenching, and calming for sharp pain and inflammation.” According to Dubois: “Ob id humorum acrimoniam reprimat, bilem

purgat, eiusq; & sanguinis fervorem furoremq; compescit, febres acutas lenitione egentes & iderum? sanat, sitim ac omnem ventriculi hepatisq; ardorem extinguit, vomitum sistit" (35r). "Due to this it checks the vigour of the humours and purges bile, and it quenches the fervour & furore of the latter and of blood, it heals acute fevers through its mildness, it extinguishes the thirst and all ardour of the belly and the liver, [and] stops vomiting." According to Manardo, Averroes named tamarind among the medications, whereas Galen did not, even though Pliny and Dioscorides did mention it. Most parts of the plant, such as its seeds, fruits, pulp, leaves, and bark, are used to produce remedies⁶².

- 20 The chapter on "Fumus terrae" – a name referring to the appearance of the plant as smoke arising from the earth – only contains the "versio antiqua", comments by Manardo and Costeo, without comments by Dubois: "Fumus terrae est ex medicinis benedictis. verum exuberantia eius exemit a numero medicinarum preciosarum" (42v). "Fumitory (earth smoke) is among the praised medications. But its abundance removes it from the costly remedies." *Fumaria officinalis*, common fumitory or earth smoke, is part of the poppy family. As a plague remedy, it can be used as blood purifier, the distilled plant juice mixed with theriac serves as a sweat cure, and doctors may produce a plant-based salt against the plague⁶³. According to modern plant lists, fumitory contains an alkaloid that may alleviate trembling and convulsions and it can also help in cases of psoriasis (rash)⁶⁴.
- 21 Colocynth or bitter-apple from the squash or gourd family is listed in Mesuë's *De medicamentis violenter & modeste purgantibus iisdemque deleteriis*:
Colocynthis est quam Persae vocant cucurbitam deserti, quae nascitur in planta quam etiam sal terre vocant, eo quod in toto ambitu eius interficit herbas, & est sicut venenum eis. unde vocant eam Arabes necem plantarum, eius folia sunt ampla, pilosa. (57v)
The colocynth is what the Persians call the desert pumpkin, that grows in a plant that they also call salt of the earth because it destroys the herbs in its entire surrounding, and is like poison to them; for which reason the Arabs call it plants' death; its leaves are thick and hairy.
- 22 This herbal remedy, which was used to make people vomit, would have been a popular purgative.

Conclusion

- 23 The *Opera Mesuae* is at the centre of the development of early modern systems of medical knowledge and medical care. They provide a summary of the layers of medical practice ranging from the ninth-century Yuhanna ibn Māsawayh and the eleventh- or twelfth-century anonymous Arabic author (who laid the basis for the four-part work) to the seventeenth century when Costeo's comments are added. Giovanni Manardo and Jacques Dubois were instrumental in re-ordering the knowledge presented in Mesuë's manual by substantiating it through source texts and by suggesting treatment and dosage according to their own experience as medical practitioners. The *Opera Mesuae* is equally at the centre of the integration of alternative medical systems in culturally diverse environments. Given that their origin lies in the Arab world, the sixteenth-century commentators strove to make palatable this valuable knowledge not only by retransmitting it into Neo-Latin, but also by evaluating its correctness and checking it against contemporary discoveries in an evolving discourse on the human body. The

sixteenth century is thus a highpoint for the transmission of the Mesuë database, which becomes, so to speak, a paradigm of medical anthropology⁶⁵. This is illustrated by the impressive number of editions of the work, as well as the range of commentaries devoted to it⁶⁶. In addition, the *Opera Mesuae* proved that the quarrel between humanists and Arabists was not as divisive as it may have been made out to be, given that all medical practitioners and commentators acknowledged their debt to Arabic sources and that indeed Arabizing medical practice reached a climax in sixteenth-century Europe⁶⁷.

NOTES

1. "Grabadin" is named from the Greek "grafidion" (notebook) or Persian "agrabadhin" (medical codex). It is a dispensatory, a description of medicines, their uses and their modes of administration.
2. See Sieglinde Lieberknecht, *Die Canones des Pseudo-Mesue. Eine mittelalterliche Purgantien-Lehre*, Stuttgart, Wissenschaftliche Verlagsgesellschaft, 1995, p. 1-8 and Paula de Vos, "The 'Prince of Medicine': Yūḥannā ibn Māsawayh and the Foundations of the Western Pharmaceutical Tradition", *Isis*, vol. CIV104-4, dec. 2013, p. 667-712.
3. Manardo's name variations are Mainardi, Manard, and Manardus.
4. According to Taşköprüzade, quoted in Michael Dols, *The Black Death in the Middle East*, Princeton, Princeton University Press, 2019 [1977], p. 99.
5. John M. Riddle, "Pomum ambræ. Amber and Ambergris in Plague Remedies", *Sudhoffs Archiv*, vol. LXVIII, part II (June, 1964), p. 111-122 (p. 121).
6. With regard to the author's identity that critics still debate, see the autobiographical sketch in D.M. Dunlop, "John Mesue and His Work (Abstract)", *Bulletin of the British Society for the History of Medicine*, vol. I, n° 8 (November 1952), p. 213-14; Yūḥannā ibn Māsawayh (Jean Mesue), *Le livre des axiomes médicaux (Aphorismi). Édition du texte arabe et des versions latines avec traduction française et lexique*, ed. by Danielle Jacquart, Gérard Troupeau, Geneva, Droz, 1980, p. 1-5; Danielle Jacquart & Françoise Micheau, *La médecine arabe et l'Occident médiéval*, Paris, Édition Maisonneuve et Larose, 1990, p. 214-216 (Jacquart and Micheau explain that the works bearing his name could not be attributed to a practitioner from the eighth and ninth centuries, because they contain later authors, such as Rhazes, Avicenna, and Ibn-al-Gazzar (p. 214); Sieglinde Lieberknecht, *Die Canones des Pseudo-Mesue*, op. cit., p 6-8. Symphorien Champier compiled a "biography" of Mesue that he included in his *Liber de medicinae claris scriptoribus* (1506) and that was later added to a Mesue edition (Lyon, 1523). Leo Africanus gives an (unreliable) account of his life in *De viris quibusdam illustribus apud Arabes* (1527). In her above-mentioned article, Paula de Vos follows a group of German scholars who claim that Mesue is a member of the thirteenth-century school of Taddeo Alderotti in Bologna (p. 685). Most recently, Dag Nikolaus Hasse sketches a bio-bibliography in *Success and Suppression. Arabic Sciences and Philosophy in the Renaissance*, Cambridge, Harvard University Press, 2016, p. 391-96 and suggests that both Leo Africanus and Conrad Gesner are aware that there is more than one Mesuë (p. 57-58).
7. Venice 1549, 1558, 1561, and 1562.
8. For the publications and their dates, see Lieberknecht, *Die Canones des Pseudo-Mesue*, op. cit., p. 98-104.

9. On the original language of *Opera Mesuae*, see Dubois's dedicatory epistle in the 1544 edition of the *Opera*: "Alii arabice omnino scripsisse existimant, quae mihi sententia magis arridet, cum et versio vetus impolita quidem, sed (ut coniectare licet) fidelis, voces arabicas non paucas servarit, non substituerit" (*Ioannis Mesuae Damasceni De re medica libri tres Iacobo Sylvio medico interprete*, Paris, 1544, A2r, quoted in Nikolaus Hasse, *Success and Suppression*, op. cit., p. 420).
10. Émilie Savage-Smith, Simon Swain, Geert Jan van Gelder (eds.), *The Best Accounts of the Classes of Physicians*, Leiden, Brill, 2020, 8.26.1.
11. Samer M. Ali, *Arabic Literary Salons in the Islamic Middle Ages. Poetry, Public Performance, and the Presentation of the Past*, Notre Dame, Indiana, University of Notre Dame Press, 2010, p. 19.
12. *The Best Accounts of the Classes of Physicians*, 8.26.5.
13. *Ibid.*, 8.27.1.
14. Galip Ata, "Evolution de la médecine en Turquie," *Comptes-Rendus, The Ninth International Congress of the History of Medicine (Bucharest, September, 1932)*, ed. by Victor Gomoïn and Victorica Gomoïn, p. 95-131 (p. 100); also to be found in the *Bulletin de la société française d'histoire de la médecine* 26 (1932).
15. For the establishment of an early modern canon of learned men instigated by Foresti da Bergamo, see Nikolaus Hasse, *Success and Suppression*, op. cit., p. 32.
16. Dorothea Heitsch, "Evacuative Strategies in Jacques Dubois and Michel de Montaigne", *Writing as Medication in Early Modern France, Literary Consciousness and Medical Culture*, Heidelberg, Winter, 2017, p. 173-204.
17. Ann G. Carmichael, "Universal and Particular: The Language of Plague 1348-1500", *Pestilential Complexities: Understanding Medieval Plague*, Vivian Nutton (ed.), *Medical History Supplement*, vol. XXVII, 2008, p. 17-52 (p. 22).
18. See, for example, Sergius Kodera, "Disease, Infection, Cognition: Air as Universal and Daemonic Mediator in Renaissance Aristotelianism and Neoplatonism", *Disreputable Bodies: Magic, Medicine, and Gender in Renaissance Natural Philosophy*, Toronto, Center for Reformation and Renaissance Studies, 2010, p. 133-170; Jon Arrizabalaga, "Facing the Black Death: perceptions and reactions of university medical practitioners", *Practical Medicine from Salerno to the Black Death*, Cambridge, Cambridge University Press, 1994, p. 237-288.
19. Lars Walløe, "Medieval and Modern Bubonic Plague: Some Clinical Continuities", *Pestilential Complexities*, p. 59-73 (66).
20. The six non-naturals (things not innate) are air, food and drink, rest and exercise, sleep and waking, excretions and retentions (coitus), and mental affections. See Louise Hill Curth, "Lessons from the past: preventive medicine in early modern England", *Journal of Medical Humanities*, vol. XXIX, 2003, p. 16-21.
21. See Carmichael, "Universal and Particular", op. cit., p. 42.
22. William B. Ober & Nabil Alloush, "Plague at Granada, 1348-1349: Ibn al-Khatib and Ideas of Contagion", *Bulletin of the New York Academy of Medicine*, vol. LVIII, n° 4, 1982, p. 418-24 and Girolamo Fracastoro, *De contagione et contagiosis morbis* (1546).
23. Konrad M. Müller, *Pestpflanzen. Heilkräuter wider den Schwarzen Tod*, Freiburg, Lavori Verlag, 2005, p. 39.
24. *Ibid.*, p. 123.
25. See Taha Dinanah, "Die Schrift von Aba Gafar Ahmed ibn Ali ibn Mohammed ibn Ali ibn Hatimah aus Almeriah über die Pest", *Archiv für Geschichte der Medizin*, vol. XIX, 1927, p. 27-81.
26. Probably the thirteenth-century byzantine physician Nicolaus Alexandrinus whose *De compositione medicamentorum* or *Antidotarium Nicolai* was translated into Latin by Nicolas de Reggio in the fourteenth century.
27. See Johannes Jacobi in Sudhoff, *Pestschriften aus den ersten 150 Jahren nach der Epidemie des "schwarzen Todes" 1348*, in *Archiv für Geschichte der Medizin*, 17 (1925/26), p. 28. Both Khatimah and

Córdoba are quoted in Christiane Nockels Fabbri, "Treating Medieval Plague: The Wonderful Virtues of Theriac", *Early Science and Medicine*, vol. XII, 2007, p. 247-283.

28. *Ibid.*, p. 265.

29. Mesuë uses the word in its general sense as antidote, at times together with "mithridates". For the latter, see Laurence M. V. Totelin, "Mithradates' Antidote: A Pharmacological Ghost", *Early Science and Medicine*, vol. IX-1, 2004, p. 1-19.

30. Nockels Fabbri, *op. cit.*, p. 265.

31. Giambattista della Porta, *Magiae naturalis. Libri viginti*, Neapoli, apud Horatium Saluianum, 1589 (first ed. 1558), p. 299.

32. For the vitiginea wood, see M. Manokari & Mahipal S. Shekhawat, "An updated review on *Cissus vitiginea* L. (Family: Vitaceae) – An important medicinal climber", *World News of Natural Sciences*, vol. XXII, 2019, p. 75-83. All translations are mine, unless otherwise indicated.

33. Anna Montgomery Campbell, *The Black Death and Men of Learning*, New York, Columbia University Press, 1931, p. 68. Bol armeniac or bolus rubra is red clay-rich earth.

34. John M. Riddle, "Pomum ambrae", p. 116-118. See also Philip Ziegler, *The Black Death*, London, Guild Publishing, 1991, p. 52-53.

35. Konrad M. Müller, *Pestpflanzen*, *op. cit.*, p. 45, p. 55.

36. Vivian Nutton, "The rise of medical humanism: Ferrara, 1464-1555", *Renaissance Studies*, XI-1, 1997, p. 2-19.

37. Physician of the gods and god of medicine respectively.

38. François Rabelais, *Œuvres complètes*, ed. Mireille Huchon, Paris, Gallimard, 1994, p. 982.

39. Io. Manardi Ferrariensis medici *Epistolarum medicinalium Tomus secundus numquam antea in Galia excussus*, Lyon, Seb. Gryphe, 1532, p. 396-512.

40. See Nikolaus Hasse, *Success and Suppression*, *op. cit.*, p. 137-141.

41. *Medicamina simplicia et composita di Ioannes Mesue*, Basel, J. Bebel, 1535, p. 405. Concetta Pennuto, "Mainardi, Giovanni", *Encyclopedia of Renaissance Philosophy*, ed. Marco Sgarbi, Springer, Cham, 2018, p. 5. https://doi.org/10.1007/978-3-319-02848-4_400-1.

42. See José María Valderas, "Aproximación a las Epístolas de Giovanni Manardo", *Collectanea Botanica* (Barcelona), vol. XXIII, 1997, p. 119-135, p. 122.

43. Vivian Nutton, "The rise of medical humanism", *op. cit.*, p. 11.

44. For his life, see Stephen Bamforth *et al.*, *Prosateurs latins en France au XVI^e siècle*, Paris, Presses universitaires de Paris, 1987, chapter XI and Stephen Bamforth's & Jean Dupèbe's introduction to Jacobus Sylvius, *Francisci Francorum regis et Henrici Anglorum Colloquium*, Paris, Josse Badius, 1520, ed. and trans. Stephen Bamforth and Jean Dupèbe, *Renaissance Studies*, vol. V-1, 1991, p. 1-47. For Dubois' achievements, see *Authoris vita in Iacobi Sylvii Ambiani medici et professoris regii parisiensis Opera medica*, Lyon, Jacques Chouet, 1630 and Charles Donald O'Malley, "Dubois, Jacques (Latin, Jacobus Sylvius)", Charles Gillispie (ed.), *Complete Dictionary of Scientific Biography*, New York, Cengage Learning, 2008, vol. IV, p. 198-199.

45. The conflict with Vesalius is reflected in *Vaesani cuiusdam calumniarum in Hippocratis Galenique rem anatomicam depulsio* (1551) and in the defense of Vesalius by Renatus Henerus, *Adversus Jacobi Sylvii depulsionum anatomicarum calumnias pro Andrea Vesalio apologia* (1555). On Dubois' disagreement with Vesalius, see, for example, Roger French, "Natural Philosophy and Anatomy", in Jean Céard, Marie Madeleine Fontaine, Jean-Claude Margolin (eds), *Le Corps à la Renaissance. Actes du XXX^e Colloque de Tours 1987*, Paris, Aux Amateurs de Livres, 1990, p. 447-460.

46. Some of Dubois' important works concerning Galen are *Methodus sex librorum Galeni in differentiis et causis morborum et symptomatorum* (1539), *Morborum internorum prope omnium curatio ex Galeno et Marco Gattinaria* (1548), *De febribus commentarius ex Hippocrate et Galeno* (1555), *In Hippocratis et Galeni physiologiae partem anatomicam isagoge* (1555). Conrad Gesner gives a detailed bibliography in *Bibliotheca universalis sive catalogus omnium scriptorum locupletissimus*, Zurich, 1545, p. 363v.

47. Gerhard Baader, "Jacques Dubois as a practitioner", in A. Wear, R. K. French & I. M. Lonie (eds), *The medical renaissance of the sixteenth century*, Cambridge, Cambridge University Press, 1985, p. 146. See also Antoine Drizenko, "Jacques Dubois, dit Sylvius, traducteur et commentateur de Galien", in Véronique Boudon-Millot & Guy Cobolet (eds), *Lire les médecins grecs à la Renaissance. Aux origines de l'édition médicale*, Paris, Bibliothèque interuniversitaire de médecine, 2004, p. 199-208.
48. *Ioannis Mesuae Damasceni De re medica libri tres Iacobo Sylvo medico interprete* (1548). There are two editions of this work that year, both of which appear in Lyon, one by Guillaume Roville and the other by de Jean de Tournes with Guillaume Gazet. The two Latin passages are found on A2v and A1v respectively and they are quoted in Hasse, *Success and Suppression*, p. 122, p. 457.
49. Nikolaus Hasse, *Success and Suppression*, *op. cit.*, p. 123-124.
50. *Ibid.*, p. 129.
51. Paula de Vos has shown this in particular for the Spanish-speaking world: "Thus the humanist emphasis on 'purifying' scholarly texts of Arabic influences through the recovery and direct translation of original Greek and Roman texts, along with its concurrent anti-Arabic rhetoric, does not seem to have displaced Mesuë's influence or importance, at least in Spain and the Hispanic world" ("The Prince of Medicine" p. 673). See, for example, Peter E. Pormann, "The Dispute between the Philarabic and Philhellenic Physicians and the Forgotten Heritage of Arabic Medicine", in Peter E. Pormann (ed.), *Islamic Medical and Scientific Tradition*, London, Routledge, 2010, vol. II, p. 283-316.
52. Nikolaus Hasse, *Success and Suppression*, *op. cit.*, p. 297.
53. *Ioannis Mesuae Medici clarissimi opera. De medicamentorum purgantium delectu, castigatione, & usu, Libri duo, Quorum priorem Canones universales, posteriorem de Simplicibus vocant. Venetiis, Apud Iuntas, MDLXXXI. Book two: Ioannis Mesuae De Purgantium Medicamentorum. Simplicium Castigatione Speciatim. Liber Secundus Quem De Simplicibus vocant.* The work is available in the Hanes Collection of The Louis Round Wilson Special Collections Library at the University of North Carolina at Chapel Hill. For this article, I have used the electronic version made available by the Bayerische Staatsbibliothek in Munich.
54. On this work, see Árpád Herczeg, "Johannes Manardus Hofarzt in Ungarn und Ferrara im Zeitalter der Renaissance", *Janus*, vol. XXXIII, 1929, p. 52-78, p. 85-130 (p. 92-94).
55. This would probably be *xyloaloes*: wood or bark of the aloe tree (*Aquilaria agallocha*).
56. Konrad M. Müller, *Pestpflanzen*, *op. cit.*, p. 116.
57. James P. Smith, "Plants & Civilization; An Introduction to the Interrelationships of Plants and People", *Botanical Studies*, vol. II 2, 2006 [1971], *passim*.
58. For the identifications of the five different myrobalans, see Lieberknecht, *Die Canones des Pseudo-Mesue*, *op. cit.*, p. 71.
59. See Ashutosh Gupta *et al.*, "Terminalia bellirica (Gaertn.) roxb. (Bahera) in health and disease: A systematic and comprehensive review," *Phytomedicine* vol. LXXVII, October 2020, 153278, <https://doi.org/10.1016/j.phymed.2020.153278>.
60. James P. Smith, "Plants & Civilization", *op. cit.*, p. 228 and *passim*.
61. For the etymology of "tamr hindi", see Lieberknecht, *Die Canones des Pseudo-Mesue*, *op. cit.*, p. 78.
62. See James P. Smith, "Plants & Civilization", *op. cit.*, p. 81.
63. Konrad M. Müller, *Pestpflanzen*, *op. cit.*, p. 119.
64. See James P. Smith, "Plants & Civilization", *op. cit.*, p. 191.
65. For the notion of sixteenth-century medicine as anthropological, see Rafaël Mandressi, "Médecine et Discours sur l'homme dans la Première Modernité", *Revue de synthèse*, vol. CXXIV, n° 4, 2013, p. 511-536. For a group of authors who are well informed about discussions in the medical fields of their time and who are aware that medicine is at the basis of the anthropological project of humanism, see Heitsch, *Writing as Medication in Early Modern France*.

66. See the editions listed by Paula de Vos in “The Prince of Medicine” and by Dag Nikolaus Hasse, *Success and Suppression*, p. 7-10 and p. 392-96.

67. See also Nikolaus Hasse, *Success and Suppression*, *op. cit.*, p. 177-78.

ABSTRACTS

At the crossroads of translation, cultural exchange, humanistic rhetoric, the medical schools of Italy and France, printing, and transnational conversations, *Opera Mesuae* represents a paradigm of Renaissance medical anthropology. In comparing a number of entries by Giovanni Manardo and Jacques Dubois (Sylvius), I propose to situate this work in the quarrel of the simples aimed at reassessing the contributions of the Arab world to early modern science and medicine.

Au carrefour de la traduction, de l'échange culturel, de la rhétorique humaniste, des facultés de médecine en Italie et en France, de l'imprimerie et des conversations transnationales, *Opera Mesuae* représente un paradigme de l'anthropologie médicale de la Renaissance. En comparant un certain nombre d'entrées de Giovanni Manardo et Jacques Dubois (Sylvius), je me propose de situer cette œuvre dans la querelle des simples visant à réévaluer les contributions du monde arabe à la science et à la médecine de la première modernité.

INDEX

Mots-clés: medicine, botany, Renaissance, Arabic medical traditions, transmission, plague

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