

*The Byzantine and Medieval Periods*  
*Medical Receptions of phrenitis in Greek, Latin and Semitic*  
*Languages (Sixth–Fourteenth Centuries CE)*

**A Hybrid and Widespread Body of Evidence**

By the second quarter of the seventh century, the post-classical world, discussed here as receiver and source of preservation of a specific medical topic within the Graeco-Roman intellectual tradition, stretched from modern Europe and North Africa to the Middle East, and was increasingly a combination of separate centres dominated by different governments, authorities and intellectual spheres engaged in various independent yet intertwined processes of preservation, interpretation, selection and rewriting of medical thought.<sup>1</sup> As we read through these texts, following the changes and transformations of the nosological concept *phrenitis*, it is difficult to trace the elements of change or novelty within an intricate, slow-moving tradition.

After the seventh century, inquiry into the history of the disease *phrenitis* as diagnostic label and object of clinical attention can be pursued along two main lines: a medical tradition mostly devoted to copying and commenting on the great sources of the past, rooted in Graeco-Roman authorities but infiltrating the East via intensifying translation and elaboration activity in Syriac, Arabic and Hebrew; and the reception and dissemination of these concepts in texts that are not primarily medical but are nonetheless interested in a competent use of technical aspects of medical concepts.

The medical sources for folk culture and the concreteness of patient experience in this period are unfortunately much less generous than earlier ones, such as the works of Galen: clinical reports and individual patient cases, an important part of Hippocratic and Galenic medicine, essentially disappear in Byzantine times. As for the second category described above, aside from the intriguing parallel history of *phrenitis* as moral and metaphorical

<sup>1</sup> See Nutton (2004) 292–309, for a valuable overview; Temkin (1973); and the chapters in Bouras-Vallianatos and Zipser (2019), especially Nutton (2019).

concept explored in Chapter 6, little clinical testimony survives to help us understand how well known and widely experienced the syndrome was. Was it a common pathological reality, whence its metaphorical-allegorical appeal? Or was it instead more of a dead *topos*, made prominent by the prestige of medical authorities and idiomatic habit, semantically effective but devoid of any connection with actuality, like ‘hysterical’ in everyday language today? And was it in many respects a sufficiently general concept that lay people could confuse it with other diseases, like ‘the flu’ and ‘a cold’ today?<sup>2</sup> The truth must lie somewhere in the middle, since the weight of tradition and cliché determined a persistence in actual diagnosis, while at the same time the flow of diagnoses and professional mentions of phrenitic patients continued, each feeding the other. We may hypothesize that the survival of doctrinal discussions of this disease entity, on the one hand, and its metaphorical, antonomastic presence, on the other, together supported its continuity, especially in light of its solid reinstatement as a key encephalic disease at the beginning of the modern era.

It is impossible, of course, to offer a comprehensive discussion of ten centuries of post-antique medicine in both halves of the Roman Empire, but coverage that is a bit more than impressionistic can be attempted. In this chapter, I focus on the following central bodies of material:

- (1) Technical references in non-medical texts (fourth–thirteenth centuries CE).
- (2) Byzantine sources (centred on two locations: Alexandria in the sixth–ninth centuries CE and Constantinople in the ninth–fifteenth centuries CE) in Greek.
- (3) Medieval sources of both Western and Eastern provenience (most notably those of the so-called School of Salerno; the activities of translation and study in the Arabic centres on the Iberian Peninsula; and work produced in universities, especially commentaries and compendia). These sources are in Syriac, Arabic, Hebrew and of course Latin.

Within such a long time frame and wide geography, there is a patrimony of medical texts which can be categorized as ‘technical’ (Byzantine Greek medical documents, Arabic medical treatises, and the Western medical tradition flourishing after the thirteenth century CE). But there are also various ‘hybrids’, in which a genuinely medical piece of information is mentioned or discussed, although outside a technical context and with no

<sup>2</sup> I thank Sean Coughlin for this suggestion and discussion.

medical purpose (be it educational or practical) or professional audience in mind,<sup>3</sup> but also with no metaphorical colouring.<sup>4</sup>

### The Late-Antique and Medieval Periods: Technical References in Non-Medical Texts

Before turning to the medical sources proper, we should look briefly at the diffusion of *phrenitis* as a technical concept outside medicine, as part of the popularity of medical knowledge that is increasingly apparent in the late-antique period. For example, what should we make of information such as that preserved by the author of three *scholia* on the pseudo-Aeschylean *Prometheus Bound*,<sup>5</sup> which come from a commentary on the play that the editor locates possibly in Constantinople ‘in the second half of the twelfth century’ and in any case between the tenth and the thirteenth centuries CE?<sup>6</sup> The scholarly comment on the tragic passage offers testimony for an understanding of *phrenitis* which is technical in its vocabulary and concepts, but simultaneously lay in its indifference to the development of scientific debates about the disease up to that point:

A *phrēn* is a membrane (*hymen*) that stretches from the *pharinx* to the hypogastric parts. It thus extended from this part to that one, like a kind of girdle that is called a diaphragm. It is in between the respiratory and the digestive parts (*esti de meson tōn anapneustikōn kai tōn threptikōn*<sup>7</sup>). Respiratory parts are the lungs, the heart; protective/curative parts are the spleen, the liver. As long as this membrane is safe, the animal is healthy; but when it suffers a breach, then the animal becomes deranged, and the disease *phrenitis* comes about (*mechris an oun sōizētai ho hymēn houtos, hygiainei to zōion; hotan de pathēi kopēn, tote paraphronei, kai symbainēi hē phrenitis nosos*). (Σ<sup>PPdYa</sup> 881c)

The scholiast had some medical knowledge, or at least sufficient medical-anatomical vocabulary to express himself, but only an incompetent, grossly localized, ‘Homeric’ view of human physiology: a wound (*kopē*) is

<sup>3</sup> By the first centuries of our era, medicine had achieved a high degree of professional status; Galen’s authorial posture and claims to professional pride testify to this in the highest degree. Some of these codified professional *topoi* and vocabulary items unsurprisingly leaked out into other spheres of intellectual activity, including literature, religion and philosophy. On the history of the medical profession and the development of the figure of the Hippocratic doctor, see Leven (2018); Ecce (2018); the many perspectives offered in Gill, Whitmarsh and Wilkins (2009); Israelowich (2015).

<sup>4</sup> Thus fundamentally different from the allegories of *phrenitis* explored in Chapters 6 and 8.

<sup>5</sup> *Scholia vetera* 881b, c, d Herington.

<sup>6</sup> Herington (1972) 43–45. *Scholion* 881c, 211 Herington, my translation.

<sup>7</sup> I thank S. Douglas Olson for this correction of the manuscripts’ θεραπευτικῶν (retained by Herington) on analogy to the next scholion (881d).

mentioned, and the view of *phrenitis* centres on the diaphragm and is thus more reminiscent of details from earlier accounts than of the description of *phrenitis* in Graeco-Roman medicine after Celsus. This shows how archaic versions of our story, or at least debris from them, continued to be carried along by the rivers of information that described the disease, despite running contrary to the dominant encephalocentric tendency in ‘official’ medicine. For the non-technical, lay part of this medical history, exceptions and dissonances such as this are an important component and perhaps actually more significant than the dominant narratives.

Some of the most interesting of these ‘hybrid’ instances go back to earlier centuries and are found in both pagan and Christian texts, where medical knowledge is on rich display outside the purposes and scope of actual medical activity.<sup>8</sup> It is at this juncture between the scientific and the more broadly intellectual – here specifically theological – spheres that we can locate Gregory of Nyssa’s project in his *De opificio hominis* (fourth century CE). Gregory explains the nature of the human body and its anatomy in terms of divine teleology, and addresses *phrenitis* explicitly. Most surprisingly, he retains the chest location for the disease and refers to the stomach as the *locus affectus*.<sup>9</sup> This author engages with anatomical details and has strong opinions about the localization of the affection he discusses. But he does not place himself within the mainstream affirmation of Galen’s views (*De opificio hominis* 12 (157):

We have learnt that the forms of derangement do not arise only from oppression (*karēbareia*) but also through empathy with the membranes arranged to cover the pleura (*tōn tas pleuras hypezōkotōn hymenōn*). Similarly, those competent in the medical art distinguish the illness of the *dianoētikon*, calling the affection *phrenitis*, since this is the name of these membranes. And the sensation arising from the pain in the heart is wrongly (*esphalmenōs*) suspected; for it is not a disease of the heart, but of the damaged cavity of the stomach (*tou stomatos tēs koilias drimyssomenou*), and they associate the disease with the heart through incompetence (*hyp’ apeirias*).<sup>10</sup>

<sup>8</sup> Note the role of medicine and medical knowledge testified to by e.g. Aelius Aristides in the second century CE; cf. Israelowich (2012); Petridou (2015).

<sup>9</sup> According to Wessel (2009), Gregory’s project was to allow some human psychological functions to the chest, as opposed to adopting a hard-core brain-centred view, making space for a holistic model to account for God’s intervention in the design and functioning of animate human life – a kind of holism in the service of Christian teleology. See Wright (2022) 37–41, 104–06. for a better assessment.

<sup>10</sup> The underlying idea is that the gastric part of the body exudes harmful vapours, from which the diaphragm shields the upper part. (For the Platonic and Aristotelian ideas, see above, pp. 13, 34, 51). There is a parallel in Aretaeus, *Morb. Ac.* II, 3 (22.10–19 Hude) on *synkopē*: some believe this is a disease of the stomach, on the grounds that people are cured of it by eating and drinking. Aretaeus

Elsewhere (172) Gregory recounts a (rare) phrenitic case at which he personally assisted, offering a wealth of physiological detail. He takes the occasion to make a point about body–soul interaction and holism. Again, there is no reference to the brain:

I also recognized another cause of what happens during sleep when I was attending one of my relatives who was suffering an attack of *phrenitis* (*bealōkota phrenitidi*). Being annoyed when more food was given to him than his strength would allow, he kept crying out and finding fault with those who were around him, alleging that they were imposing on him by filling his intestines with dung. And when his body was now rapidly beginning to perspire, he blamed those who were with him for having got water ready in order to soak him with it as he lay there. Nor he did cease crying out until the result showed the source of these complaints: for all at once copious sweat broke out all over his body, and a relaxation of the bowels made sense of the weight he felt in his intestines. This very condition which, while his sober judgement was dulled by disease, his nature endured, being sympathetically affected by his physical condition of the body, because this prevented (his nature) from being unable to perceive what was amiss, but being unable to make clear what was causing pain, due to the distraction resulting from the disease – this, if the intelligent principle of the soul were lulled to rest, not as a result of infirmity but by natural sleep, would most likely appear as a dream to one in such a situation, the breaking out of perspiration being indicated by water, and the pain occasioned by the food by the weight of intestines.

The disease operates here entirely on the level of the belly, striking the bowels in particular. The patient's imagination is involved – he has a pathological ideation regarding eviscerated intestines – but only as an intuition of the soul regarding the state of the body, not unlike what dreams do in healthy patients, as Gregory says.

In the different context of his homily *In ebriosos* (31.452), the bishop Basil of Caesarea (fourth century CE), Gregory's brother, mentions *phrenitis* alongside drunkenness. Basil offers a different, fully physiological and brain-centred explanation of the cognitive impairment that comes with drunkenness, via a comparison with *phrenitis*, which is used to illustrate corrupt pleasures and the impairment that follows excessive wine-drinking:

Disturbance in the reasoning faculties resulting from trouble arising from wine (*thorybos de dia tēn ek tou oinou tarachēn engignomenēn tois logismois*),

argues against them that it is a disease of the heart, which is affected by the stomach through proximity. (I thank Sean Coughlin for this parallel.) Cf. also Alexopoulos (2023) on this passage and on *phrenitis* in *De opificio hominis*.

and unpleasantness resulting from bitter exhalations deriving from the pleasure of drinking. In these cases, the feet are fettered and the hands are tied up as a result of the fluxes that attack them as a consequence of drunkenness. Yet even before these affections, *at the moment of drinking, the affections of phrenitics befall them (ta tōn phrenitikōn autois sympiptei pathē)*; for whenever the meninges become full of vapour, which the evaporating wine causes to rise, the head is struck by unendurable pains.

A full description of phrenitic behaviour follows. *Phrenitis* as a dangerous fever localized in the head and associated with madness, or generally as a quintessential grave ailment, appears to be established in these theological authors. Gregory's primary localization in the chest is rarer: as we have seen, in most such writers the head and especially the meninges are the *locus affectus*.<sup>11</sup> But traces of the ancient ambivalence in the meaning of *phrenes* persist, and the Greek statesman (and Byzantine emperor) John VI Kantakouzenos (fourth century CE) gives a nice example of this in the course of making a general point apparently devoid of technical knowledge. Here again the heart, not the brain, is the centre of a passing comparison:

But of course it is reasonable that the whole is larger than its parts! Otherwise, how is it that when the heart is heated or cooled, *melancholia* or *phrenitis* results, and the soul's ability to reason is damaged (*pōs tēs men kardias mallon ekthermainomenēs ē psychomenēs melancholiai ginontai kai phrenitides kai tēs psychēs apolluntai to phronein*), but if the hand or foot is inflamed, nothing of the kind happens?<sup>12</sup>

These examples are unrelated to medical practice or scientific research. But an assimilation of technicalisms (in vocabulary and chosen themes), as well as the adoption of certain fixed points, is nonetheless evident in them: the head (and heart) as locus; a specific pattern of behaviour; an association with abuse of wine as an ethical flaw. Examples of such 'hybrids' vis-à-vis nosology and medical knowledge continue to be found throughout the centuries. The Byzantine scientific compiler Leo the Mathematician (ninth century CE) also elaborates on the canon of Greek medical sources in his *De natura hominum synopsis*, referring to the *phrenes* simplistically as the part which, when inflamed, generates *phrenitis*: 'There are also other muscles/tissues under the other *pleurai* in the middle, referred to as *mesopleuria* and *phrenes*, through the inflammation of which people become phrenitic (*dia to autous phlegmēnantas phrenitian tous anthropous*)' (10.4.58). On the

<sup>11</sup> For the brain in Christian theological discussion, see Wright (2022).

<sup>12</sup> *Disputatio cum Paulo Patriarcha Latino epistulis septem tradita*, Ep. 3.4.34–38.

encephalocentric side, the eleventh-century CE Byzantine author Michael Psellus (a man of wide interests and vast erudition, who composed *inter alia* didactic poems on medical topics) speaks of our disease at *Poemata* 9.729–31:

Phrenitis is a hidden inflammation (*phlegmonē kekrymmenē*)  
that burns (*ekkaiousa*) the meninges that are affected  
or the brain (*ton enkephalon*) with unspeakable pain.

And later (*Poemata* 9.765–69):

For those who are ill there is a double principle:  
for their nature is affected either by phlegm  
growing to excess or by their bile.  
They have two possibilities, one towards *phrenitis*,  
one towards oppressive *lēthargos*.

The technical principles expressed here are those established from Galen onwards, assimilated and elaborated by a Byzantine intellectual at the turn of the first millennium. Another leap forward: the French theologian Hugues de Miramar (thirteenth century CE) was no doctor, but in his autobiographical *Liber de hominis miseria, mundi et inferni contemptu (uersio breuis)* (1.5.15.312) he wonders: ‘Does not *frenesis* often disturb your brain, lethargy your occipital bone, *apoplexia* your intellect, migraine the pia mater and the cranium? (*Nonne sepe tibi frenesis perturbat cerebrum, litargia occipitium, appoplexia intellectum, emigranea piam matrem et craneum?*)’, creating a random, faux-technical map of mental faculties, diseases and bodily parts that produces only a superficial impression of competence.

In all these authors we notice a phenomenon perhaps less explicitly accounted for by historians, located between the dominant Galenism of higher medical contexts that is rightly stressed in the classic accounts,<sup>13</sup> and the centrifugal forces represented by ‘popular’, magical underworlds that enjoy a continuity of their own in their preservation of medical knowledge:<sup>14</sup> the half-technicalism of a multitude of late-antique, Byzantine and early medieval authors, who do not, or not always, appear to be incompetent or passive readers of medicine, but who also escape dominant trends and share neither the rigour of ‘official’ scientific debate nor the philological caution of erudite translators. It is interesting that in several of these cases the chest-based account is kept alive and even tends to

<sup>13</sup> Temkin’s formula (1973); see also Nutton (2004) 292–309.

<sup>14</sup> On this, see also Nutton (2004) 294.

prevail, in counter-tendency to what Jessie Wright describes as the brain's 'critical' positioning vis-à-vis 'formulations of human nature and human identity in late antiquity' – especially in theological discourses.<sup>15</sup>

### **The Late-Antique to Medieval Periods: Medical Sources on *phrenitis* (Sixth–Fourteenth Centuries CE)**

As for medicine in a more restricted, technical sense, the subsequent phases in the history of the transmission of *phrenitis* from the ancient Graeco-Roman world to the modern one are marked by the following key phases and components: the preservation of Galen's doctrines on the disease in Byzantine medicine, largely in the form they are given by the encyclopaedists;<sup>16</sup> the translation of a rich corpus of texts into Syriac and Arabic by Eastern and Iberic scholars and philosophers, from the ninth century onwards; and the subsequent translation of these works back into Latin, for the use of scholars and doctors in Europe, especially from the twelfth century on and in connection with the activities of the Salernitan School of medicine, which flourished from the tenth century in southern Italy and became the major centre for medicine in Europe.

It is against the background of these movements, linguistic vicissitudes, cooperative efforts and fragmentations that we will attempt to map the form *phrenitis* maintains, develops and finally hands over to modern medical research. This search will necessarily remain partial and episodic. But its goal is to highlight core elements of permanence and continuity, as well as meaningful breaches in this development.

#### *Late-Antique and Byzantine Sources in Greek*

The vast majority of specifically *medical* sources after the sixth century follow in the tradition of encyclopaedias, compendia and commentaries based on the cornerstones of the earlier Greek tradition, especially Galenic (and Hippocratic). In his *Commentarii in Hippocratis librum sextum de morbis popularibus*, the sixth/seventh-century medical author Palladius of Alexandria comments on a physiognomic portrayal of *mania* or *phrenitis* based on the Hippocratic *facies* found in the *Prognostikon* and other Hippocratic texts. It is noteworthy, and clear, that he is conflating Hippocratic information about mental disturbance generally into

<sup>15</sup> Wright (2016) 1. <sup>16</sup> See Chapter 5, pp. 174–83.



a phrenetic-manic portrait, which becomes a kind of umbrella image for deranged persons:

Hippocrates tries to grasp the state of the body, for he says that we know the signs of anger/spiritedness (*thymos*): the trembling of the voice, the redness of the face, the wildness of the eyes. These features are often present in a person in the absence of anger, naturally. The art (*technē*) ought to help [us] predict that [the patient] is gripped by no other phrenetic disease than *mania* (*oute hotōidēpote allōi nosēmati tōi phrenitikōi tēi maniai echei halōnai*).<sup>17</sup>

Palladius not only discusses the profile of *phrenitis*, but also offers rare testimony to clinical interactions with actual patients. At *Commentarii in Hippocratis librum sextum de morbis popularibus* (2.113–14) he reflects on an episode relevant to the deontological aspects of a doctor's profession which has a phrenetic patient as protagonist, and reports concretely on the particular sensorial sensitivity such individuals are thought to experience. This patient is oversensitive and reactive, especially to wine:<sup>18</sup>

For if your mouth – you being the doctor – has a bad smell either from garlic or onion, then do not eat them. And if your perspiration has a bad smell, sometimes because of an unguent, make it milder using aromatic herbs, and resort to nice-smelling plants, and the patient will be very grateful. And do not risk putting yourself in the same position as the one Anitos (*sic*: Ἄνιτος is printed here by Dietz for Quintus) once was [here Palladius inserts and elaborates a Galenic anecdote in which a prominent Roman patient with fever and *kephalgia*, although not *phrenitis*, is visited by the famous physician Quintus<sup>19</sup>]. For he once drank a large quantity of wine and visited a phrenetic (*eisēlthe pros phrenitikon*). But [the patient] could not stand the smell of wine coming from his mouth, and said to him: 'The smell of your mouth really exacerbates me'. And the other replied harshly: 'I bear every day the smell of your fever, and you cannot bear the bad smell of my mouth just once!' These, however, are the favours (*charites*) one owes to patients, and they appear to be inexpensive, and they make us, as well as the patient, happy – us, because he becomes obedient to the doctor (*peithēnion tōi therapeuonti*), and him – and us – (because this leads to) the cure of his ill body (*tēn sōtērian tou paschontos sōmatos*).

Byzantine medical commentators in general perpetuate Galen's doctrine and his reading of Hippocrates with respect to *phrenitis*. The medical author Stephanus of Byzantium (sixth/seventh century CE) in his *Commentary on Hippocrates' Prognosticon* is an example. He offers remarks

<sup>17</sup> 195 Dietz.    <sup>18</sup> 130–71 Dietz.

<sup>19</sup> At *Comm. Hipp. Epid. VI*, 4.10 (206 Wenkebach = 17B.151 K.).

on crocydism, giving it the hallucinatory interpretation known from Galen (1.9.27);<sup>20</sup> on respiration (1.10.101); and on urine (*In Magni Sophistae Librum de Urinis* 11.34). Urinology was an important branch of Byzantine medicine, and the theme of a specific ‘phrenitic’ kind of urine is accordingly recurrent: the seventh-century Theophilus Protospatharius comments on the quality of urines along familiar lines in his commentary on Hippocratic texts,<sup>21</sup> as does Joannes Actuarius (thirteenth/fourteenth century CE) at great length in his *De urinis*.<sup>22</sup>

The topic of the different types of *phrenitis* and their possible localizations survives and is further refined. Theophilus Protospatharius addresses it in his *De pulsibus*,<sup>23</sup> for example, mentioning the various versions of the disease sketched out by Galen, focussing on the pulse and reporting two versions, a primary, encephalic one and one that strikes the chest: ‘The throbbing in phrenitic diseases changes according to the form of *phrenitis*. For one kind is an inflammation of the parts around the brain (*phlegmonē tōn peri ton enkephalon*), which happens as a primary affection; another *phrenitis* is an inflammation of the diaphragm, from which the brain gets a share through sympathy.’ He also recognizes *phrenitis* as belonging to larger groups of diseases based on the humours that cause it, the localization, the patient’s age and the like: ‘paroxysms, *phrenitis*, *pleuritis* and others’ (*Comm. Hipp. Aph.* 1.12 = 17b.385 K.); ‘diseases of this age are *asthma*, *pleuritis*, *peripneumonia*, *lēthargos*, *phrenitis*, ardent fever, chronic diarrhea’ (*Comm. Hipp. Aph.* 3.30 = 17b.644 K.);

Heating and fever remain central. Paulus of Nicaea (seventh or ninth century CE) in his *Liber medicus* (10.13) defines the illness thus: ‘What is *phrenitis*? An acute derangement with acute fever, when the moisture in the brain dries up, from which *agrypnia* follows. Such an illness comes from hot and dry.’ Photius (ninth century CE) elaborates in a similar fashion, noting that the disease is caused by distension of the meninges and spoiling of the blood (*Bibl.* 130.2 Bekker) via a ‘pleonasm with heating’ (*Bibl.* 130.5 Bekker) and ‘with inflammation’ (*Bibl.* 130.6 Bekker). Leo Medicus (sometime after the late ninth century CE) in his *Conspectus Medicinae* (2.11) has a chapter ‘On *phrenitis*’, in which he defines it as ‘an inflammation of the meninges with fever: at the same time, these patients are deranged, and their heads must be soaked with *vinegar-rose*’. The historian and philosopher Michael Psellus (eleventh century CE), already

<sup>20</sup> On the obfuscation of vision, see also 1.9.60. <sup>21</sup> 2.429.26 Ermerins.

<sup>22</sup> *De urinis* 6.2.1.2, on *phrenitis* and urine. <sup>23</sup> 67.15 Ermerins.

mentioned, reflects on damaged sight with reference to phrenitic hallucination in his *Opuscula*.<sup>24</sup> His elaborations specifically concern colours:

If the vapour is overabundant, they see big/distant things; if it is yolk-coloured,<sup>25</sup> they see golden things; if it is smoky, they see white from the inflammation; and all in all, according to the shape and colour of what appears. In phrenitics, the vapours travel from the brain itself to the optical (organ?, *to optikon*); and those who experience cataract see the same way.

At *Opusculum* 55.8, we read: ‘Phrenitics are weaker after release (*meta tēn apallagēn*), because when they are released from the dry *dyskrasia* overpowering the brain and slackening their nerves, they feel the fatigue and the cleansing of their discerning faculty, and their nerves become weak as they recover moisture.’ *Opusculum* 55.142 comments on the pulse: ‘Phrenitics have a small pulse (are *smikrosphyktoi*), because the *pneuma* in their meninges is rarefied. Lethargics, on the other hand, have large pulses (are *megalosphyktoi*), because the *pneuma* thickens in them and grows heavy.’<sup>26</sup>

Joannes Actuarius (thirteenth–fourteenth centuries CE) as well, in his *De diagnosi*, connects *phrenitis* to the dryness or heat of humours settling into an unbalanced mixture, a *dyskrasia*.<sup>27</sup> At *De Diagnosi* 1.7, he categorizes *phrenitis* among the diseases of the nerves that strike the brain and spine: ‘of the brain, the spine,<sup>28</sup> and the nerves connected to them, lack of perception and faulty perceptions, and forms of *paraphrosynē*, *epilēpsia*, *melancholia*, *phrenitis* and *lēthargos*; *katalepsis*, insomnia and *kōma*; forms of *tetanos* and *paralysis*; and other such problems’,<sup>29</sup> while at 1.35 he writes: ‘As the blood specifically contrives *mania* according to how it changes and settles around the brain, the black bile causes *melancholia*, and yellow bile *phrenitis*, so too variations in the quality of the settlings or risings of the phlegmatic substance cause forms of *kōma* and dullness, as well as *lēthargos* and impaired perception (*dysaisthēsias*).’ In sum, in these authors received medical tradition connects the qualifying factors of the disease *phrenitis*

<sup>24</sup> *Opuscula logica, physica, allegorica, alia* 55, 1044 Duffy.

<sup>25</sup> This emphasis on colour, which we have found in Alexander of Aphrodisias (see Chapter 5, 163 n. 101), offers a point of contact with a possible parallel to *phrenitis* in the Talmud, the *kordiakos* (although see below, pp. 282–84, for cautions and qualifications).

<sup>26</sup> A point of doctrine that is actually Asclepiadean; see Chapter 3. <sup>27</sup> 1.33.69 Ideler.

<sup>28</sup> Of previous authors, only Asclepiades includes an inflamed spine among the affections produced by *phrenitis*.

<sup>29</sup> 1.7.10 Ideler.

with the topics of pulse, urine, overheating, fever, crocydism and hallucinations, with *loci* in the head, brain and meninges, and secondarily in the diaphragm and heart.<sup>30</sup> The emphasis on altered vision and the question of wine also recurs frequently.

*The Reception of Greek phrenitis in Syriac and Arabic Medical Sources: qarānītis (karabitus), birsām, sirsām*

The medical texts of the Syriac and Arabic tradition also largely reproduce Galenic (and to a lesser extent Hippocratic) doctrines, receiving them through the filter of late-antique commentaries and compendia (in the case of our disease, especially Orebasius, Aetius, Paul of Aegina and Alexander of Tralles).<sup>31</sup> Here too, therefore, we cannot expect completely new information. But the ways in which received ideas are managed, adapted and translated into the Semitic languages and specifics of the receiving cultures, academic-scientific as well as lay, are nonetheless worthy of attention.

The questions faced by these translators and scholars reflect tensions, concerns and intellectual interests that add to the itinerary being traced here, causing it to alter direction slightly or giving voice to side-branches of the tradition that had previously been dismissed. At the same time, problems of translation allow ancient ambiguities to re-emerge and revive. As we shall see, this is the case with the ancient discussion of the *name* of our disease, the meaning of the archaic term *phrenes*, and the debate about localization that accompanies these issues.

*The Name* The vicissitudes of the label *phrenitis* in the choices made by translators at the end of antiquity offer a miniature of the whole story of the disease, including the ambiguity of its etymology from the very beginning with reference to its *locus affectus*, as well its overall physiological make-up. The earliest phase in this regard is represented by Syriac authors, who

<sup>30</sup> Demaitre (2013) 133–34 summarizes the situation in regard to localization of the disease in medieval medicine by observing that with *frenesis* a further element of confusion was added by the occasional application of a similar label, “*phrenitis*”, to *hypochondria* as a brain condition caused by vapours rising from the diaphragm or “the abdominal area beneath the ribs”. The confusion in the formulation reflects the state of affairs in medieval medicine, as well as our own difficulty in grappling with these shifting representations.

<sup>31</sup> For an overview of sources, see Bornemann (1988).

constitute the bridge between the Graeco-Roman originals and the Arabic translations and elaborations,<sup>32</sup> laying the earliest foundation of the reception and translation of Greek texts into Semitic languages.<sup>33</sup> Barry's analysis<sup>34</sup> of two tenth-century Syriac lexica in relation to the Arabic and Syriac translation of the Hippocratic *Aphorisms* offers useful insights regarding *phrenitis*. The disease is already established here as a 'swelling' in the brain of the hot kind – the 'hot *apostēma*' which will become standard in medieval discussions:

1497:16 *Pêrnītīs* in a manuscript, chronic ravings occurring with fevers, *phrenitis (sarsām)*, he introduced *phrenitis (birsām)*.

1607:3 *Prêniītīs* in a manuscript, chronic ravings that (occur) with fevers, *phrenitis (sarsām)*, which is *phrenitis (birsām)*. It is said (to be) swelling of the brain. (According to) Paul, *phrenitis (birsām)*, and according to Zakariya and bar Serošway, hot swellings that are in the head, hot swellings that happen in the head, *phrenitis (birsām)*, madness. A hot swelling that occurs in the brain, hot swellings that occur in the brain.<sup>35</sup>

In these entries in the lexica, a key element is visible: the alternation between transliteration (*prêniītīs*) and two different terms, *sarsām* and *birsām*, to which we shall return. Also relevant are the entries in which the scholar comments on the occurrence of Greek *phrenos/φρενός* (from *phrēn/φρήν*):

1606:23 *Prêyas* according to bar Serošway, judgement, thought. *Prēnas* in a manuscript, diaphragm (*hijāb*). According to Paul, *the peritoneum (safāqāt) of the chest*.

Barry notes that the term *phrēn/φρήν*, which occurs three times in the *Aphorisms*, is translated in the various Syriac versions 'with a form of the borrowed Greek word' (i.e. *prêyas*), while Ḥunayn's Arabic version utilizes forms of *al-ḥijāb, diaphragm* in two cases; in the third (*Aph.* 6.18), he uses *al-kulyā*, 'kidney', in a list of body parts.<sup>36</sup>

*Phrenos/φρενός* in the Syriac authors thus seems to indicate the diaphragm, as well the related meaning 'mind', but is not placed in relation to

<sup>32</sup> Barry (2016) 8–13, 13–16 on Ḥunayn's contacts with Syriac physicians and the role played by Syriac translations in his work.

<sup>33</sup> See Dols (1992) 38–47. <sup>34</sup> Barry (2016) 120. <sup>35</sup> Barry (2016) 120.

<sup>36</sup> Barry (2016) 140–41; cf. Overwien (2015) 173–74. The aphorism in question is *Aph.* 6.18 (452.1–2 Magdalaine = 4.568 L.) 'A severe wound of the bladder, brain, heart, midriff, one of the smaller intestines, belly or liver, is deadly' (*kystin diakopenti ē enkephalon ē kardiēn ē phrenas ē tōn enterōn ti tōn leptōn ē kōiliēn ē hēpar thanatōdes*); Magdalaine and Mimura both read *phrenas/φρενός* here. This episode is at the origin of an enduring intrusion 'mistakenly' implicating the kidneys with *phrenitis*. See the detective story offered by Carpentieri and Mimura (2017) regarding the scribal error involving *nephritis* and *phrenitis*, and the scholarship it engendered, and cf. Ullmann in Barry (2016) 141 n. 141; also Cooper (2019) 186 on Ḥunayn on *phrenitis*.

*phren-itis*. In a similar fashion, in Arabic sources the translation of the term *phrenitis* oscillates between transliteration (which results in *qarānītis*, and *karābitus* in the Latin translation of Avicenna by Gerard of Cremona, which was the most influential in the Latin West) and adoption of the two Persian words found in the Syriac lexicon, *birsām* and *sirsām*.<sup>37</sup> Literally interpreted, the first term indicates an inflammation of the chest (*bir*, ‘chest’ + *sām*, ‘inflammation’ in Persian), the second an inflammation of the brain (*sir*, ‘head’ + *sām*, ‘inflammation’).<sup>38</sup> These labels were long taken by scholars to be basically synonymous and scarcely distinguished in Arabic usage.<sup>39</sup> But Carpentieri and others have recently corrected this view, tracing instead a development;<sup>40</sup> here I largely follow and summarize their expert reconstruction. *Birsām* earlier described ‘two illnesses with similar symptoms. It referred to an inflammation of either the meninges (brain fever) or the diaphragm (diaphragmatic fever). Both inflammations would cause delirium with high fever and were typically fatal. In the second and later stage, the usage of *birsām* became more restricted, designating only diaphragmatic fever. Brain fever, on the other hand, came to be referred to exclusively as *sirsām*’.<sup>41</sup>

This confusion – which reproduces the differentiation Galen sketched out in *On the Affected Places* between the two kinds of *phrenitis*, one in the brain, the other in the diaphragm<sup>42</sup> – originated with Ḥunayn’s reference (in the ninth century CE) to *phrenitis* with the term *birsām*. In his translation of Galen’s commentary on *Aphorisms* 6.11, on *phrenitis*, Ḥunayn offered the following commentary: ‘[Doctors] mean by *birsām* a fever from a hot inflammation occurring in the meninges or in the *ḥiğāb*, and delirium necessarily occurs with it. They call it in Greek *frānītis*. *Al-ḥijāb*, erroneously translated in the past as ‘meninges’, actually means ‘diaphragm’ (translating *διάρρηγμα* or *φρήν*);<sup>43</sup> in sum, Ḥunayn is using *birsām* for affections of both the brain/meninges and the chest.’<sup>44</sup>

<sup>37</sup> In addition to these etymologically pregnant labels, in Arabic the word *ikhṭilāt* (‘confusion’, ‘delirium’) is often used to translate Greek *phrenitis*, focusing on the confusion of the intellect (*al-aql*). See Ullmann (2002) *ad loc.*

<sup>38</sup> On the ambiguity between these two terms as recognized and discussed also by Syriac translators, see Barry (2016) 120; Carpentieri *et al.* (2018) 307 on the varying spelling.

<sup>39</sup> See Dols (1992) 57, 74–75 on this point. With Ullman (1978) 29, Dols explains the alternation with the fact that the two words often appeared together in earlier poetry. See also Jacquart (1992) 184 on how al-Rāzī uses all three terms indifferently.

<sup>40</sup> Carpentieri (2017) 1, mentioning Ullmann (1978) 29 and Dols (1992); Carpentieri and Mimura (2017), focusing on the Arabic commentators on the Hippocratic aphorisms; Carpentieri *et al.* (2018).

<sup>41</sup> Carpentieri (2017) 2. <sup>42</sup> Repeatedly discussed in Chapter 5. <sup>43</sup> Carpentieri (2017) 3–4.

<sup>44</sup> On this superimposition in Ḥunayn, see Carpentieri and Mimura (2017) 183–85.

Elsewhere, in fact, he speaks of a kind of ‘*birsām* that is called *sirsām*’, indicating specifically the meningitic version.<sup>45</sup> He then employs the chest-centred label *birsām* as the umbrella term, contrary to the encephalic focus the disease will subsequently have, perhaps because it transliterates with a precise semantic transference the Greek for ‘diaphragm’: *phrēn-itis*.

Readers of and translators into Arabic, however, early on show an awareness of the risk of confusing the two locations and anatomical parts the labels *birsām* and *sirsām* designate with their respective pathological data, and eventually discard the conflated use of *birsām* to indicate both. This move is evident in a number of Arabic authors from the middle of the tenth century onwards.<sup>46</sup> Consider the wording chosen by al-Kashkarī (tenth–eleventh centuries CE), by al-Rāzī (ninth/tenth century CE), and most influentially by the philosopher and physician Ibn Sīnā (Avicenna, 980–1037 CE), the author of the *al-Qānūn* (*Canon*).<sup>47</sup> Al-Kashkarī already distinguishes the terms *birsām* and *sirsām*, along with the diseases which ensue with their different localizations. Al-Rāzī states that the term *birsām* is used for two different diseases, one of the chest and the other of the brain, but that the second is more appropriately called *sirsām*: ‘In his *al-Hāwī fī l-ṭibb*, Rāzī states that *birsām* is used for two diseases: one is *shawṣa*, a kind of pleurisy or inflammation of the chest, and the other is an inflammation of the brain, which is properly called *sirsām*.’<sup>48</sup> *Birsām* and *sirsām* correspond here, respectively, to *pleuritis* and *phrenitis* proper, articulating once again the ancient parallelism – although elsewhere some confusion remains.<sup>49</sup> Ibn Sīnā, finally, clarifies the distinction between the names at greatest length. When he discusses *Qarānītīs* (*karabitus* in the Latin transliteration) among the diseases of the head in Book 3 of his *al-Qānūn fī l-ṭibb*, or *Canon of Medicine* (3.I.3), he criticizes the use of *birsām* and *sirsām* as synonyms as linguistically incompetent (2:76):<sup>50</sup>

Book 3, *fann* 1, *maqāla* 3

*Qarānītīs* refers to a hot swelling of the membranes of the brain, either the tender or the tough one [i.e. the pia and the dura mater], without damaging it. But if the brain is damaged, it might swell. The physicians who think that the brain itself does not become swollen are mistaken. They adduce that

<sup>45</sup> Hunayn, *Comm. Hipp. Epid.* VI 306, quoted by Carpentieri (2017) 3.

<sup>46</sup> Carpentieri (2017) 2–3. <sup>47</sup> Carpentieri (2017) 2–5.

<sup>48</sup> Carpentieri (2017) 9; Jacquart (1992) 187–88. On *phrenitis* in al-Rāzī’s patient cases, see Álvarez Millán (2015) 80 with n. 71.

<sup>49</sup> See below, with n. 56.

<sup>50</sup> Translation by Ignacio Sanchez, whom I thank for all his help with the Arabic text here and throughout this chapter. On this passage, see Jacquart (1992) 182–85; Carpentieri *et al.* (2018) 297–98.

everything that is tender, like the brain, or hard, like the bones, does not expand, and therefore the brain does not swell. This statement is wrong, because tender and viscous [organs] expand, and bones also swell. Galen has confirmed that, and I will explain this in the chapter on teeth, but now [it is enough to] say that everything that is nurtured expands and grows with nourishment and, similarly, it must expand and grow with residues: this is the swelling.

Therefore, if the brain becomes swollen, *qarānīṭis* and *sirsām* are the names that refer specifically to the swelling of the membrane of the brain when [the swelling] is hot. This [name] might occur in some places referring also to the body of the brain (*jawhar al-dimāgh*); this is a specific use of the term transferred from the name of the symptom that [the swelling] brings about, namely delirium (*hadhayān*), mental confusion (*ikhtilāṭ al-‘aql*) and burning heat (*ḥarāra muḥriqa*). The common [use of] the name is associated with the symptom, the technical use with the swelling.

The transfer of this name is similar to the adoption of the name ‘forgetfulness’ (*nisyān*), which is a symptom, when used to refer to a disease that necessarily presents itself with [this symptom]: the cold *sirsām*. When the term *sirsām* is used in a general sense, it also refers to the *sirsām* of the brain, which is this [disease].

People unacquainted with the vocabulary<sup>51</sup> believe that *birsām* is the name of this swelling and that *sirsām* refers to a milder form of it; but it is not like that. *Birsām* is a Persian word: *bir* means chest, and *sām* means swelling. *Sirsām* also comes from Persian: *sir* means head, and *sām* means swelling, illness. *Sirsām* is the disease caused by fevers and by the burning mixture [of humours] in the mouth of the stomach, and it might also be caused by swellings in the outer parts of the head or in the external membrane (*ghishā*).

*Sirsām* occurs together with *birsām* as a result of the sympathetic relationship with the diaphragm (*bi-mushāarakat al-ḥijāb*), its swelling and that of all the muscles of the chest. There is one caused by the swelling of the bladder, the uterus and the stomach.

Due to common use of this term, the authors disagree in their descriptions, just as they disagree about [the term] ‘lethargy’ (*litharghus*), which is the cold *sirsām* called forgetfulness (*nisyān*). However, the real *sirsām*, according to the technical use of the name, is [the disease] we have described. It is possible that the brain becomes swollen along with it due to sympathy (*mushāaraka*) or transmission (*intiḡāl*). In this case, there is great damage and it kills in four days. If [the sick person] goes beyond [this time],

<sup>51</sup> Later the translator of Avicenna into Latin, Gerard of Cremona, uses the more recherché term *prenomina* here. For Carpentieri *et al.* (2018) 311–12, this shows that Gerardo holds the original discussion of *sirsām*, *birsām* and *karabitus* in Avicenna in high regard and is striving to render it as appropriately as possible.



he will survive, but most of those who die of *sirsām* die due to the damage to their breathing capacities (*nafs*).<sup>52</sup>

In sum: *sirsām* is found in lay usage indicating a swelling/abscess of the brain which can be accompanied by fever and have multiple origins and causes, with the involvement of stomach, bladder or womb; most prominently, it can affect the membranes of the brain or its external part, but also the body of the brain itself; and it manifests itself in multiple versions (e.g. the hot one under discussion and the cold one, oblivion or 'lethargy'). *Birsām*, on the other hand, is specific to the chest. For Ibn Sīnā, there is no gradation of severity between the two, but only a shift in localization; *birsām* can in fact occur together with *sirsām*, with the second becoming the umbrella term.<sup>53</sup> But 'real *phrenitis*' is used in medical language to refer to an inflammation of the membranes of the brain, sometimes with involvement of the brain itself.

Another eleventh-century source in Arabic, the dictionary *Kitāb al-Mā'* by an author apparently from Oman, al-Dhahabī,<sup>54</sup> preserves important parallel information in the entries for *Birsām*, *Sirsām* and *Qarānītis*. The dictionary is largely based on Ibn Sīnā, of whom the alleged author was a student, but is interesting for how it centres the perceived connection between the membranes of the chest and those of the brain to explain the derangement common to both pathological forms: the term used is *ittiṣāl*, which indicates a concrete anatomical 'bridging' between brain and chest, and is much stronger than *sympatheia*, which Galen had used in *On the Affected Places* and elsewhere in his accounts of the type of *phrenitis* which involves the diaphragm as well as the brain.<sup>55</sup> Discussing the disease the Greek sources call *phrenitis*, he writes first at 1:203–04:

*B.r.s.m*

*al-Birsām*, an Arabized Persian word, means chest-swelling because *bir* means chest in Persian, and *sām* means swelling. This is a warm swelling in the membrane (*hijāb*) between the liver and the stomach which provokes

<sup>52</sup> Jacquart (1992) 183 (my translation) recognizes important 'Galenic echoes in the discussion of the nosological category separate from the symptoms (cf. *MM* II.2 = 10.81–85 Kühn). Avicenna . . . follows Paul of Aegina and defines *qarānītis* as an inflammation and tumefaction of the meninges, and by extension as an affection of the brain.' The term *nafs* is here translated physiologically, as 'breathing', by Ignacio Sanchez (following Ibn Sīnā's consistent use, as well as Gerard of Cremona's translation into Latin, *moriuntur propter impedimentum in spiritu*). But the term may refer to the material (mortal, for Ibn Sīnā) soul or spirit, as for Dols (1992) 75.

<sup>53</sup> On this point, see Dols (1992) 74–75.

<sup>54</sup> See Bachour (2017) for the information on this source: the author was a physician or well versed in medicine, and was a traveller across many regions of the Islamic world.

<sup>55</sup> See above, Chapter 5, pp. 104–06.

delirium (*hadhayān*) due to the connection (*ittiṣāl*) of this membrane with the membranes of the brain (*ḥujub al-dimāgh*).

This could be caused either by unmixed blood (*dam ṣirf*), given that its symptoms are spasm (*tamaddud*, which translates the Greek *syntaxis*, ‘rigidity’ or ‘tension’), redness on the face, an intense pulse (‘*izm al-nabd*’), and shortness of breath; by blood with yellow bile (*dam ṣafrāwī*), given that its symptoms are great distress (*shiddat al-nakhs*) and pain, intense fever and accelerated pulse; or by blood with black bile (*dam sawdāwī*), in which case the symptoms are great distress, a dry mouth, strong fever, and coarseness and blackness of the tongue. It is lethal in most cases.

As for blood with phlegm, it rarely causes this [disease]; its symptoms are intense pain, a light fever and slight distress. In general, this is one of the swellings proper of the membranes.

...

Those called *mubarsimūn* (i.e. affected by *birsām*) are persons affected by melancholic delirium/delusion (*al-waswās al-sawdāwī*).

Then again, our *phrenitis* returns as *sirsām* later at 2:286–87, as the hot variety of meningeal swelling (the cold one being *lēthargos*) – and, only by extension,<sup>56</sup> of the body of the brain as well. The membraneous nature of the *locus affectus* is central for this author in the definition of *birsām* and *sirsām*.

*S.r.s.m*

*Al-Sirsām*: there are [two kinds] of it, the cold one, called *l.th.gh.r.s* in Greek, and the warm one, which is the *qarānītīs*.

The cold *sirsām* is a disease called after the name of its symptom, because the translation of *l.th.gh.r.s* is forgetfulness (*nisyān*). Many physicians have been wrong about it, for they did not know that the disease that results from cold swelling is only a symptom of it; rather, they believed that this disease was one and the same as forgetfulness.

[*Sirsām*] can be phlegmatic (*balghamī*), since its cause is the phlegmatic matter inside the skull and inside the conduits of the brain. Its symptoms are a mild headache, light fever, abundant salivation and yawning, whiteness of the tongue, laziness in answering, confusion of the mind and unavoidable forgetfulness. The eyes [of the sick] are completely open and fixed [on a point]. Treatment of it consists of the evacuation of the matter with enemas and pills; sometimes bloodletting is in order, because it reduces the matter.

As for the warm *sirsām*, this is the one called *qarānītīs*, which is a swelling of one of the membranes of the brain or of both of them. This is the proper *sirsām*, but [the name] may be figuratively applied (‘*alā sabīl al-majāz*’) to the swelling of the substance of the brain.

<sup>56</sup> On this point this author disagrees with Ibn Sīnā; see above, pp. 238–39.

It may be caused by fine blood (*dam raqīq*), since its symptoms are constant fever with heaviness of the head, redness in the eyes and face, and an intense pulse. This is treated by bleeding the cephalic vein and relaxing the nature [of the patient's body], cooling the head with rose-water, rose-oil or something similar.

Another cause is [blood] with yellow bile, since its symptoms are an intense hot fever, insomnia, lightness of the head, yellowness of the face, an accelerated pulse and delirium (*hadhayān*).

Treatment of it consists of evacuating the yellow bile by administering barley and pear water, and cooling the head with rose water and gourd peel.<sup>57</sup>

Finally, the dictionary also discusses *Qarānīṭis* as a separate item:<sup>58</sup>

*Qarānīṭis.*

This is the Greek name for the hot *sirsām*, which is a swelling in one of the membranes of the brain or in both of them. This is the real *sirsām*, but [the name] might be figuratively applied to a swelling in the body of the brain (*jawbar al-dimāgh*).

This disease might be caused by fine blood (*dam raqīq*), in which case the symptoms are constant fever, heaviness of the head, redness in the eyes and face and an intense pulse. This is treated by bleeding the cephalic vein, relaxing the nature [of the body] and cooling down the head with rose-water or rose-oil.

Another cause could be the yellow bile, since its symptoms are an intense hot fever, insomnia, lightness of the head, yellowness of the face, an accelerated pulse and delirium. This is treated by evacuating the yellow bile, administering barley water and pear water and cooling down the head with rose water and gourd juice.

Later Arabic commentaries continue to articulate the distinction between the two versions of the disease, one centred in the brain and the other in the chest. As Carpentieri shows, ‘Abd al-Laṭīf al-Baghdādī (twelfth century CE), for example, paraphrases Ḥunayn’s text, but writes ‘inflammation in the meninges of the brain *or* in the *ḥijāb*’, conflating the two locations. So too the Syriac physician Ibn al-Nafīs (twelfth century CE) points out that ‘when delirium happens because of an inflammation, if the latter is in the brain, it is called *sirsām*; if it happens in the chest, it is called *birsām*’; the derangement common to both is emphasized here. A similar statement differentiating between brain and diaphragm is found in Ibn al-Quff:<sup>59</sup> ‘in the meninges, and that is called *sirsām* . . . an inflammation of the

<sup>57</sup> Ibn al-Dhahabī, *Kitāb al-Mā’*, 1:203–04, 2:286–87, translated by Ignacio Sanchez, whom I thank again.

<sup>58</sup> Ibn al-Dhahabī, *Kitāb al-Mā’*, 3:201. This editor vocalizes it *qarānīṭas*.

<sup>59</sup> Carpentieri (2017) 6.

diaphragm, and this is called *birsām*' (ii.2). According to this text, the diseases that derive from the ailment – one an inflammation of the 'membrane called the *afraǧmā*', namely *birsām*, the other of the membranes of the brain or in the whole brain, namely *sirsām* – are very similar, but their localization and manifestations differ: 'On the one hand, in *sirsām* delirium precedes shortness of breath, whereas in *birsām*, the opposite occurs. On the other hand, *sirsām* does not cause a fever as intense as *birsām* does' (iv.50).<sup>60</sup>

In sum, the Arabic commentators and scholars, reading the Greek sources afresh and from outside the long tradition of chest–brain dualism, turn their attention to the philological problem posed by *birsām* and *sirsām* as if it were mostly a point of vocabulary. The ambiguity or ambivalence between chest and head, however, continues in the centuries of translation and commentary that follow, with different authors returning to the point, at times misunderstanding the terms and variously glossing the relationship between pathology of the brain and pathology of the chest (*pleuritis*, for which *bar-sām* is still used in Arabic today) which *birsām* and *sirsām* spell out.<sup>61</sup>

*The Disease Phrenitis* is still firmly associated in this period with mental disturbance. The ninth-century Christian Syrian physician Ibn Serapion (Yaḥyā ibn Sarafiyūn) speaks of the association between *phrenitis* (*quarānītis*) and mania (*maniya*), 'especially severe madness (*al-junūn al-hā'ij*)',<sup>62</sup> since they can cause similar pain. While other key symptoms are common – insomnia, anxiety, delirium, a firm pulse – *phrenitis* is distinguished by fever. Proposed therapies include massages ('the lower limbs should be massaged and the stomach moistened, and the patient bled and purged with a potion made of *myrolaban*' – the plant *Terminalia chebula*, native to India and South-East Asia and a late addition to the *materia medica*), embrocations and anointing the head. In addition, there is a relational-psychological expedient, the recommendation of contact with persons towards whom the patient feels reverence and shame, 'lest his derangement increase and become habitual' (*al-Ḥāwī*, i.208).<sup>63</sup> The final point remains an isolated one: as Dols observes, these authors

<sup>60</sup> Carpentieri (2017) 6.

<sup>61</sup> See e.g. McVaugh, Bos and Shatzmiller (2019) 55–57 on the problems posed by *al-sirsām*, recognized by some but not all readers as *frenesis*, in the translation into Latin and Hebrew of Avenzoar's *Regimen sanitatis* 28.

<sup>62</sup> Dols (1992) 58.

<sup>63</sup> On a similar psychotherapeutic point, see Caelius Aurelianus (Chapter 3, pp. 75, 90–93).

generally agree with a humoral aetiology for mental disorders, so psychotherapeutic measures are not systematically suggested.<sup>64</sup>

Al-Rāzī is credited by some scholars with a persuasive account of *phrenitis* (*sirsām*) as ‘meningitic’ disease.<sup>65</sup> But some of these retrospective identifications have become conventional without having been examined in depth.<sup>66</sup> The case of *sirsām* as equivalent to meningitis is one phase of ‘delimitation’ of the disease *phrenitis* in the course of its history: its restricted assignment to the brain, synchronically, and its retrospective identification by medical historians with the inflammatory disease ‘meningitis’. In the *Book of Cases*, Álvarez Millán, for instance, writes: ‘Three patients are said to suffer from meningitis (*sirsām*), one of them accompanied by *pleurisy* (*shawṣa*), another by hiccups.’<sup>67</sup> Four patients are described as suffering from *birsām*, which appears to correspond here to pleurisy.

In his *Divisions* (*Taqāsim al-‘Ilal*),<sup>68</sup> al-Rāzī also devotes a chapter to swellings of the brain, addressing the hot and the cold ones, *phrenitis* and *lēthargos*, respectively. The former can originate in a condition of the blood or bile (reflecting the doctrine also followed by Byzantine medicine). The pathological signs differ as a consequence: with the first there is continuous fever and redness of the face and eyes, a rapid pulse and swollen veins. With *lēthargos* the fever is more intense, and there are convulsions, intense delirium, pain in the head and swollen eyes. Surprisingly, however, both variants are called *birsām*, not *sirsām*.

Pathologically, an important theme addressed by this author is the distinction between swelling of the brain and swelling of the meninges. Quoting from Jacquart’s paraphrase from the *Discussion of the Differences between Diseases* (*Kalām fī l-furūq bayna al-amrad*), a text of dubious attribution,<sup>69</sup> the physician sees both states as morbid, hence the

<sup>64</sup> Dols (1992) 59.

<sup>65</sup> For a retrospective validation of this interpretation of *sirsām* in the work of al-Rāzī, see Meyerhof (1935) 334, 350. See also Dols (1992) 57–58 for a summary of al-Rāzī’s chapters 9 and 10, devoted to lethargy and *phrenitis*; Jacquart (1992) 184–86.

<sup>66</sup> Álvarez Millán (2015) 77; 67 n. 44, 80 is an example. On the one hand, she explores the symptomatology of *sirsām*, which is centred in the head and involves some standard phrenitic signs, but on the other hand she diagnoses it employing the modern labels ‘meningitis’ or ‘meningism’. (The latter mimics the former without actual inflammation of the cerebral membranes.) See also Adeli Sardo’s 1999 translation of Avicenna’s *Qānūn* from the Arabic into English, which opens the paragraph on *phrenitis* by translating *karabitus* as ‘encephalitis’.

<sup>67</sup> Álvarez Millán (2015) 77. <sup>68</sup> Quoted and discussed by Jacquart (1992) 185.

<sup>69</sup> Printed in Qatāya (1978) 41–43, quoted in Jacquart (1992) 186–87. This work was attributed to al-Rāzī by Qatāya and, in a second edition by Ramziyya al-Araqjī, to Ibn al-Jazzār; it was certainly not written by al-Rāzī. On the problems involving the work, see Saba (2019) 45–54. I thank Ignacio Sánchez for clarifications in this regard.

unavoidable mental confusion and fever. But they are distinguished by their localization and signs. The first, which strikes the brain, is obvious: pain is felt from the start, accompanied by oppression/heaviness, and is penetrating. Worsening mental confusion, combined with a palpitating pulse and a lighter fever, follow. Some authors, writes al-Rāzī, nonetheless deny that the brain matter can swell due to its viscosity. As for the second variant of the disease, when the meninges are affected, there is 'intense pain from the start, extending to the forehead and the cranium; the pulse is hard, like the teeth of a saw; fever is acute, but mental confusion comes long after the pain and is lighter'. Fever and confusion are thus in an inverse relation, reflecting the degree of the brain's involvement, of which confusion is the direct consequence.

This issue also touches on the differentiation between *phrenitis* and *mania*, as posed in another question of the *Furūq*: 'What is the difference between *maniya* (*mania*) and *qarānīṭis* (*phrenitis*)?' They share the same localization in the brain, the hot matter and the confusion of the spirit; but they differ in signs and causes. *Maniya* is caused by inflamed bile, *qarānīṭis* by putrid blood or bile. As far as signs are concerned, there is no swelling or fever in *maniya*, and despite the heating, the brain matter is not damaged; in this case, therefore, there is corruption of the language only in the sense of an inability to combine words. In *qarānīṭis*, on the other hand, even the combination of letters fails due to the involvement of the brain matter, and the patient can only articulate sounds.<sup>70</sup> Fever and alteration of the brain are again central to the definition; information about language is also important and reveals the criticality of the brain to the affection. In *mania*, only the heat increases, whereas in *phrenitis* the working of the brain is altered by the swelling. We thus pass from the milder delirium of the manic to the phrenitic's more extreme inability to articulate words by combining letters, from a derangement of judgement to a deeper modification of the senses in their entirety.

Language is also discussed in *al-Ḥāwī*, where al-Rāzī describes an evolution in the course of the disease over time. At the beginning, words are disorderly; then the patients cease to speak; and at the end, in the most acute phase, they have no voice at all.<sup>71</sup> More generally in terms of the pathological picture, at *al-Ḥāwī* I:200 al-Rāzī lists prodromic signs as well as proper manifestations of the disease: the first are a light fever on the surface of the body, a face congested with blood, continuous insomnia, disordered words, intense sadness, indolence, continuous movement in

<sup>70</sup> Jacquart (1992) 186, quoting Qaṭāya (1978) 47–49. <sup>71</sup> *Al-Ḥāwī* 1, 10. Cf. Jacquart (1992) 187.

bed, redness of the eyes, lacrimation, coldness of the extremities, feeble emission of urine, a hammering feeling in the temples, buzzing ears, pain in the heart, a swelling of the *hypochondria* and a fixed gaze. Once *sirsām* is established, there is acute fever, a small and frequent pulse, crocydism, substantial insomnia, confusion of the senses on the fourth day, a burning feeling inside accompanied by anger and fury; the patient has a fierce look in his eyes, stretches out his hand, no longer speaks and shies away from light. In the acute phase, diarrhoea appears along with a swelling of the eyes and face, trembling hands and an irregular pulse, until at last the *hypochondria* become sensitive, the tongue swells and the patient loses his voice. Intriguingly, there is no reference to crocydism, and the question of hallucinations gets less emphasis than in the ancient authors.<sup>72</sup> But the richest and most comprehensive account is found in Ibn Sina's *al-Qānūn fi l-ṭibb* (*Canon of Medicine*), discussed below.<sup>73</sup>

#### *A Twelfth-Century Syriac Source: The Book of Medicines*

So far, the landscape we have surveyed has mostly consisted of official trends in professional medicine or elevated intellectual life in late-antique and medieval times. As we consider this evidence, however, we should bear in mind that it is in many ways partial and unbalanced in terms of geographic and political proximity to the cultural centres of the time and their significance in subsequent reception in the history of medicine. Ancient historians are generally plagued by a lack of access to alternative narratives provided by less institutional or decentred environments. Sometimes, however, ancient sources that at first glance appear directly derivative of central authors in the canon offer access to bodies of knowledge far from the mainstream perspectives which dominate historiographies of medicine.

This is partially the case for the main Syriac medical source available to us, the so-called *Book of Medicines*. The Syriac manuscript of this text was presented to the scholarly world by Ernest Wallis Budge, who discovered it in 1884 in Mesopotamia and had it copied and published with an English translation<sup>74</sup> as

<sup>72</sup> Jacquart (1992) 187, who comments that, compared to the ancient legacy on which al-Rāzī is elaborating, he leaves an impression of a lack of consistency and precision in his nosological description.

<sup>73</sup> Pp. 261–73.

<sup>74</sup> See Budge (1913/2009) xl–xli on the discovery and transcription of the manuscript; Bhayro (2013) 126; Bhayro and Rudolf (2018) 116–17; Bhayro (2019) 171–73.

a series of Lectures upon human anatomy, pathology, and therapeutics . . . which were translated from Greek into Syriac by a Syrian physician, who was probably a Nestorian . . . He may well have been attached to one of the great medical schools, which existed at Edessa (Urfa) and Âmid (Diarbekîr) and Nisibis, in the early centuries of the Christian era.<sup>75</sup>

The manuscript was composed of three parts, schematically – and inadequately<sup>76</sup> – described in Budge's first publication as the first 'scientific', the second 'astrological' and the third 'popular, sympathetic or magical'.<sup>77</sup> The first part (chapters 3–21) interests us here, since it contains what initially appears to be discussion of straightforward medical topics. These are organized *a capite ad calcem*, thus with head affections at the very beginning. The author refers to Hippocrates as an authority and calls the brain the 'head' or 'governor', but also sees the heart, together with the liver, as a key organ for other functions. The discussions are followed by recipes which appear to come partially from ancient Mesopotamia.<sup>78</sup> This first part also contains a lengthy discussion of *phrenitis* which seems at first glance to derive in a straightforward fashion from the relevant sections on *phrenitis* in *On the Affected Places* (5.4).<sup>79</sup>

If the dating of at least part of the text to the early centuries of our era is accepted by most scholars, recent work has persuasively challenged the neat picture in which the recognizable Greek sources and the Eastern astrological and pharmaceutical elements of the later parts remain as separate as oil and water. An 'intrusion' of astrological elements, for example, in the 'scientific' section has been noted; according to Bhayro, the text is thus best described as a twelfth-century stratified compilation, in which Graeco-Roman elements from earlier medical translations into Syriac are blended with 'local', possibly much more ancient Mesopotamian material in a more complex manner than simple juxtaposition (let alone interpolation of so-called 'popular' elements).<sup>80</sup> As such, the book would offer an example of syncretism between Western medical material and a much older tradition

<sup>75</sup> Budge (1913/2009) v.

<sup>76</sup> See Bhayro (2013) 127, 141 on the Orientalism of this opposition between Western science and Eastern magic, and what might even be described as the 'antisemitism' of a certain scholarly posture towards non-Greek medical cultures (Bhayro and Rudolf 2018, 118–20); Asper (2015) 40–42 for an alternative discussion of the relationship between Near Eastern and Western science.

<sup>77</sup> Budge's schematization; he concludes that 'most, if not all, the "exact" sciences are derived from Greek sources' and that 'the first part is, then, unquestionably a translation from a Greek work of great antiquity composed probably in Alexandria' no later than the second or third century CE.

<sup>78</sup> See the Introduction (v–clxxvii) to Budge (1913/2009).

<sup>79</sup> See Schleifer (1926a), esp. 70–73 with a table of *loci paralleli* with sections of *On the Affected Places*; Schleifer (1926b); Schleifer (1927) 224–25, and before him Brockelmann (1914) 186–88; Löw (1916). See also Bhayro and Rudolf (2018) 126 on how to make profitable use of *Quellenforschung* in this case.

<sup>80</sup> Bhayro (2013) 126; Bhayro and Rudolf (2018).



going back to ancient Babylonia.<sup>81</sup> It is in this light that we will consider the *Book of Medicines* as at least in part a specimen of an ongoing alternative medical tradition beginning much earlier, which elaborated and assimilated Greek material while reshaping it in different directions from those of the Galenism dominant in later European medicine.

This topic is interesting for the reconstruction of *phrenitis*, because the text offers an account of the disease in which the proportion between ‘head’ and ‘chest’ is reversed. At first sight this presentation reflects the organization of the topic of *phrenitis* in Galen’s *On the Affected Places*,<sup>82</sup> the key source of this passage (and indeed the entire book): there *phrenitis* was discussed at length in the section about the diaphragm, not the brain, in contradiction to the general presentation of the disease by Galen as encephalic. Thus the author of the *Syriac Book of Medicines* discusses the head and its diseases in chapter 3 (the first chapter preserved in the manuscript we have).<sup>83</sup> In stark opposition to the tendency first of official imperial medicine, then of encyclopaedic sources, and finally of Arabic readers of Greek medicine nearer in time to the compilation of the Syriac book, *phrenitis* is not included in this chapter, although the discussion focuses on the brain as source of the impairments in the ‘spirit’ or ‘soul’ which cause *inter alia melancholia*, epilepsy, fear and vertigo. *Phrenitis* is found only in chapter 13, as an important topic within the discussion of symptoms and injuries to the lungs (‘Of the symptoms of the injuries that take place in the lungs, and in all the organs of the breast’, 241, p. 216, folio 104a). This straightforward adoption of *On the Affected Places* 5.4 as an exclusive source by the Syriac author (motivated perhaps to a large extent by the popularity and practicality of the work, as opposed to other texts by Galen) results in a presentation which resonates with a more Eastern, ‘cardiocentric’ or ‘enterocentric’ – as opposed to neural and encephalic – representation of human psychic life. Notwithstanding the complexity and sophistication of the discussions of the brain in the early chapters (which largely reproduce Galenic ideas and principles of humoral medicine<sup>84</sup>), *phrenitis* is ultimately framed by the Syriac compiler as a chest disease, located just after ‘pleurisy’ (‘the disease which is called perforation’, 250, p. 225, folio 108b) among the ‘perforations of the lungs’ produced by

<sup>81</sup> Bhayro (2013); Bhayro and Rudolf (2018).

<sup>82</sup> Galen decided to discuss the ‘main’ *phrenitis* of the encephalic kind only briefly in *On the Affected Places* 3.9 (8.177–79 K.) and to offer the full pathological profile instead at 5.4 (8.327–32 K.), where the chest is considered.

<sup>83</sup> For a list of contents, see Budge (1913/2009) xli–li.

<sup>84</sup> See Schleifer (1927) 215–29 for the comment on this, and the obvious source in *Loc. Aff.* 5, 8.327 K.

‘abscesses in the moving membrane of the chest . . . accompanied by fever and by stabbing pain’. Among its symptoms are short breath, a hard pulse and coughing (251–54, pp. 226–29, folios 109a–10b). Following Galen’s argument in *Loc. Aff.*, there is also a section within the section devoted to the chest (253–54, pp. 228–29, folio 110a–b) that treats inflammation of the brain, reproducing the persistent duality in the approach to the disease. Galen’s authority in that treatise, however, is concomitant rather than causal to the choice of the Syriac author, who ‘selectively’ emphasizes the one chest-centred account of phrenitic derangement in Galen, sidelining the much stronger encephalic elaboration in his work, as well as in other authors of the imperial era. In line with an Eastern Mesopotamian representation of the human body, the disease is here primarily assigned to the chest, reversing the structure that dominates the medical sources from Hellenistic medicine to Avicenna.<sup>85</sup>

Let us consider the text (Book 13, pp. 226–29, folios 109a–10b) a bit more closely to illustrate these points.<sup>86</sup> First a discussion of etymology is introduced: ‘All the early physicians have called the lower boundary of the chest *parnôs*, because when an abscess exists in it, the understanding (or knowledge) of those who suffer is injured.’ In the Greek original at this point, Galen has a crucial sentence: ‘or because it came to them simply like that’. Galen’s point is that the name is randomly assigned and has a lay origin. The Syriac author omits this dismissive second point, validating the involvement of the chest in disorders of the reasoning faculties as fact rather than as a misperception. The word *parnôs*, continues the author, translated into Syriac means

that by means of which we carry on the process ‘of thought and the process of making calculations’ [*sic*] . . . Some have called it the diaphragm, others the ‘understanding’, for they thought that this filled the need for boundaries in animals, because it distinguishes and defines the ferocious (or wrathful) part of the soul, which is situated in the heart, from the lustful portion, which dwells in the liver.

Here, again the author translates *phrenes* (his *parnôs*) as ‘understanding’, taking seriously a cognitive implication of the term which had been dismissed by Greek physicians as early as Hippocrates.<sup>87</sup> These are subtle variations inserted within what is fundamentally a faithful translation or

<sup>85</sup> Something similar can be said about Maimonides’ rendering of the same Galenic source; see below, pp. 279–81.

<sup>86</sup> Where not otherwise specified, I rely on Budge’s translation, which I have cleared of archaisms. I thank Peter Pormann for his help and discussion of individual points.

<sup>87</sup> See Delaini (2018) 88 on this ‘malinteso’ (misunderstanding) of the Syriac author with reference to the diaphragm: ‘[He] points out in fact that some call the diaphragm by this name, while others call

paraphrase of Galen, but they are telling as to the retention of the heart/chest as the focus: the part the ancient physician indicated with *phrenes* receives a new, unquestionably cognitive value as *parnôs*.<sup>88</sup>

In sum, for all its compilatory characteristics and ambiguities, this text preserves traces of an Eastern reception of and syncretism with a ‘canonical’ Western topic (using ‘Eastern’ and ‘Western’ in the somewhat simplified way described above): cognitive disturbance and the disease *phrenitis*. The most interesting feature is not the content itself – the information it preserves is Galenic at its core, as we have seen – but how it arranges and positions that content and engages with it. Although the sources and authorities may have been largely the same for many centuries, the emphasis was on different points and different body parts in different regions (or different genres, or for different audiences). The Syriac book is perhaps best understood as a small but meaningful example of resilience in the face of the hegemony of Greek science on the part of an Eastern and in part much older medical tradition,<sup>89</sup> in whose Babylonian beginnings diseases in many ways similar to *phrenitis* had been observed and described but had generated very different representations and arguments (as can be seen in the evidence offered by Scurlock, although her strong claims of affiliation are flawed in various ways<sup>90</sup>). This local Eastern medical tradition, in many ways independent of the slow but steady developments of Graeco-Roman science in an encephalocentric direction, put more emphasis on the inward parts<sup>91</sup> and on the heart–chest localization of

it “understanding” (*tar itâ*), thus apparently ignoring the double sense in Greek of the term *phrên*, which means “membrane” but also “thought, intelligence” (my translation).

<sup>88</sup> As well as a made-up Greek appellation, *pronoos*/πρόνοος, coined by Budge. Budge’s odd translation of the Syriac transliteration of *phrenes* with the non-existent Syriac word *parnôs* and the faux-Greek term *πρόνοος* is patently misleading; see Schleifer (1927) 225, who recognizes φρένες here.

<sup>89</sup> This is not the place to discuss Greek debts to the riches of Babylonian medical knowledge, which should not be presented in terms of ‘borrowing’ or ‘translation’: see Asper (2015) for a fair discussion.

<sup>90</sup> Scurlock (2004) 27–29. She categorizes several Hippocratic descriptions of chest disease involving the *phrenes* as ‘*phrenitis*’ in order to use them as firm parallels for Mesopotamian pathological descriptions and to argue for a direct derivation of our disease from the Assyrian *setu* (‘heat of the sun, dehydration’) and more generally from the multifarious forms taken by the ‘hand of a ghost’, a Mesopotamian cause for a variety of syndromes. Cf. Geller (2003). On the more general issue of establishing narratives of derivation or affiliation between Eastern and Western histories of science, see Appendix 1; Asper (2015), with 24 n. 20, with a summary of arguments.

<sup>91</sup> Reflecting a more general cultural preference. Cf. the eccentric account of human emotional life found in an Arabic text ‘ascribed to Galen’ discussed by Biesterfeldt and Gutas (1984), which focuses on the ‘malady of love’, a fragmentary bit of evidence surviving in different versions (see 4 n. 22 for the references), in which thoughts and emotions are variously located in the viscera of the torso: ‘A person can be said to be in love in the full sense of the term only if, should his lover leave him, his imagination, thought, memory, heart and liver are preoccupied with the lover, so that he cannot eat or drink because his liver is too busy, nor can he sleep because his brain is too busy imagining (him/her), thinking about (him/her) and remembering (him/her)’.

vital processes and disorders at the expense of the head in its representation of mental life and health.<sup>92</sup> More generally, this tradition did not adopt a localizing view of human health, to which it seemingly preferred a de-centred, compositely organized model of the living body endowed with a greater holistic and metaphysical appeal.<sup>93</sup> As such, it found an ideal textual interlocutor, among those available from Greek science, in the diaphragmatic and organ-based discussion of *phrenitis* offered by Galen in *Loc. Aff.* 5.4.

### *Medieval Medicine in Latin Europe*

The next phase in our reconstruction of the transmission of the disease *phrenitis* and of the history of the questions and themes that accompanied it is an examination of teachings and writings in medieval Europe, especially in its intellectual centres in the Iberic peninsula and the Scuola di Salerno in southern Italy, with their philological and medical activities of Arabic–Latin translation and commentary.<sup>94</sup> Although some ancient medical texts were translated into Latin as early as the sixth century CE, it is with the school of Salerno and the rise of scholarly work in Arabic and Jewish contexts in Spain that activity in this language is stimulated and revived in an important way, especially beginning in the eleventh century and reaching a peak in the twelfth, in parallel with the rise of university-based medical learning.

*Salernitan Medicine and Other Medical Authors* We begin with the texts in the *Collectio Salernitana* collected by De Renzi and others.<sup>95</sup> *Frenesis* is discussed in the third volume, in the *Regulae Urinarum Magistri Mauri* (vol. 3, pp. 32–34 *De frenesi*). The author on urinalogy has assimilated a number of different categories of *phrenitis*, as already noted. In particular, he distinguishes between the ‘true and proper’, *vera*, deriving from accumulation of bile in the anterior ventricle of the brain (*de colera in anteriore*

<sup>92</sup> Mind with an encephalic location is conceived ethically, as the seat of virtue; mental health in the sense of cognition seems to gravitate around the heart instead. See Delaini (2018) 97–8 on this difference posed by Eastern images of the living body.

<sup>93</sup> See Wee (2020); cf. the picture of the reception of medical ideas in late-antique Iran sketched out by Delaini (2018) 81, 88.

<sup>94</sup> A valuable survey is offered by Laharie (1991) 127–29; see 208–10, 219–23 on therapies.

<sup>95</sup> De Renzi (1852–59). On the formats and genres in this collection, see Montero Cartelle (1997–98), (2010).

*cellula capitis ad apostema collecta*), and the *non vera*, deriving from blood, phlegm, black bile, smoke rising upwards (*de sanguine vel flegmate, vel melancholia vel fumositatibus petentibus superiora*) or other humours. The text offers a detailed discussion of the variation in urine colour in each case, as well as of the possible cures. Symptoms are summed up thus: pain in the head, alienation due to the abundance of fumes affecting the brain (*alienatio mentis propter multitudinem fumositatum inficientium cerebrum*), wakefulness, movement of the eyes caused either by madness or by the severe obfuscating vapours which, passing through the eyes, corrode them and force them to move (*motus oculorum vel propter insaniam, vel propter acutas fumositates, que, dum per oculos transeunt, mordicant ipsos et moveri compellunt*) – an interesting double explanation which adds a psychological factor to the received Galenic one – movements of the hands to protect the face, as if in reaction to someone attacking the patient (*manuum frequens motio ad faciem, tamquam si aliqui ab extrinsecis lesionem inferret*), and irrationality. These are all commonplaces, but the assimilation of the ideas into the pragmatic observations of a *Regula urinarum* is worth noting.<sup>96</sup>

Philosophically more striking information is offered in the vocabulary referred to as *Alphita*.<sup>97</sup> Under *fren*, this medical lexicon preserves an intriguing entry (217.41–46 García González):

The term *fren*, or *frenes*, means ‘membrane’; hence the ancients up to the time of Plato used the term *frenes* for what we call today the *diafragma*, and Plato is said to have invented this term *dyafragma*. Thus the two membranes which cover the brain, namely the *pia mater* and the *dura mater*, are called the *frenes*, and hence the *apostema* which occurs in them is called *frenesis*, and (the brain) is called *fren*, *frenis* (*fren, vel frenes, interpretantur pellicula; unde antiqui ante tempus Platonis vocabant frenes, quod nos hodie dicimus diafragma, et dicitur Plato fuisse primus inventor huius nominis dyafragma; inde dicuntur due pellicule quae obvolvunt cerebrum frenes, scilicet pia mater et dura mater; et inde dicitur frenesis apostema factum in eis, et dicitur hic fren, huius frenis*).

García González comments that ‘any membrane which covers an organ was identified as much with the *dyafragma* < Gr. διάφραγμα . . . as with the *pia mater* and *dura mater*’. But he does not comment on the paretymology

<sup>96</sup> P. 33. Cf. the *Regulae Urinarum Mag. Joannis Platearii Salernitani*, vol. 4. 409–12 De Renzi in Coppho’s *Ars medendi*, where the concept of the phrenitic is found again: ‘white and thin urine, green at the edges, signifies *phrenitis*’ (*urina alba et tenuis, cuius circulus est viridis, frenesim significat*) (412).

<sup>97</sup> De Renzi, vol. 3, 1 says that the treatise was already well known in the twelfth century. García González (2005) 47 concludes that the glossary was composed at the beginning of that century; see 46–58 on the origin and date of the work.

the author might be offering,<sup>98</sup> of *dya-* as opposed to *dia-fragma*, in which the prefix is seen to allude to the duality of the meningeal membranes.<sup>99</sup> He also cites a parallel from another lexicon, the *Clavis Sanationis* of Simon of Genoa: ‘*Frenes*, in Greek *dyafragma* (*frenes grece dyfragma (sic)*’ and ‘*Frenitis, frenesis*, actually *rabies*; this is not the name of the disease, but of the symptom itself, for the disease is the apostema that precedes as a result of overheating (*Frenitis, frenesis, ipsa rabies, hoc nomen non est morbi sed ipsius accidentis, nam morbus est apostema quod ex calido antecedens*).’<sup>100</sup> This reference reveals other phenomena in this stage of the history being traced here: the separation of disease from symptom and the creation of a ‘set of symptoms’ designated ‘phrenitic’, which becomes the repository of the rich patrimony of patient observations the tradition preserved.

In line with this creation of a phrenitic ‘semiotic’, in the *Practica Maestri Bartholomaei*<sup>101</sup> several details which recur in our disease are scattered throughout a comprehensive discussion of affections of the head/*caput* (*De doloribus capitis/De dolore capitis qui fit ex sanguine/De dolore capitis ex melancholia*, followed by *De cephalea, De emigranea, De inflammatione cerebri* 372–74). This is offered before any mention of *frenesis*, despite the rich nosological discussion of the disease in the section *De diversitate egritudinum*, demonstrating the creation of a nosological phrenitic-encephalitic ‘type’. That *dolor capitis* is in many details similar to a form of our *frenesis*, even if the standard markers are not emphasized. Instead, it seems to constitute a purified, more general version of it, cleansed of idiosyncrasies, sometimes accompanied by fever, caused by blood or by some humour. Most telling is what follows, where pain in the head is said to be caused by heat or obstruction (*aliquando ex calore, aliquando ex opilatione*), ‘depending on the case’.

After a paragraph on *scotomia*, at 374–77 Bartholomaeus treats the maladies described in *De frenesi, De mania* and *De litargia* as all implicitly localized in the head. (The diseases which follow are organized *ad calcem*.) *Frenesis* is defined thus: ‘a swelling in the brain or in the meninges of the brain in the anterior part of the head, accompanied by acute fever, with the following signs: a quick and thick pulse, strength of the limbs, a rapid convulsion of the face and eyes (*est autem frenesis apostema in cerebro vel in meningis cerebri anterioris partis capitis cum acuta febre, cuius hec sunt signa: pulsus velox et spissus, fortitude membrorum, velox conversio vultus et*

<sup>98</sup> Or, at any rate, on interpreting the plural *phrenes* (as in the two diaphragmatic lobes) as alluding to the *pia mater* and *dura mater*.

<sup>99</sup> García González (2005) 431 *ad loc.* <sup>100</sup> <http://www.simonofgenoa.org/index.php?title=FAQ>

<sup>101</sup> De Renzi, vol. 4, 321–406. From a fifteenth-century manuscript.

*occulorum*)'. It is important to note his concept of swelling, which we have already encountered, and which is a defining feature of the humoral and tumoral explanations of our disease (and others) in medieval medicine. The reference to a 'swelling' or 'tumour' represents a fundamental new development in the way *phrenitis* and the group of diseases to which it belongs are represented. The Greek term *apostēmal* ἀπόστημα, 'tumour, abscess', is not used in Galen for *phrenitis* and is in general not central in earlier medicine;<sup>102</sup> it becomes so in medieval times, when it features in standard definitions of the disease.

After the definition, Bartholomaeus continues with the usual therapeutics. At the same time, some eccentric elements mostly encountered in non-professional late-antique sources resurface,<sup>103</sup> notably the application of animal parts to the top of the shaved head: a sheep's lung (*pulmo pecorinum*), the warm flesh of a cockerel (*caro galli calida*), young deer (*capriole calida*) or a kitten that has been cut open and placed on top. Practical information about the ideal location and activity for patients in everyday life is also offered: a dark bedroom (*in lecto obscure iaceant*), a peaceful setting free of loud chattering, and no excessive variation in the images to which the patient is exposed (*non utantur publicis hominibus confabulationibus, nec voces varias audient, nec diversa videant*).

Although this is the chapter dedicated to *frenesis*, the author attributes phrenitic details to a variety of other diseases apart from the general section on *dolor capitis*. At 339–421, the various paragraphs devoted to fevers accommodate many elements which compare well with the idea of *frenesis* in this period. This is particularly true of the discussion of summer fevers and of quartan fever caused by bile.<sup>104</sup> There is a fever *ad insomnietatem* (346) and later, at 359, also a separate 'fever caused by red bile (*febrium ex colera rubea*)' accompanied, like *phrenitis*, by 'a quick, thick, hard pulse (*pulsus velox et spissus et durus*)'. Types of *apostema* are discussed separately, at 367 (*de generibus apostematum*), but with no specific mention of the head or brain as *locus affectus*. These duplications in pathological categories pose no problem for our purposes: this medicine does not need to comply with the requirements of 'economy' and cogency of modern medical manuals and operative diagnostics. But it is instructive that the 'building blocks' which constitute the disease *phrenitis* in the medieval period begin to emerge separately from one another, as elements in a semiotic with its

<sup>102</sup> Although we find it already as early as the Hippocratic *Aph.* 7.36 (4.586 L.).

<sup>103</sup> See Chapter 6, pp. 220–21.

<sup>104</sup> For example, *de dieta febrium in estate nascentium* (341), *de quartana notha que fit ex collera* (344).

own joints and pieces: fever, brain, apostema, humours, vapours, summer seasonality, mental aspects, the head.

Along similar lines, in his *Egritudines totius corporis* (vol. 4, 415–505 De Renzi, also organized *a capite ad calcem*, at 469–70) Copho discusses the ‘cephalic disease’ (*cephalico*), which appears to be his ailment that comes closest to *phrenitis*. Here too we see *frenesis* begin both to expand into a general category of brain inflammation and to fragment into the variety of its symptomatic units. The *cephalicum* disease has various natures, Copho says, physiological but also psychological, such as anger (*ira*), but he will concentrate on the type caused by bile (‘We shall speak of the one which is caused by humours’, *dicamus ad presens de illa que fit de humoribus*, 469). He then discusses the nature of the brain in Galen as exposed to the action of different humours in different parts: the front to blood, the back to phlegm, the right side to bile, and the left to *melancholia*. The cause can be *privata* (*idia*, primary) or *remota* (secondary), and the manifestations can vary depending on all these points. At 470, Copho mentions the possibility of the disease having an origin even in the womb, for female patients; this is the apostema of the womb encountered elsewhere, as in stomach and liver variants.

A fundamental text for teaching in the medical school of Salerno was the *Pantegni*,<sup>105</sup> the main source of medical knowledge in the twelfth and thirteenth centuries, surpassed in importance, from the second half of the thirteenth century onwards, only by Avicenna’s *Canon*. The *Pantegni* opens with an initial theoretical section (*theorice*). At Book IX.iv and v of this section, it takes up the topics of ‘hot *phrenitis*’ (*frenesi calida*) and ‘cold *phrenitis*’ and lethargy (*et [frenesi] frigida, . . . lethargia*).<sup>106</sup> The former is defined as ‘either coming from a hot complexion suffered by the brain or its membranes; or deriving from a hot swelling/tumour (*apostema*) in the membranes of the brain itself or in the brain; or from an abundance of bile in the veins (*in venis*) of the brain’. Different degrees of pain, *dolor*, are observed, depending on the kind of *frenesis*. A full set of possible physiologies is thus indicated, all located in the brain: swelling, heating and humoral overgorging in the brain’s vessels. The idea of tumour or swelling

<sup>105</sup> The *Pantegni* was a manual adapted from Arabic into Latin by Constantinus Africanus in the late eleventh century, and circulated widely (‘widely copied in the Islamic world (and . . . translated into Hebrew and Urdu)’; see Jacquart and Burnett, 1994, vii). It consists of two parts, one theoretical and one practical, reflecting a similar division in its source, the *Complete book of the medical art* (*al-Kitāb al-Kāmil fī l-Šinā‘ah al-Ṭibbiyya*) by the tenth-century Persian (but Islamic) author ‘Alī Ibn al-‘Abbās al-Majūsī (Haly Abbas). Cf. Treneary and Horden (2017) 67 on this text.

<sup>106</sup> On lethargy in medieval sources, see also Laharie (1991) 134–35.



is also confirmed as central: one of the earliest central pieces of Medieval medical education, the *Articella* (which contained the translation of Galen's *De Arte* known as the *Microtegni* or *Tegni*, and was used as a textbook and reference manual from the thirteenth to as late as the sixteenth century) contains in its so-called *Isagoge*<sup>107</sup> an illuminating discussion *de modis apostematum*, 'about kinds of swelling/tumours', that clarifies the topic in detail.<sup>108</sup>

Regarding signs of *phrenitis*, the *Pantegni* mentions continuous fever and 'strong heat to the touch (*calor vero fortis in tactu*)', especially on the head and face compared to the rest of the body (*tactus capitis et faciei est calidior in tactu qual totius corporis*). Patients experience mental alienation and a state of restlessness (*alienatio habetur mentis vigilie*), and sometimes 'sleep accompanied by hallucination/dreaming (*somnus cum imaginatione*)'. Phrenitics 'are startled, with violent movements and screaming (*fucitantur cum fortitudine et clamore*)'; their tongue becomes thick and black, and 'they pick fleeces from their clothes due to the corruption of their imagination (*accipit de vestimentis fiosculos propter imaginationis corruptionem*)'; 'sometimes their eyes lacrimate, and they present a discharge, occasionally of the dry kind (*eorum oculi aliquando lacrymant et lippi sunt aliquando sicci*)'. When the illness arises through a swelling/*apostema* caused by blood, all the symptoms appear, including laughter and sleepiness, red eyes and alienation; the heating is severe; and the patient's face is not particularly red, but is dry due to citrinity. Those who suffer from the bilious swelling/*apostema* present all the above-mentioned symptoms but accompanied by 'anger, quarrelsomeness/tendency to pick fights and perfidy (*cum ira contentione et perfidia*)'. If the swelling/*apostema* is caused by black bile, on the other hand, the same symptoms are found, but 'along with vanity and a perpetual state of lightness, alienation and

<sup>107</sup> Literally, 'Introduction'. The collection formed around the synthetic exposition of classical Greek medicine written in Baghdad by Hunayn bin Ishāq, known in the West by the Latinized name Ioannitius. His compilation was based on Galen's *Ars medica*; it thus became known in Europe as *Isagoge Ioannitii ad Tegni Galieni* (Hunayn's *Introduction to the Art of Galen*). In medieval times several versions of this anthology circulated among medical students in manuscript form, typically including Galen's *Tegni* (*Ars Medica*), Hippocrates' *Aphorisms* and *Prognostics* with Galen's commentaries and *Regimen acutorum*, and the book *De Urinis* by Theophilus Protospatharius. Between 1476 and 1534 CE, printed editions of this *Articella* were also published in several European cities, making it one of the fundamental references of medieval and early Renaissance medical education and practice.

<sup>108</sup> Four basic kinds of swelling, with relevant signs, are described: one caused by blood, called *flegmon* (*ex sanguine et dicuntur flegmones*); one caused by red bile, called *herisipile* (*ex colera rubea et dicuntur herisipile*); one from coagulated phlegm, called *undimia* or *cimia* (*ex flegmate quod est coagulatum et dicuntur undimie vel cimie*); and one from black bile, called *cancer flegmonum* (*ex colera nigra et dicuntur cancri flegmonum*).

excessive fear, suspicion and wailing (*cum vanitate et levatione assidua alienatione nimia timore suspicionem et plorationem*).

Constantinus mentions the pulse as well, along lines by now familiar to us. He then moves on to the chest version of the disease, devoting particular attention to it:

There is also another *frenesis* which is born in the brain from the swelling/*apostema* of the diaphragm (*nascens in cerebro ex apostemate diaphragmatis*) because of the link with the nerve<sup>109</sup> which descends from the brain (*propter colligantiam nervi ex cerebro discendentis*). This *frenesis* has all the above-mentioned signs; in this case, however, they are not as severe. Fever is more serious around the whole body; moreover, heating arises due to the vicinity of the affected place to the heart,

and the *hypochondria* are heated as a consequence. Constantinus elaborates significantly on this expansion towards the chest and the lower torso. In the final paragraph, we read of

another kind of *frenesis* caused by heating of the liver in the diaphragm rising to the brain and its membranes because of their interconnections (*ex calore epatis in diaphragmate ad cerebrum et eius pelliculas ascendentem propter colligantias eorum*). A form of alienation also results from the powerful heating when the smoke caused by fever rises, and the head is damaged as a consequence.<sup>110</sup>

Noteworthy here, in comparison with the Graeco-Roman sources being elaborated, is the greater inclusion of psychological types, moralized qualities and the hydraulics of humoral overgorging.

If the theoretical (*theorice*) part of the *Pantegni* articulates fine psychological and anatomical distinctions within *phrenitis*, the practical part (*practice*) perhaps reflects a more composite provenience: while the first ten books appear to be a fairly faithful version of Constantine's Persian source,<sup>111</sup> the *practice* suggests the assimilation and incorporation of a variety of other material. For *frenesis*, consider 655, where Book 5 *de passionibus membrorum interiorum* begins. The sections *de frenesi* and *de frigida frenesi* are found at vii and viii, where therapy is mostly described

<sup>109</sup> Here, as before, I translate *nervus* with 'nerve', despite some doubt about the precise anatomical identification.

<sup>110</sup> Cf. William of Conches (eleventh century CE), *Dragmaticon Philosophiae* (6.17.7): 'For this reason nature has created in that part of the body visible openings, lest the smoke remaining there might cause *phrenesis*; and it is possible for you to observe this in the top of the head of people a bit after they have died (*unde natura in illa parte patentiora creat foramina, ne fumus ibi remanens phrenesim generet; et hoc in testa capitis diu mortuorum potes perpendere*).'

<sup>111</sup> See above n. 105.

along known lines: phlebotomy, and clysters in case of stypsis. Here too, the use of animal parts is mentioned as a therapeutic measure: Constantine recommends tying the organs of a recently slaughtered sheep to the patient's head (*pulmo recens pecoris capiti alligatus valet*) and stimulating his or her sense of smell with aromatic substances, along with the usual caution about wine, and prescriptions for the use of vinegar in various preparations. These details offer a glimpse of the enduring subterranean flux of ancient therapeutics, which remained at the periphery of professional medicine but were never completely eliminated. Constantine also discusses the cold variant, *de frigida frenesi*; here too, at the end, the stimulant use of animal organs is mentioned.

Another key text within the *Pantegni* is the *Viaticum*, a practical treatise of travel medicine similarly popular in its time, although less ambitious in its intellectual scope. In the first book, Constantine describes a number of therapeutic measures, starting from the external portions of the head with affections of the hair and skin (e.g. dandruff). At 754 (I.18) some indications *de frenesi* are found. The disease is again qualified as a hot swelling or tumour in the meninges and sometimes in the brain matter (*suba*), 'which is the worst and most damaging case (*quod pessimum est et molestissimum*)'. It is said to arise perhaps from two causes, one centred in the brain and involving the ascent of burning red bile (*ex incensione cholerei rubri cerebrum ascendentis*), the other involving blood and, intriguingly, the heart and the blood it contains (*de sanguis ebullitione in corde*).

In the *Viaticum*, dire symptoms (*terribilia accidentia*) are listed more synthetically than in the texts by Constantinus already discussed: 'excessive thirst, dryness of the mouth, blackness of the tongue, a sense of unease, disturbance, anxiety, excessive despondency (*sitim nimiam, oris siccitatem, nigredinem lingue, asperitatem, molestationem, angustiam, nimiam defectio-nem*)', as well as sudden changes in external appearance, in the direction of redness or icterus, depending on the humoral cause. Constantinus also points out that *frenesis* can derive from another illness (*alia passione nascitur*) involving the diaphragm, stomach or womb via a sympathetic connection (*vel est ex diaphragmate apostemate; vel ex stomachi passione; sive ex matrice; et quorum colligantia per nervos cerebrum patitur*). There is also an analogy and possible association with *mania* and melancholy, perpetuating a conceptualizing 'psychiatric' move alongside the powerfully anatomical account. The therapeutic section addresses phlebotomy, dietetic recommendations and in some cases clysters.

Among the general medical compendia, one of the most influential was the *Compendium medicinae* by Gilbertus Anglicus (c. 1250s CE), possibly

‘the first great Latin survey of medical knowledge to have been composed after the arrival of Greek and Arabic texts in western Europe’.<sup>112</sup> At xxvii, in the section *de medicatione frenesis* and *de frenesi* Gilbertus defines the disease as an ‘inflamed *apostema* born in the anterior portion of the brain or its membranes (*apostema ignitum in anteriori parte cerebri vel eius pelliculis natum*)’. He also discusses the Greek name: ‘It acquired this name from the *frenes* (*a frenibus*), which surround the brain (*quod cerebrum circumvolitant*).’ This slight variation – from the *frenes* as any membranous part in the body to their being identified precisely with the meninges – is extremely significant, because it shows that the ‘membrane-like character’ of the part has become at least as important as its location. In the archaic world, the *phrenes* were the chest, lungs and heart, that is, a general area of the body. Then they became the diaphragm; then, in parallel with this, the soul and mind, and thus the brain as seat of soul and mind; then any membrane (diaphragm, spinal, meninges); and here specifically the membranes of the brain. Closing a circle of functional transmigration, the mental faculties have thus moved from chest to head via the vehicle of this histological item – no matter how inert, secondary and irrelevant its actual role in the body – or perhaps precisely because of this neutral, flexible quality of the Greek *phrenes*.

Gilbertus also distinguishes among different humoral causes and different types of *frenitis*: *vera* and *non vera*, and occurring in the body of the brain or in its membranes. As for symptoms, he mentions the common derangement, wakefulness, anger and fury, restlessness, disorderly tossing of oneself around, and being suddenly startled (*alienatio; vigilie; ira et furor; inquietudo iacendi; inordinatio et proiectio, et erectio subita*). But he points out that there are also variations depending on the causes. He also speaks of the pulse, the urine ‘thin and white (*tenuis et alba*)’, and the waxy discharge from the eyes, in line with other authors of the period. A whole chapter is devoted to the cause of the blanching of the urine (218–19), with detailed specification of the consequences of heating in various parts of the body, while in the course of offering a general account of the physiology of *phrenitis*, he elaborates much more than others on the pathology, anatomy and histology of the brain. Consider folio 101, where Gilbertus explains why moisture accumulates most in this body part:

This happens for two reasons. One, because of the great number of veins which go to the head, through which there is a rheumatism of the inferior

<sup>112</sup> And one which is widely copied and translated in local languages in the following centuries: McVaugh (2010) 295.

part, as is clear in the anatomy (*per quas reumatismus fit inferius, ut in anatomia apparet*). The other cause is that the brain is in a state of continuous motion, and (its matter) is spongy (*spongiosus*). Hence, like a vacuum cup (*velut ventosa*), it will attract the humours which are mostly subject to attraction, and the hotter the brain becomes, the stronger will be its power of attraction (*virtus attractiva*).

This argument is unique in the medieval material I have seen, and curiously evokes both Asclepiades' corpuscular theory of *phrenitis*,<sup>113</sup> where the inflamed, overheated part creates a void to which the particles are swiftly attracted, almost 'sucked', causing a clogging of the passages through which they travel, and the Hippocratic idea that the head might work as a 'cupping instrument'.<sup>114</sup> In this way, Gilbertus offers one additional anatomo-pathological element to the itinerary of the disease on its way to becoming an meningo-encephalitis, by focusing on the blood vessels. It is thus no coincidence that he mentions Aristotle earlier (218, folio 101)<sup>115</sup> or that he refers to anatomy and the positioning of the veins in the head as especially important, while also mentioning the liver as a possible locus of co-affection for *phrenitis*. The process of 'suction' described here, moreover, recalling Asclepiades, is another modality of explanation that emerges to rival the principle of humoral and 'gaseous' movement through the body.

Also particular to this discussion is the importance of food as a moistening and heating agent, as well as the role played by pain, *dolor*, in exacerbating the pathological movement of humours and the illness that follows (219, folio 101). At 221 (folio 102) Gilbertus offers some indications regarding therapy, involving massage, applications to the head and dietetics; we also read that the head should be shaved for the applications. The application of animal viscera found elsewhere is recommended here as well: 'Suckling kitten/cubs should be cut open in the middle through their back, or a chicken or the lung of a ram, and after the intestines have been extracted, they should be applied on the forehead while still warm (*catuli findantur lactantes per medium ex parte dorsi vel pulli vel pulmo arietinus, abiectis igitur intestinis applicentur fronti calidi*).'<sup>116</sup> Phlebotomy is discussed as

<sup>113</sup> See Chapter 3.

<sup>114</sup> Cf. the Hippocratic *De Morbis IV* 35 (87.27–28 Joly = 7.548 L. 'The head, being hollow (*koilē eousa*) and positioned above like a cupping instrument (*hōsper sikyē*), draws up (*helkei*) the phlegm'), on which see Wright (2022) 70–71.

<sup>115</sup> Aristotle is a very important presence in Gilbertus's work; see McVaugh (2010), esp. 297–301 on his intellectual profile.

well. Here too, a change into lethargy is contemplated (222, folio 103) and said to be lethal.

### *University Medicine*

In the Iberic context, the translations produced in the Toletan tradition include a fundamental one in this period: the eleventh-century *Canon* (*al-Qānūn*) by the *Ibn Sīnā* already mentioned, Latinized as Avicenna (980–1037 CE). This work was translated from Arabic into Latin by Gerardo da Cremona in the twelfth century and after that became a standard reference work in university teaching.<sup>116</sup> The doctrine put forward in the *Canon* was fundamentally humoral and accordingly identified madness with an imbalance of humours, or with a localized alteration in the imaginative faculty (at the front of the brain), in the rationality (in the central brain) or in the memory (at the back of the brain). *Phrenitis* is recognized as one of three key kinds of madness, together with *mania* and *melancholia*, reflecting the traditional tripartition first observed in Celsus.<sup>117</sup>

Avicenna plays a special role in this story due to the extraordinary importance and wide dissemination of his *Canon* in Europe for centuries, especially after its translation into Latin.<sup>118</sup> I accordingly offer a detailed account of the section devoted to *phrenitis*, named *karabitus* (from the transliteration into Latin of the Arabic *f-r-ā-n-ī-t-s/qarānītīs*,<sup>119</sup> which in turn transliterates the Greek *phrenitis/φρενίτις*), by summarizing the Latin translation in dialogue with Dols's faithful summary of the same text from the Arabic original; I thus quote the Latin and occasionally give the corresponding Arabic term based on Dols.<sup>120</sup> This text deserves such detailed consideration because of its massive importance in shaping Western medicine and psychiatry.<sup>121</sup>

<sup>116</sup> On Avicenna, see Pormann (2013); Chandelier (2018). <sup>117</sup> See Chapter 3.

<sup>118</sup> Cf. Trener and Horden (2017) 66. See also Dols (1992) 74–75, with 74–77 on Avicenna and 86–87 on the Greek sources for his third Book, on mental disorders, especially Paul of Aegina; Carpentieri *et al.* (2018) on the comparison between the Arabic and Latin vis-à-vis *phrenitis*.

<sup>119</sup> The variations in the Arabic transliteration of φρενίτις from *qarānītīs* to *f-r-ā-n-ī-t-s* (perhaps pronounced *farānītīs*) are due to the easy confusion in the Arabic spelling between f-r (فـر) and q-r (قـر); Gerardo here appears to have failed to recognize the Greek *phrenitis* behind the Arabic label and mistaken q-r for f-r, hence the *qarānītīs/karabitus* label. I thank Simon Swain for these clarifications. On *qarānītīs* as a mistake deriving from a corrupt manuscript that in turn engendered *karabitus* in Gerard's version, see Carpentieri *et al.* (2018) 296 n. 14, 306.

<sup>120</sup> The English translation from the Arabic by Adeli Sardo (1999) is of only limited reliability here, at least as far as terminological subtleties are concerned.

<sup>121</sup> Dols (1992) 74–75 and 76–77. I have used the Latin text of Gerard's translation (*Liber Canonis Totius Medicinæ*, reprinted *Medicinæ Historia*, 1971) printed in Venice in 1527. Translations are my own.

In the third part of the *Canon*, devoted to ‘diseases of the bodily parts’, Chapters 3–5 deal with inflammations of the brain. *Karabitus* is found in Chapter 3, with discussion of symptoms and treatments. The disease is placed first, at the very opening of the chapter on swelling/abscess of the head, *de apostemate capitis*. First a definition is offered:

*karabitus* is called a hot swelling/abscess (*apostema*) in the membranes of the brain, the thin and the thick one [i.e. the *dura mater* and the *pia mater*], without involving the body of the brain itself, although an abscess to it can sometimes also occur (*dicitur karabitus apostema calidus in velamine cerebri subtili et grosso, absque corpore: quamvis corpori ipsius quandoque accidat apostema*).

Here Avicenna disagrees with the opinion expressed by others, that ‘what is soft like brain, or hard like bone, cannot expand, and what cannot expand, cannot have an abscess’: the brain too, in his opinion, can suffer *apostema*.<sup>122</sup> He offers a terminological discussion, already commented on above: the term *sirsām* is properly applied to the disease suffered primarily by the meninges, and sometimes by the brain as a whole.

As for pathology, Avicenna believes that most patients (*plurimi*) die due to an impediment ‘in their breathing capacities (*propter impedimentum in spiritu*, Arabic: *nafs*)’.<sup>123</sup> He also proposes a regional account of the affection of the brain,<sup>124</sup> in which ‘the abscess has different locations according to different parts of the brain (*apostema hoc habet loca diversa secundum partes cerebri diversas*)’, and distinguishes two cases: that of two co-suffering parts and involvement of the brain as a whole. Here Avicenna is elaborating on Galen’s nosological tripartition at *Loc. Aff.* IV, 2 (8.226–27 K.): there are two simple kinds of *phrenitis* (with lesions of the senses and with damage to judgement, respectively) and a third which is a combination of them. Avicenna adds another kind, which involves memory, and also mentions carphology as a form of hallucination due to a lesion in the anterior portion of the brain.<sup>125</sup> When the central region is damaged, impairment in reasoning follows involving delirium and speech impediments; when the posterior portion is struck, patients forget what they are looking for or

<sup>122</sup> See Jacquart (1992) 182 on this medical controversy, the objection being that, ‘because of its softness and viscosity, the brain cannot undergo any swelling or tumefaction’.

<sup>123</sup> Dols (1992) 75. See also Carpentieri *et al.* (2018) 308.

<sup>124</sup> On the history of this subdivision, see Siraisi (1987) 211–12.

<sup>125</sup> Jacquart (1992) 190: crocydism and seeing ghosts go together (Aanun III 1.3.2. ed. Bulaq p. 46, Jacquart 1992, 190 n. 31). On the subdivision of the so-called ‘internal senses’ in the medieval philosophical tradition (Latin, Arabic and Hebrew), see Wolfson (1935). On Galen’s discussions of damage to the different parts of the brain and *phrenitis*, see above pp. 175–76.

what they have just asked; when all parts are involved, all these signs appear together. Avicenna thus elaborates considerably on Galen and creates a theory of the ‘cerebral localization of the internal senses’ endowed with more complexity than those of his predecessors.<sup>126</sup>

For Avicenna, the cause of *phrenitis* (*eius . . . principium*) is of course humoral: blood, pure yellow bile, pure red bile or bile burnt black, which is the most dangerous (*sanguis, aut citrina cholera pura, aut rubea pura, aut adusta trahens ad nigredinem, et est vehementer malum*). Relief is offered by purging, which takes various forms: sweating (*sudore*), epistaxis (*fluxu sanguinis ex naribus*) or venesection on the head can help resolve the condition, as can opening the cranium to allow the congestion to be released. Later on, bleeding through haemorrhoids is also said to be helpful (*et karabitus quidem multotiens resolvitur per hemorrhoides cum fluunt*<sup>127</sup>).

As for the relationship between *karabitus* and other diseases, Avicenna mentions the possibility of a change from pneumonia (*permutatio ex peripleumonia*) or, often, from ‘false’ to ‘real’ *karabitus* (*non verum in verum*). Some indicators can predict how hopeful a case is: ‘a reasoning disposition which combines laughing and crying together (*permistio rationis composita ex fletu et risu*)’ is dangerous, while ‘continuous laughter (*risus aroonati*<sup>128</sup>)’ can be a hopeful sign. Some doctors are said to claim that there can be an illness without fever similar to *phrenitis*; in regard to this, Avicenna describes a severe disease<sup>129</sup> characterized by great anxiety (*fortis inquietudo*), yawning (*oscitatio*), restlessness – ‘s/he cannot stay still, and at times attempts to climb the walls by jumping (*habens eam non tolerat quietem, et fortasse saliendo ascendit parietes*)’ – strong laughter, suffocation and thirst. Such patients cannot drink without suffocating (‘when s/he drinks water, s/he chokes on it and spits it out’, *cum bibit aquam strangulatur ea et expellit ipsam*). ‘The day (when this final symptom occurs?) is fatal, according to opinion’; should the disease last for four days, no one escapes. At this point, ‘it happens that the patients’ faces turn dark, as do their tongues; their eyes are frozen/fixed (*accidit ut ipsorum facies nigrescant: et lingue: et sint ipsorum oculi congelati*)’; and their behaviour expresses fear and weakness (‘the disposition of those in fear’,

<sup>126</sup> Jacquart (1992) 190–91.

<sup>127</sup> On the traditional idea of a beneficial effect of haemorrhoids, see Thumiger (2017) 104 n. 67.

<sup>128</sup> On this term for ‘continuous laughter’, see Carpentieri *et al.* (2018) 310, 319.

<sup>129</sup> Compared to rabies by Dols (1992) 75, for whom Avicenna ‘gives a general description of what appears to be rabies’ – a strange claim, since the signs are quite in line with ancient descriptions of mental disorders in general, fevers and *phrenitis* in particular. Rabies and *frenesis* are considered in parallel in the entry *fren/frenes* in *Alphita* (see above, pp. 252–53).



*dispositiones timentium*). Death follows, as ‘their movements slacken (*ipsorum lenientur motus*)’, ‘their strength recedes, and their pulse weakens (*cadunt eorum virtutes et pulsus*)’. Death often occurs through suffocation (*cum strangulatione*) and is spasmodic: ‘You can see the patients running about, and then suddenly collapse and die (*vides eos currentes, deinde vides post illud eos statim cadere et mori*)’. In this version of the disease, without fever, as noted, a sympathetic reaction takes place between the brain and another ‘organ of higher functions’, such as those of respiration. This feverless variant is a syndrome which also accommodates the chest manifestations that belong to *phrenitis*, suggesting a coaffection of brain, throat and chest.

Avicenna then moves on in chapter 2 to describe the signs common to all kinds of true *karabitus* (*signa autem communia speciebus ipsius veris*). These are intermittent alienation (*alienatio*); an ‘aversion to talking or a lack of any desire to do so’ (*abominatio loquere, et pigritia ab ea*); intellectual confusion (*permistio intellectus*); and obsessively inspecting one’s fingertips (*inquisitio extremitatum*). Corporeally, ‘the extremities are cold, and there is agitation (*extremorum frigus, et agitatio*)’ and a ‘tension on the surface of the bones of the chest (*extensio ossium pectoris ad superiora multa*)’, perhaps what ancient sources called ‘tension of the *hypochondrium*’;<sup>130</sup> tremor; troubled sleep (*somnus inquietus*), from which patients emerge abruptly; and they cry out both when they are sleeping and when they are awake (*clamant, et quandoque dormiunt, et quandoque vigilant*). Patients are prey to nightmares, visions and voices. ‘Their sleep is most troubled; it is disturbed by hallucinations and by awful, unspeakable dreams, with spasmodic movements and mixed with shouting’ (*commotus cum fantasiis, et somniis corruptis terribilibus, et eius excitatio est permista cum vocibus*). They are also immoderate and uncharacteristically ashamed, bold or angry (*verecundia, et audacia, et ira ultra consuetudine*). They ‘avoid the sunlight and shrink away from it (*abhorrent radios, et avertunt se ab ipsis*)’, ‘move their tongues about frantically and twist them (*agitant lingue eorum vehementer, et stringunt eas*)’, and their voice often falters (*multotiens abscinditur eorum vox*). They yearn for water, but drink only a bit (*et desiderant aquas, et bibent ex ea parum*). Their extremities are cold (*infrigidantur eorum extremitates*); their urine tends to be thin and clear (*ipsorum autem urine sunt declinante ad tenuitatem et subtilitatem*); and their pulse is hard

<sup>130</sup> Sardo’s translation from the Arabic offers ‘the head of his ribs near the abdomen is stretched a great deal upward’ (91).

'because of the nervous nature of the swelling in a hard part (*propter essentiam apostematis in membro nervosam duro*)' and spastic.

The preceding signs are psychological: 'forgetfulness of the context surrounding' the patient (*oblivio rei propinque*), 'sadness for no reason (*tristitia sine causa*)', 'bad dreams (*somnia mala*)', and considerable affection of the head (which is called *soda*), 'oppression and bloating (*gravitas et repletio*)'. In previous stages, 'a yellow complexion, a transfixed state of wakefulness and troubled sleep (*citrinitas faciei, et vigilie proluxe, et somnus inquietus*)' are noted. The upsurge of bile towards the brain causes exacerbation, as the toxic humour revolves through the veins and drenches the brain matter, causing a sensation of pain which begins in the back of the head, where the neck joins the head; dry eyes; and lacrimation from a single eye. Often 'these patients' veins are a vivid red (*veni ipsorum forti afficiantur rubedine*), and 'sometimes their nostrils bleed (*distillationes sanguinis ex naribus*)'. Their eyes often itch (*plerumque fricant oculos suos*), and 'their body tends to a maximum of relaxation, in most of the body with the exception of their hands (*declinant ad quietem et requiem in maiori parte corporis nisi in manibus*)'.

This is the notorious crocydism, which Avicenna joins other authorities in describing: those who suffer from *karabitus* grope/search the air with their fingers or pick at their hair. 'This happens mostly when their eyes are shut, sometimes accompanied by spasmodic movements of the pupils and moaning (*fit illud plurimum cum clausione oculorum. Et quandoquam fit cum pupillatione et querela*)'. The patients become lazy about speaking (*pigri fiunt in loquendo*) and do so only weakly, and can run out of control or lose awareness of their physiological functions, such as passing urine or the sense of pain, so that they do not react to touch ('They are unable to say if they feel pain in one of their limbs, and if someone touches them suddenly in one of the sore limbs, s/he does not realize it', *obliscunt doloris, si est in membris ipsorum: immo si aliquis de membris ipsorum doloris impetuose tangit, non percipiunt ipsum*). For Avicenna, this phenomenon has to do with the localization of the abscess in the frontal part of the head (*in parte anteriore*), which affects the imagination: 'Patients begin to pick hair and flocks from their clothes, or to try to remove flecks of straw or the like from walls, and they imagine fantastic objects they do not find (*incipient colligere villos ex vestibus et paleas et que sunt similia illis e parietibus; et imaginant aliquas fantasias que non inveniunt*)'.

Later Avicenna also describes a set of symptoms that precede 'true' *sirsen* (folio 144, col. 2, end).<sup>131</sup> Intriguingly, these strike the chest: they originate

<sup>131</sup> See pp. 170, 251, 264 on this.

‘in the diaphragm and in the musculature of the chest (*ex partibus velaminis distinguentis, et lacertorum pectoris*)’ and resemble the signs of *birsen* and *pleurisis*: ‘a piercing pain in the side when inhaling, asthmatic breathing, a thumping pulse, and an incessant dry cough, followed by large quantities of sputum once the part is abundantly moistened (*dolor pungitius in latere apud anhelitus: et strictura anhelitus, et pulsus ferrinus, et tussis plurima sicca, deinde humectatur quam plurimum, et expuit*)’. There is fever, and the heat tends towards the chest, causing ‘tension above the chest bone (*extensio ossium pectoris ad superiora*)’; there is spasm as well. In all these matters, Avicenna makes nuanced distinctions between *sirsen* (the Latinization of *sirsām*) *vera, non vera, manifesta, birsen* (the Latinization of *barsām*) and *karabitus*. These cannot be summarized or quoted in full, but include lacrimation from the eyes, which materializes the hallucinations these patients experience (‘their eyes exude tears, and a dense residue’, *distillant oculi eius, et lippitudinem*). What matters most is the nosological stemma he is drawing, the multiple aetiologies and manifestations alongside the double localization, and the regional subdivisions within the inflammation of the brain.

Avicenna’s account also includes ‘sketches’ of such patients’ character and physiognomy. With pure red bile (*ex cholera rubea pura*), for example,

their character shows a certain rapacity and a melancholic prowess and boldness in discussion, almost as in those who want to pick a fight, and their noses become sharper, as do their extremities; and there is a strong tension upwards in their foreheads (*ingreditur in mores eorum rapacitas, et melancholie proprietates et audacia in disceptando, et est quasi in forma eius qui vult litigare, et attenuantur nares eorum, et proprie ipsarum extremitates: et accidit eis in frontibus eius attractio fortis ad superiora*).

With burnt bile (*ex cholera adusta*) there are ‘signs common to daemonic possession and quarrelsomeness, accompanied by deeper respiration and groping with the hands (*signa ut quod communitas accidentium accidit cum demonio, et rixa; et spiritus magnificatur; et magnificatur inquisitio*)’. ‘Their eyes are troubled, and the cause is *sibare* – indeed, the condition is almost equal to *sibare* proper (*et sunt oculi eorum perturbati, et eius causa est sibare, et est quasi ipsa*)’.

What *sibare* is, is explained in a discussion at the end of the section (*de sibare*). The Arabic name indicates daemonic possession that comes with a bilious, hot *sirsen* (*dicitur sibare demonium superfluum, accidens cum sirsen calido cholericis*) whose signs are a combination of those we have seen already, including alienation and confused reasoning. When *sibare*

appears, the signs of sleep disturbance and insomnia follow shortly thereafter: agitation, hyperventilation and forgetfulness; inconsequential responses; dull, red eyes. A sensation spreads to the back of the head; there is pain caused by the vapours and involuntary weeping. With fever, a parched, dried tongue and then an inability to speak appear. The patient should be kept moist, and 'it is necessary to restrain the patient by binding his limbs' (50).<sup>132</sup>

In terms of therapy, in chapter 3 Avicenna offers a compendium of the known pharmacological remedies, but also other bodily interventions and soothing measures. First he mentions 'phlebotomy of the capital region' (*flebotomia ex cephalica*) aimed at opening an outlet for the humours. He specifies the various cautions to be applied when phlebotomizing the forehead or the hands, difficult operations which might produce conflict with the patient. Massage with rose oil and vinegar, the *oxyrrhodinum* mentioned by Greek doctors, and other cooling treatments are mentioned; various applications with specific herbs are also suggested (e.g. *emplastrum ex foliis senticis*). The suggestions regarding the ideal environment for the ill found in Celsus, Aretaeus and Alexander of Tralles are mentioned by Avicenna as well: a quiet house, clean air, no images or decorations which might provoke the imagination or damage the membranes of the brain.<sup>133</sup> The fragrance of 'cooling flowers' is beneficial,<sup>134</sup> as is the company of 'friends, especially close and sympathetic ones, but also people before whom the patient might feel ashamed (*amicos suos prudentes sibi caros, et misericordes eius: et ex quo verecundetur*)', since their presence invites calm. Sleep should be induced through means such as opium, poppy syrup and other applications. Clysters can also serve to draw matter downward by purging, as can foot massages with hot water, as well as binding, constraining and cupping. Various nutriments are recommended: oxymel, cucurbita, herbs, grains, fruits considered cooling, or restorative items such as goat or human milk. Embrocations are also suggested. Tying

<sup>132</sup> The name *sabari* suggests an association with *sabara*, 'to bind, fetter, shackle', according to Dols (1992) 94.

<sup>133</sup> 'And let him rest in a dwelling of mild temperature, with pure air, and without any picture or figure (to be seen). For by himself he is keen to indulge in imagining (pictures and forms), and this is one of the causes damaging his brain, and the membranes of the brain' (*et fac eum quiescere in domo temperata in aere puro in quo non sunt picture neque forme. Nam ipse diligit intueri imaginatines earum, et illud est ex eis que ledunt cerebrum eius, et velamina ipsius cerebri*). On these soothing measures, see Dols (1992) 158 n. 139, tracing them to Celsus and Aretaeus. Key testimony on *phrenitis* in particular is that of Alexander of Tralles, who unlike Galen offers a full account of various therapeutic measures.

<sup>134</sup> Such as *nenufar* (water lily), *viola*, *et rosa*, *et canfora*.

the patient up can be helpful at times. Avoiding certain meteorological extremes is also advised; these include ‘open air and malignant hot winds, as well as the heat, the days of the Dog (the summer) and the sun, in order to avoid relapses (*ab aeribus, et ventis malis, et calidis, et canicularibus diebus et sole ut non incurrat recidiva*)’. Soothing baths are useful to promote sleep, which is key to recovery; the consumption of lean meat is as well. To these universal cures for *phrenitis*, Avicenna adds others that depend on whether the patient is affected by the bilious or the bloody type of *charabitus* (*aliud cholericum, aliud sanguineum*). A combination of pharmacological, dietetic and bodily interventions is described for each, although these will not be surveyed here.

In Avicenna’s account – which, as noted, remained a standard in European medical education for centuries – the encephalic interpretation is central, and its backbone is the Galenic material. Avicenna’s loyalty to this version of the story is maintained despite his otherwise complete support of the Aristotelian, cardiocentric view of the human body and his disregard for Galen as a ‘philosopher’. This compromise reveals *phrenitis* as a perspicuous illustration of another phase in the competition between these two systems in the development of modern medicine, biology and science, in which the encephalocentric model is integrated and ultimately prevails.<sup>135</sup> At the same time as Avicenna depicts an encephalitic *phrenitis*, he also insists at length on the involvement of the chest, lungs and viscera (following Galen’s presentation in *On the Affected Places*<sup>136</sup>), expands on the ethical-characteriological aspects of the disease and inserts foreign elements, such as references to a kind of rabies and to the daemonic ‘*sibari*’.

Quite different in this respect are other fundamental Arabic medical texts from the same period, such as those authored by the Andalusian Ibn-Rushd (*Abū l-Walīd Muḥammad Ibn Aḥmad Ibn Rushd*, 1126–1198 CE), known as Averroes, a royal physician at the Almohad court and author of a number of medical treatises, and by his friend and collaborator Ibn Zuhr (Avenzoar). Averroes’s *al-Kulliyāt fī l-ṭibb* (‘*General Principles of Medicine*’, Latinized in the West as the *Liber Colliget*<sup>137</sup>), written around 1162 CE, is

<sup>135</sup> On these tensions and their resolution in Avicenna, as well as the debate on cardio- and encephalocentrism from sixth-century Alexandria onwards, see Strohmeier (2019) 219–20. See also Chandelier (2018) 182–83 on Averroes’s conciliation of Aristotelianism, although maintaining respect for Galen’s clinical and therapeutic practices; Forcada (2019) 237–38 on how the Aristotelianism of Averroes’s medicine ‘was . . . overshadowed by Galen and the Galenism of the *Canon* in Europe and the Muslim world’.

<sup>136</sup> Commented on already at pp. 151–58.

<sup>137</sup> The Latin translation of the *Colliget* by Hyeronimus Syrianus in the thirteenth century also became an important medical textbook in Europe, although it was less influential than Avicenna’s *Canon*.

the more medical text. For the history of *phrenitis*, however, it is of little help: it mostly discusses general principles of physiology, elaborated in an Aristotelian frame, rather than nosology, and does not thematize the diseases of the head as of particular medical importance.<sup>138</sup>

The title of the *Colliget*, with its general scope, is complementary to that of the *Kitāb al-Taysir* ('*Book of Simplification Concerning Therapeutics and Diet*') written by Avenzoar on a commission from Averroes himself; the two men collaborated and their texts are best understood together. An instance parallel to *phrenitis* is found in the first section of the *Taysir*,<sup>139</sup> *de egritudinibus capitis*. Here *caput* is given a literal, concrete meaning, indicating a firmly tangible localization.<sup>140</sup> (Thus dandruff, lice and other affections of the hair are treated here.)<sup>141</sup> At 1.3.5 (folio 4) discussions relevant to our topic begin, regarding 'inflammation of the meninges (*de apostematibus paniculorum capitis*)' and at 1.3.6 (folio 5) 'of the brain and the *rethe mirabilis*' (*de apostematibus cerebri et rethe mirabilis*, folio 6).

Two kinds of swelling or *apostemata* are found here. The first, 'in the membranes of the head', happens 'with no external cause (*absque causa extrinseca*)'. It can strike the external membrane in the cranium or the harder, internal one, called the *dura mater*, and is caused by acrid humours (*ex humoribus acutis*); excruciating pain, red eyes and disturbances of the senses and the intellect follow. For both cases, phlebotomy and specific diets are recommended and described in detail, taking up the majority of the space devoted to the disease. Suffering, lack of sleep and oppression are mentioned, but no specific clinical element connects the passage to *phrenitis* in a detailed way. The next section, 'on the apostemata of the brain (*de apostematibus cerebri*)', opens with the key point that the brain's own substance produces the humour which causes the swelling (*apostema procreat in sua propria substantia*). This is a particularly serious disease, which can also involve the so-called *rethe mirabilis*. Its symptoms are implicated by one another and unmistakable (*inseparabilia et certa*), in the same way that darkness and clouds (*umbrositas et nebulositas*) inevitably

<sup>138</sup> Averroes also discusses the signs of *apostemata* among the *aeiritudines* at 34 (folio 72), and the signs concerning the brain at 3 (folio 67). On the 'generalities' of Averroes' *Colliget*, see Tamiani (1994); Delgado (2012); Pormann and Savage-Smith (2007); Chandelier (2018) 166, on Averroes's re-establishment of Aristotelian positions in his discussions of Galen.

<sup>139</sup> Avenzoar, *Taysir* Folios 2–44 (1542).

<sup>140</sup> This datum is found in other Arabic texts, Avicenna and the *Pantegni*: at 1.1 *de furfuribus capitis*, 10 *de lendinibus*, 12, etc.

<sup>141</sup> Curiously, Avenzoar is reported to have been no fan of Avicenna's *Canon*; see the anecdote recalled by Chandelier (2018) 164 n. 27 regarding his use of the *Canon* as scrap paper to write prescriptions for his patients.

accompany rain, a meteorological simile which underlines the determinism of the account and the strength of the corporeal semiotics: ‘a reddening of the white of the eyes (*rubedo albedinis oculorum*)’; ‘swelling of the eyelid ... with difficulty of movement ... acute fever (*grossities palpebrarum ... cum difficultate motorum ... fortitudo febris*)’. All this is quite compatible with our *phrenitis*; on the other hand, the passage is neatly encephalic, devoid of the elements which make *phrenitis* a disease and a human experience with a mental component.

The discussion of *phrenitis* proper appears at 1.14 (folio 12), *de sirsen calido cum alienatione*. Avenzoar first distinguishes a proper *phrenitis* from one deriving from other diseases. Only once the disease has fixed itself in the brain does it require dedicated care (*postquam in cerebro confirmata fuerit indigent cura speciali et propria*). Its causes are acidic and mordent humours and the vapours they generate as they rise from the stomach to the head. A strong, hot fever can also generate the disease. These two types require different treatments.

In the centuries that followed, Avicenna’s text acquired enormous influence in medical and university quarters, as already noted. The *Concordanciae* by the thirteenth-century medical author Jean de Saint-Amand, for instance, a key reference work in medical education at the Faculté de médecine in Paris for over two centuries thereafter,<sup>142</sup> offers at the lemma *Frenesis* (136 Pagel) seven statements which emphasize precisely the points Avicenna included as key in his account of the disease.<sup>143</sup> The sheer number of copies and commentaries on the *Canon*, moreover, testify to its importance. Space allows for mention of only one notable specimen of this academic and scientific activity, the commentary by the medical master of Padua and Perugia, Gentile da Foligno (d. 1348), called ‘*speculator*’ for the fineness of his theoretical engagement with medical problems. Gentile was the best-known doctor of the fourteenth century and, with Taddeo Alderotti, the key figure of medical scholasticism in the Middle Ages; his lengthy commentary on the whole of Avicenna’s *Canon* became an important instrument for the use of this influential text by teachers of medicine, students and practitioners. If we look at how Gentile reads and explains the section of the *Canon* devoted to *karabitus* (*phrenitis*), and the

<sup>142</sup> The influence is notable in the work of Pierre de Saint-Flour, whose *Colliget florum medicinae* (later also known as *Concordances*), composed in the second half of the fourteenth century, elaborates (and reshapes) the material in Saint-Amand; see Jacquart (1995).

<sup>143</sup> See McVaugh (1990) 64–66 on the epistemological and didactic qualities of the *Concordanciae* (the second part of the *Revocativum memoriae*; the title *Concordanciae* may be later, as explained by Jacquart 1995, 173) as index, encyclopaedia and commentary.

way he raises questions and objections, we get a good sense of which points were extracted and discussed as central to our disease, as well as what the matters of contention were and which passages were seen to require further explanation.<sup>144</sup> At folio 55,<sup>145</sup> Gentile begins by commenting on *apostema* as an essential element of *charabitus* (*phrenitis*) and on its pathological significance *per se*. He then notes a number of *dubia* – points where questions, uncertainties or objections arise – for instance, ‘he is uncertain whether there could be *phrenitis* without *apostema*’ (*dubitat utrum charabitus possit esse sine apostemate, dubium 1*). A look at the *dubia* Gentile proposes is instructive for reconstructing the agendas of contemporary scientists and physicians. He points out that there are two types of *charabitus* (*dubium 1*), one ‘real’ (*verus*), in which there is continuous fever and *apostema*, and another not ‘real’, involving no alienation of a continuous kind and similar to the state which occurs in fevers. This second kind is caused by vapours exhaled from the stomach or the belly: the continuity of fever, the alienation and the differentiation between real and non-real *phrenitides* are confirmed as central themes. Gentile also discusses the matter (*materia*) of the brain and the nature of the *paniculi* (meninges) in order to ask whether these too can suffer a ‘hot’ affection.<sup>146</sup> In fact, they are made of *materia frigida* or are *membra frigida* (*dubium 2*), and Gentile remarks that *charabitus* is most often caused by ‘hot, thin matter (*materia calida et subtili*)’, a histological point that acquired importance from Rāzī onwards, as already noted.<sup>147</sup>

Next Gentile asks which membrane is more exposed to *apostema*, the so-called *pia mater* or the *dura mater* (*in subtili scilicet pia matre an in grosso, dubium 3*), and whether an *apostema* can occur in the brain matter as well (*dubitat utrum charabitus sit apostema solius paniculi; vel etiam sit apostema substantie cerebri, dubium 4*). He also asks which of the two types should be regarded as worse (*dubium 5*), exposing and discussing Avicenna’s views on all these points at length (folios 55–56). Gentile’s arguments and distinctions cannot be recounted in detail here, nor would they add much to the discussion. What is notable is how the terms of the discussion vis-à-vis this disease increasingly coalesce around anatomically localizing,<sup>148</sup> histological-biochemical topics (to use anachronistic terms): the shape and

<sup>144</sup> On Gentile and the commentary on Avicenna’s *Canon*, see French (2001), 220–53 for remarks about the signs of diseases, mentioning *karabitus*, ‘frenzy’, several times.

<sup>145</sup> Gentile da Foligno. *Tertius Can. Avic. cum amplissima Gentilis Fulgi. expositione*. Venice, 1522. The relevant sections for *phrenitis* are at folios 55–65 of the edition used here.

<sup>146</sup> In Averroes and *Liber Teisir* there is also a distinction between ‘pain in the head due to moisture’ and ‘pain in the head due to dryness’ (*dolor capitis ex humiditate* and *dolor capitis ex siccitate*) (folio 4).

<sup>147</sup> See below, pp. 238–39. <sup>148</sup> See also folio 58 on the localization at the base of the neck.



texture of the affected parts, the hot or cold quality, the humours involved. Gentile devotes *dubia* 6–10 (folio 56) to the latter question, reflecting on the humours mentioned by Avicenna for *phrenitis* – *cholera pura*, *rubea*, *citrina*, *sanguis cholericus* or bile mixed with *phlegma* – comparing Avicenna's views with those of Avenzoar, offering a glimpse into the ongoing debates about humoral determinations. *Dubium* 11 discusses the different possibilities for extinguishing or resolving *phrenitis*, including bleeding from the nose or the belly and sweating (folio 56), while *Dubium* 12 treats lethargy and its conversion into *phrenitis* (folio 57); conversion from peripleumonia was discussed previously (folio 56).

Of the themes addressed by Gentile, some involve clinical aspects, such as the behaviour of these patients. At folio 56, for example, he speaks of the continuous laughter, and at folio 57 of the restlessness and yawning (*inquietudo et oscitatio*) of phrenitics, as often discussed by medical authors. He also mentions their 'climbing the walls' and their pathological drinking and thirst. These signs of distress and overheating are described one by one and dissected in the section on signs (folio 57): alienation and disturbance with talking (*abominatio loquae et pigritia ab ea*), confusion (*permistio intellectus*), as well as a variety of physical symptoms (*de signibus eius communibus*). Among the latter, the insistence on the agitation of these patients stands out: *agitatio*, *spiritus agitatus*, *tremor membrorum*, etc. Gentile also focuses on the psychology and moral existence of phrenitics (folio 58): they shout and jump due to awful dreams (*propter terribilia quae in somniis videntur . . . excitantur cum vocibus propter terribilia somnia*), and physical suffering causes morally flawed behaviour, such as shamelessness (*inverecundia*) due to the damage to their judgement (*propter errore extimative*), or boldness and anger due to overheating (*audacia et ira propter fervorem caloris*). A lengthy passage is also devoted to the patients' pathological relationship to drinking water (folio 58). At folio 59, Gentile returns to the topic of hallucination and crocydism, offering a highly detailed explanation of the process of the obfuscation of the eyes as body part. Here he is reproducing Avicenna, of course, but he further materializes and localizes the cognitive, psychological datum – the confused imagination of these patients – formalizing this corporeal version of *phrenitis* even further, while populating it with more and more details.

This dense commentary illustrates the process of preparation, so to say, of the nosological datum *phrenitis* for its final meningitic outcome in modern medicine.<sup>149</sup> Other features perpetuate traditional elements while

<sup>149</sup> Symbolic of this is the *lipa*, the discharge of fat from the eyes discussed by Avicenna and others – a strikingly concrete, tangible sign of the disturbed eyes of the overheated, hallucinating phrenitic.

corroborating this development, especially the reference to the chest. Folios 59–60 accordingly contain a discussion of *birsen*, *sirsen* and *pleuritis*, and of the communalities of the two membranes (cerebral and diaphragmatic/pleural) as a vehicle for pathological similarity. This again confirms the relevance of the histological connection, as well as the interest in the distinction between ‘real’ and ‘false’ *phrenitis*, and the relationship of the disease to lethargy. At folio 62, in the middle of various observations on Avicenna’s therapeutics of *phrenitis*, Gentile devotes a section to the ideal *domus*, the domestic environment which should be offered to soothe these patients, and to light and darkness, while also mentioning sleep, phlebotomy, embrocations, *oxyrrhodinum*, massages, dietetics and all the usual topics.

In conclusion, the main points Gentile extracts, by choosing specific lemmata in Avicenna, offer a telling picture of what is preserved in the tradition, studied, elaborated and taken for granted in this period. No great new ideas are found here. But the traditional elements are by now fully digested, so to speak, and assimilated with both intense scrutiny and a translation of old – sometimes millennia-old – doctrinal intricacies into living medical practices. Since these texts continue to circulate as key medical materials for centuries, they offer solid confirmation of how *phrenitis* persists, despite other changes, as a consistent set of signs and symptoms, but simultaneously advances along a trajectory of greater and greater embodiment, still keeping chest and head together and touching on key topics of psychological and ethical life.

### *Two Medical Masters: Arnau and Bernard*

A unique perspective on medieval reflections on mental health comes from two other authors who were not part of the established teaching syllabus, the Valencian (or French?)<sup>150</sup> medical doctor Arnau de Vilanova, author of the *De parte operativa* (c. 1306–08 CE), i.e. ‘on the practical, operative part of medicine’, a work not intended for university teaching but more theoretical in scope;<sup>151</sup> and Bernard de Gordon, master of the faculty of

While the ‘tear running down from one eye’ comes from Galen’s *On the Affected Places* (5.4, 8.330 K.), the importance of its coagulated desiccation can be seen as a suggestive illustration of the developing embodiment of this particular form of mental illness.

<sup>150</sup> Arnau was active in the territory of the Crown of Aragon and was master in Montpellier. On this work, see Salmón (2017b); McVaugh (1990) 64–68 on his role in introducing the ‘new Galen’ to medical studies.

<sup>151</sup> See Salmón (2007), (2017b) on Arnau’s production and on the structure of his *De parte operativa* (2017a); McVaugh, Bos and Shatzmiller (2019) 55 n. 90. On Arnau and the brain, see also MacLehose (2018).

medicine at Montpellier, who authored a *Practicum* or *Lilium medicinae* (1305 CE).

Only the initial part of Arnau's *De parte operativa*, entirely devoted to damage to and disorders of the mental sphere and related cures, survives. For us, this section of Arnau's work is important as an extensive attempt to organize a kind of 'psychiatric manual' complete with a form of classification and conceptualization of the diseases of the mind. Arnau devotes a chapter to *frenesis* at the very beginning of the collection, followed by lethargy. The text first offers its own version of how to tackle the problem of the name of the disease and its oscillating indication between brain and chest in the Arabic terms *birsām/sirsām*:

The Greek term *Frenesis* properly corresponds in Latin to a lesion of the membranes or *pelliculae* and the like. The term is thus attributed indifferently with a change of name, despite its seeming meaning, to any hot *apostema* of the membranes, those of the head as much as those of the chest, *because it is by the affection of either of those that that highest and absolute damage to the human individual, which is the loss of reason, occurs (unde per antonomasiam attribuitur apostemati calido pellicularum indifferenter, tam capitis quam pectoris, quoniam ex utraque passione causatur illa summa et absoluta hominis lesio que est amissio rationis).*<sup>152</sup>

It is worth noting that this author, unlike Avicenna, but in line with other medieval texts,<sup>153</sup> stops well short of dismissing the ambiguity in the name as merely a linguistic problem: derangement, the gravest damage a living being can suffer, can be caused by *either* meninges or diaphragm. He then proceeds to explain the Persian origin of the terms *barsām* and *sirsām*, and how the name *karabitus* (or variations of it) arose from the different vocalism of the Arabic when the Greek φρενίτις was translated into that language.<sup>154</sup> The fact that the double localization is here an ontological point and no longer a question of nomenclature is confirmed by what follows: 'The true kind of *frenesis* is the one of the head, but one of the chest

<sup>152</sup> My translation of Salmón's text (with thanks to him for his help and corrections).

<sup>153</sup> Compare here also the *Syriac Book of Medicines*.

<sup>154</sup> 'In Persian, however, they use two specialized terms, and in fact they call the *apostema* in the membranes of the chest *birsēn*, and the one in the membranes of the head *sirsēn*. But *karabitus* is the way in which the name *frenesis* got corrupted among the Arabs, because of the polyvalence of the letters they write in their language [. . . , so that] by the same letter in the same expression *frenesis* or other terms, namely *karabitis* et *karabita*, can well be represented' (*persice tamen propriis vocabulis dicuntur, nam tale apostema in velaminibus pectoris nominatur birsēn, in velaminibus capitis sirsēn. Carabitus autem est nomen frenesis corruptum apud arabes, propter uniformitatem literarum quibus scribitur apud eos, unde punctis deficientibus, que vices gerunt vocalium, eadem litere in eadem dictione scripta eque bene possunt representare hanc dictionem frenesis et aliam, scilicet carabitis et karabita*).

is also known under this name, and occasionally, following a comparable kind of *apostema*, there is one in the womb or stomach (*Species frenesis vera est capitalis, nota est pectoralis et interdum ex simili apostemate in matrice vel stomacho*).<sup>155</sup> The possible involvement of other parts of the body is made clear, and the ranking of the variety in the head as *vera* and that in the chest as *nota* offers a telling commentary on the possible understandings of *phrenes* discussed in the early chapters of this book. The true damage is that in the centre of mental life, but that in the chest and the illness that results from it is ‘notable’ (*nota*, ‘well-known, widely recognized’, *sc.* in medical authorities).<sup>155</sup> The importance of chest and stomach resurfaces when Arnau summarizes the causes of the disease: alongside any external factors ‘which generate or exacerbate the hot humours, or move them towards a place of collection (*que humores calidos aut generant aut acciunt aut movent ad locum collectionis*)’, there are antecedent humoral causes but also constitutional ones (‘a weakness . . . a bad disposition’, *debilitas . . . mala dispositio*). These are localized elsewhere than in the head, especially in the heart, which can exude acridic vapours and hot humours upwards (*potius cordis, mandantis acutum vaporem aut calidum humorem*), with dire consequences for the head.

The mention of the heart as a source of impediment to the centre of cognition through harmful exhalations – not only the direct involvement of the *cor*, but the adoption of the narrative of *De partibus animalium*,<sup>156</sup> whereby the ‘south of the body’ invades the purity and operative clarity of the ‘north’, impairing it – is a noteworthy Aristotelian insertion.<sup>157</sup> Additional damage can be done by other fluids and humours, such as boiling blood (*sanguis fervens*) in the membranes or various biles and vapours. When these are excessive, they cause illness by accumulating and being further compressed (*coartatus/coartata*) into pathological places, especially within the membranes.

The signs Arnau recognizes are the well-known ones, which dominate in Galen and are transmitted by the encyclopaedic authors (although in his case mostly filtered through Avicenna): ‘daemonic alienation, with false and interrupted laughter; violent distress; sticking out the tongue, and blackness of the tongue; whitish and very watery urine; a spasmodic, frequent, trembling pulse (*alienatio demoniaca, cum falso risu et interpolato*;

<sup>155</sup> This is reminiscent of the use of the words in the *Anonymus Londinensis*, who conveniently placed the damage in the *logistikon*, abstractly conceived. See Chapter 2.

<sup>156</sup> Cf. above in Chapter 2, pp. 43–44, 51.

<sup>157</sup> The image goes back further, to Plato *Ti.* 69d–70b: the neck was created to keep the heat generated by the heart from affecting the brain. (I thank Sean Coughlin for this observation.)

*inquietudo vehemens; emissio lingue eiusque nigredo; urina alba et maxime aquosa; pulsus spasmosus, frequens, tremulus*'. He then discusses the change into lethargy, as well as the signs of 'apostema of the body of the brain' (as opposed to the membranes) and 'of the anterior and middle part'. These manifestations are partly familiar to students of ancient medicine from the portrayal of distress already found in the Hippocratic authors:

disappearance of the coloured part of the eye and display of the white; choice of a supine position when lying down; swelling of the belly and extension of the bones of the chest (*occultatio nigredinis oculorum et aparicio albedinis; electio decubitus resupini; inflatio ventris et extensio ossium pectoris*); decrease in febrile inflammation; insensibility to the fever in the patient; blackness of the body (*sedatio febrilis inflammationis; insensibilitas febris apud patientem; nigredo corporis*).

There is a reference to the pulse, familiar from imperial nosology onwards, and again 'tremor, much throwing of oneself around; grinding of the teeth; twisting eyes and neck (*tremor; multitudo ictigacionis; stridor dentium; tortio oculorum et cervicis*)'. The classic resolution occurs through a release of fluid: 'Signs of resolution of the disease through haemorrhage through the nose or haemorrhoids or menstruation or bleeding from the womb: abundant evacuation through the above-mentioned parts, with recession of the alienation and recovery of the correct pulse'.<sup>158</sup> Arnau also mentions conversion into other illnesses: lethargy, of course; 'ethic' fever (with daily oscillations, associated with *phthisis*), *ethica febris*; spasm; and in the case of *apostema*, of the substance of the brain in its anterior or middle part (*in apostemate substantie cerebri et partis anterioris aut medie*).

Bernard de Gordon's *Practicum* or *Lilium medicinae* (1305) achieved great fame and diffusion, becoming required reading for medical students at Montpellier and being widely consulted elsewhere.<sup>159</sup> He opens his treatise with fevers, and within this topic mentions in the first place *frenesis* as an example of the dangerous ardent kind. The dedicated section is found at 216, in *de passionibus capitibus*, Particula II, xxii, *de Phrenesi*. Here the disease is defined as *apostema calidum in panniculis cerebri generatum*, 'a hot *apostema* originating in the membranes of the brain'; its cause is pure bile and the boiling of blood in the heart or liver (*causa est cholera pura, aut ebullitio sanguinis in corde aut hepate*). Localization, concreteness and a focus on the body seem to prevail, as *phrenitis* increasingly becomes *swollen, hot, organ-based and tangible*, and the heart–brain cooperation is maintained in varying forms.

<sup>158</sup> On this topic and its tradition, see Carpentieri and Mimura (2017).

<sup>159</sup> See Demaitre (1980) on Bernard de Gordon, esp. 51–59 on the *Lilium medicinae*.

The text becomes especially interesting when Bernard discusses the concomitant causes: here the accent is heavily on ‘heating’ in all its manifestations and possible vehicles. Youth, the summer season – the Dog Days in particular – staying out in the sun without a hat, as well as eating warm or warming food, can all play a role as concomitant causes.<sup>160</sup> Bernard also recognizes the two kinds of *phrenitis*. There is a *phrenitis vera* that arises ‘from pure red bile or burnt red bile, or vapour rising from blood boiling in the heart and liver, as it gathers in the membranes of the brain and in the substance of the marrow (*in substantia medullari*)’, and a *non vera*, of multiple localization and aetiology (‘from yellow bile, or following fevers of different kinds, as well as *apostema* of the lung, the diaphragm, the stomach, the liver, the womb and so on’, 216). In the first case, the signs are ‘continuous fever, alienation, wakefulness, thirst, blackness of the tongue, disorderly movement of the feet and hands, agitation of the whole body, continuous talking and terrible furious symptoms’. In the second case, the *non vera*, the signs are milder in their course and intermittent: *omnia sunt remissa, et aliquando quiescent*. There is a ranking of severity among these various types: *deterior* is the one in the *substantia* of the marrow, followed by the one in the *pia mater*, then the one in the *dura mater*. The worst is the kind caused by burnt and not-burnt red bile; then the one caused by blood; then the one caused by yellow bile. Especially certain signs of impending death are urine that turns white after having been coloured, continuous alienation and a wakeful state, urine retention and spasms. Finally, two visible symptoms are mentioned which are also not found elsewhere in the ancient and medieval material, but appear in modern medical cases:<sup>161</sup> if the tibiae are extended and the patient cannot bend the leg (*conduplicare*),<sup>162</sup> and if a vesica appears in the thumb. In these cases, the physician is advised, ‘Best to run!’ (*medicus igitur confestim fugere debet*).

The cure Bernard proposes consists of phlebotomy, various cooling measures, limited food intake and a light diet, and again the application of the viscera of slaughtered animals, cockerel or goat lungs, to be extracted from the back while the animal is still alive (*de gallo et de pulmone arietis et quod per*

<sup>160</sup> *Causae autem coadiuvantes, sunt, ut quia iuvenis cholericus, et tempus aestivum, et quia laboravit in diebus canicularis, et stetit in sole calido capite discooperto, et ieiunavit ed comedit cibaria calida et alia consimilia, quae corpus calefaciunt et desiccant.*

<sup>161</sup> See Chapter 7, p. 332.

<sup>162</sup> Retrospectively this corresponds to Kernig’s sign in current medicine (I thank Paolo Trezza for this suggestion): ‘in the supine position the patient can easily and completely extend the leg; in the sitting posture or when lying with the thigh flexed upon the abdomen the leg cannot be completely extended; it is a sign of meningitis’ (<https://medical-dictionary.thefreedictionary.com>, accessed 1 April 2023). But compare the pain in the leg discussed by ancient authors, above p. 27 n. 18.

*dorsum extrahatur animali vivente*). A cold environment and cold water are helpful (*domum . . . frigida, et aspergatur aqua frigida*). In the case of extreme behaviour (218), patients should be tied up to prevent them from doing harm to themselves or others. In some instances, *phrenitis* can combine with ‘wolf-like *mania* (*mania lupina*)’, with dire consequences: the patient climbs walls and the like (*et tunc accidentia terribilia, quoniam ascendit parietes et similia*).

These two works effectively reflect learned medicine from the first half (Gilbertus) and late thirteenth century (Bernard). Both were very popular in their time and enjoyed a wide manuscript diffusion, and were translated into the vernacular and then widely printed in the Renaissance, representing the background against which modern anatomists set their own understanding of *phrenitis*. As these two examples show, then, medically speaking in the course of the Middle Ages *phrenitis* is confirmed as a strong nosological label, while simultaneously becoming a salient collection of symptoms independent of a diagnosis.

#### Phren(es) and phrenitis in Jewish Communities and Andalusian Judaean-Arabic Sources

Arabic translators and medical authors form the largest non-Latin corpus of testimonies to the reception of Graeco-Roman medicine in the medieval West. But an important role in this history, inextricable from the Arabic tradition as a whole, is played by philosophers and medical thinkers from Jewish communities, who also mediated and transmitted Greek medical doctrine, studying it in Latin or more often Arabic versions.

A glimpse into the Andalusian Jewish milieu is offered by the glossary compiled by Marwan ibn Ġanah (Rabbi Jonah, tenth/eleventh century CE), the so-called *Kitab at-Talkhis*.<sup>163</sup> Here the entries for *phrenitis* and *phrenes* are clarified in an interesting way combined with what appears to us to be greater confusion. Entry 795 Bos *et al.* (folio 67r,13–v,2), first of all, shows that here as well controversy about the meaning of Greek *phrenes* is alive, inviting comparison with the *Alphita* entry:<sup>164</sup>

*Frinās* (*phrenes*/φρένες) is the midriff (*ḥijāb*) known as *diyāfrāghmā* (*diaphragma*/διάφραγμα, diaphragm). Plato applied this term to feeble-mindedness. It was called *frinās* since they assumed that if (the midriff) is afflicted by swelling or fever, a man becomes mentally confused and it causes an absence of mind. They therefore thought that this is the seat of the mental faculties. Galen disagreed with this (idea) – from Ahrun’s book.

<sup>163</sup> Bos (2020). <sup>164</sup> See above, pp. 252–53.

Note the ambivalence regarding the localization – the midriff – and the pathology, ‘feeble-mindedness’, which Plato identified with *phrenes* neither in the *Timaeus*, to which this passage refers, nor anywhere else. The disease *phrenitis*, this superimposition suggests, is automatically evoked by the term *phrenes* and the mention of the related body parts. At 899 Bos *et al.* (folio 76r, 4–8) Marwan ibn Ġanah defines the term *phrenitis* itself, *Qrānīṭus*: ‘*qrānīṭus* (*sic*, i.e. *phrenitis*/φρένιτις) is the midriff (*hijāb*), called *qrānīṭush*, which can be translated “the mind” (al-‘*aql*), Aristotle said this in his *Book on Animals* (*Kitāb al-Ḥayawān*). From Galen’s *Book on the Crisis* (*Kitāb al-Buḥrān*): *Qrānīṭus* is an inflammation of the brain (*waram al-dimāgh*) in the Greek language. The Persians call it *birsām*.’ Here again, *locus* and affection are confused,<sup>165</sup> and *qrānīṭus* – which derives from the disease name – is said to be the diaphragm and figuratively the mind. The brain is omitted from the definition of the disease; the early, imprecise term *birsām*, with its reference primarily to the chest, is brought in instead. The swelling of the brain known to us from other medieval sources as *sirsām*, on the other hand, appears at entry 1002 Bos *et al.* (folios 81v, 14–82r, 2): ‘*shirsām* (*phrenitis*) is a swelling (*waram*) occurring in the brain which is caused by either heat or cold – from al-Rāzī’s *Kitāb al-Taḡsīm wa-l-tashjīr*. From (Galen’s) *Book on Causes and Symptoms* (*Kitāb al-‘Ilal wa-l-a‘rād*): Hot *phrenitis* (*shirsām*) is a mental confusion which occurs in combination with fever, if the brain is affected by a swelling.’<sup>166</sup> The vast majority of these Jewish texts are not translated into European languages, but one of the most representative is available in a recent edition, the *Medical Aphorisms* of the Andalusia-born Sephardic scholar Moses Maimonides (twelfth century CE).<sup>167</sup> This work, originally written in Arabic possibly when Maimonides was living in Cairo,<sup>168</sup> is an important complement to the general picture I am sketching: as Bos reiterates, it was widely read and copied for centuries and enjoyed ‘great popularity in medieval Western Europe. In the thirteenth century it was translated into Latin . . . Until the

<sup>165</sup> See Bos *et al.* (2020) *ad loc.*: ‘Ibn Janāḥ’s sources in fact failed to distinguish between φρήν (supra no. 795), the midriff, which was assumed to be the seat of the emotions and the mind (‘*aql*), and the disease called *phrenitis*/φρένιτις.’

<sup>166</sup> At 1023 we again find the ‘cold *phrenitis*’: ‘†Al-ūirghus† (recte al-litarghus I, *lēthargos*/λήθαργος, lethargy) is a “cold *phrenitis* (*shirsām bārid*)”, according to al-Rāzī’s *Taḡsīm*’ (folio 84r, 1–3, 1136–37 Bos).

<sup>167</sup> In Bos (2004a, 2007, 2011, 2016, 2017). As Bos (2004b) xx describes the work, it ‘is constituted by twenty-five treatises comprised of approximately fifteen hundred aphorisms that are drawn for the most part from the work of Galen, covering every field of medicine’; cf. also Langermann (2019).

<sup>168</sup> For details, see Bos (2004b) xx–xxi, xxv–xxvi. The original composition in Arabic testifies to the close connection between these linguistic communities in medieval Andalusian culture.



fifteenth century the *Aphorisms* was, as Muntner remarks, “the most widely known and wanted repertorium of Galen”.<sup>169</sup> In addition, Maimonides’s *Aphorisms* became influential in Jewish circles through two major Hebrew translations.<sup>170</sup> This evident popularity shows that the Greek medical corpus not only circulated among Jewish doctors and intellectuals, but was meditated upon and abridged for practical use,<sup>171</sup> and that in these communities too *phrenitis* was recognized and perpetuated as a useful nosological concept and a concrete clinical reality by practitioners and students.<sup>172</sup>

*Phrenitis* is mentioned nine times in the *Aphorisms* in a relevant manner, in connection with a general prognosis (Treatise 6), the pathological topic of swelling (Treatise 9) and the general definition of diseases (Treatise 23). At 6.11 (3 Bos) Maimonides discusses the connection between melancholy and *phrenitis*: ‘Sometimes melancholic delusion and *phrenitis* occur together. An indication of this is that at one point [someone suffering from it] talks continually; for this is a symptom of *phrenitis*, while at another point he is continually silent, for this is a symptom of melancholic delusion.’ At 6.37 (9 Bos) the author offers a description of the disease and a summary of its chief symptoms. Just as in the *Syriac Book of Medicines*, the apparent source is Galen’s *On the Affected Places* 5.4,<sup>173</sup> where diaphragmatic *phrenitis* is found. This is perhaps the most significant aphorism for our purposes – a firm, numbered list of items is selected with respect to *phrenitis*:

The signs of *phrenitis* are sixteen: sleeplessness or disturbed sleep, delirium manifesting itself gradually, acute fever which never subsides, short-term memory loss, lack of thirst, very aggressive and insolent behaviour displayed by the patient, deep and intermittent respiration, a small and hard pulse, picking flocks from garments or straw from walls, roughness of the tongue, pain in the back of the head, a dry discharge from the eyes and an acrid tear streaming from one eye, drops of blood dripping from the nose, acoustic hallucinations, loss of the sensation of touch throughout the body even [when the patient is touched] with force, and the patient lies prostrate and is

<sup>169</sup> Bos (2002) 140, quoting Muntner (1957) xiii. <sup>170</sup> Bos (2004b) xxv, xxi.

<sup>171</sup> Bos (2004b) xxvii; see xxii–xxvi on the style of abbreviation, clarification and commentary in which Maimonides presented the Galenic and Hippocratic material for his readers; Bos (2002).

<sup>172</sup> ‘*Medical Aphorisms* enriches our knowledge of Maimonides’ activity as a physician, the transmission of classical Greek learning to both Europe and the Middle East, medieval Hebrew and Latin translation techniques, the medieval reaction to Galen, the interplay of medicine and philosophy, and the cosmopolitical character of medieval Islamic medicine’ (Bos 2004b, xxvii).

<sup>173</sup> This passage goes back to *Loc. Aff.* 5.4 (8.330 K.); cf. Bos (2004a) 102 *ad loc.*

unresponsive to questions. All these symptoms can occur simultaneously, but sometimes only a majority thereof.

At 6.53 (12 Bos) the diaphragmatic implications are mentioned, again following Galen's *Loc. Aff.* 5.4:

Contraction of the *hypochondria* is a special sign of an inflammation of the diaphragm and appears from the very beginning. Similarly, when *phrenitis* has been established, the *hypochondria* contracts at the very end. During an inflammation of the diaphragm, respiration is variable; sometimes it is shallow and frequent, while at other times it is deep and similar to groaning.<sup>174</sup>

At 9.17–19 (63 Bos) Maimonides thematizes *phrenitis* and lethargy as mirror-image diseases caused by a swelling, called a tumour in Bos's translation:

The cold brain tumour, namely lethargy, and the hot one, namely *phrenitis*, have in common that in the beginning both should be treated by phlebotomy and by the application of rose oil and vinegar in order to expel the harming humour – whatever humour it is – from the head. [This should be done] although one disease goes with sleeplessness and the other with torpor. Hereafter, one should try to calm [the person suffering from] sleeplessness and to awaken and stimulate the person who suffers from torpor.<sup>175</sup>

At 23.62 (51 Bos) Maimonides reaffirms the seminal Galenic and traditional distinction between *mania* and *phrenitis* based on fever: 'Madness/*mania* is a chronic mental confusion without fever, whereas *phrenitis* is a chronic mental confusion with fever.' In medical and philosophical Jewish circles, then, *phrenitis* was assimilated as a medical concept, following standard Galenic authorities, but leaving ample room for a chest-centred account.

<sup>174</sup> See also 23.67 (53 Bos), where Maimonides summarizes again from *Loc. Aff.* 5.4: 'Mental confusion that arises from *phrenitis*, which is an inflammation that occurs in the brain or its membranes, does not happen all at once, but little by little, and does not subside during the decline of the fever. But mental confusion occurring in the case of ardent fevers and caused by [illnesses] affecting other organs happens all at once and subsides when those illnesses have passed their climax. An exception is the case when the mental confusion is consequential upon an inflammation of the diaphragm, for then it is closely related to the mental confusion that is consequential upon *phrenitis* and that does not subside [immediately] after the [illness] has reached its climax.'

<sup>175</sup> Cf. 9.18 for therapy: 'When a brain tumour reaches its culmination, one should rub the head of the person whose illness is accompanied by sleeplessness and delirium with a salve made from poppy, while the corner of the nostrils and face should be rubbed with substances that cool the brain. If someone's illness is accompanied by torpor, one should heat the thick humor.'

*Talmudic Medicine*

With the exception of the *Syriac Book of Medicines*, with its composite history, in all the Arabic sources, whether Islamic or Jewish, examined so far it is easy to recognize a core that is fundamentally a form of reception – and elaboration – of Graeco-Roman medicine. It is thus appropriate to speak of them all in terms of an ‘Andalusian’ or ‘Judaeo-Arabic’ milieu. If we consider instead the testimony of Jewish medicine preserved by the Talmud over the course of several centuries and from a much earlier period (300 BCE–500 CE), we find a richer (if problematic) intercultural parallel to *phrenitis*:<sup>176</sup> the disease *kordiakos/qordiakos*. Scholarship flags this as a parallel to our disease, although the need for anthropological caution is sometimes recognized.<sup>177</sup> At first sight, the label evokes the ‘cardiac disease’ mentioned in Celsus as explicitly contiguous to *phrenitis*, and described by Caelius Aurelianus at *Morb. Ac.* 2.30 (240–88 Bendz). This disease is accompanied by fever, is localized in the heart and/or stomach (or more generally in the viscera of the torso), and is accompanied by hallucinations.

To examine the description in more detail, we must consult the section on *kordiakos* in chapter 11 on ‘Mental Disorders’ of Preuss’s edition of *Talmudic Medicine*.<sup>178</sup> The discussion of the disease opens with a legal note: the actions of the *kordiakos* patient have no juridical consequence, since he finds himself in a state of ‘semi-consciousness’. The cause highlighted is related to wine: ‘According to Mar Samuel, this illness occurs when a person is overcome by new wine from the vat.’ Preuss swiftly identifies the disease ‘with the *morbus cordiacus* (*sic*) of the heathen physicians’, referring especially to Caelius Aurelianus, and describes the Talmudic instance, assigning wine an important role and listing confusion and babbling among the symptoms. What we find in the Talmud, however, is only partially superimposable on the Graeco-Roman cardiac disease, and other readers have challenged the simplistic transliteration on which Preuss relies. Hankoff interprets this as instead an ‘ancient description of organic brain syndrome’, seeing it as ‘one of the earliest references to what is currently known as *delirium tremens*’,<sup>179</sup> and directly references *phrenitis* (*phrenesis*, *phrenisy*, *frenesis* or *phrensy*)<sup>180</sup> as a parallel. As he

<sup>176</sup> See Kottke (1996) on Talmudic medical terminology and its Graeco-Latin influences.

<sup>177</sup> I thank Lennart Lehmhaus for bringing this example to my attention, and for his advice and help on this topic. Cf. Kottke (1996) 2924–25 on this disease.

<sup>178</sup> Preuss (1911/1978) 320–21.

<sup>179</sup> Hankoff (1972) 233; he may be influenced by the identification of *phrenitis* with delirium at the turn of the twentieth century, for which see Chapter 9.

<sup>180</sup> Hankoff (1972) 233.

summarizes the disease, it manifests itself in ‘a state of confusion’ in which the patient experiences ‘dizziness, and from the discussion of his conduct and mental incompetence, seems to be like a madman or one who has had his throat cut and is unable to speak’<sup>181</sup> (i.e. he cannot speak and is considered legally incapacitated as a consequence). Specific to this condition among other forms of madness are two aspects: an inability to distinguish colours<sup>182</sup> and, most important, curability after a short time, which differentiates it from the grave, often fatal course of *phrenitis*. Causes are new wine, but also a daemon. In Hankoff’s view, the pathological resemblance or parallel with the syndrome of *delirium tremens* are precise, while the cardiac, chest-centred echoing in the label must be eschewed *in toto*: despite the similarity of the names, he takes them to have no etymological relation. Instead, the Talmudic label *kordiakos* might be a corruption of *crocydismos*, the well-known phrenitic sign.<sup>183</sup> For Rainbow, the daemonic account rather than a bodily localization is the explanatory element:<sup>184</sup> *kordiakos* is for him the actual name of a spirit. A Greek origin for it might also be plausible, referring to the suffering heart when the mind is oppressed by a daemon: ‘the act of ravishing the heart,<sup>185</sup> . . . not the heart itself . . . a daemon who was capable of acting to harm a person’s mental and moral faculties’.<sup>186</sup>

In conclusion: *kordiakos* is a disease that involves crocydism, confusion and a loss of cognitive capacities; is linked to wine drinking; and brings inflammation and fever. It strikes the viscera or resembles ‘brain fever’, and its name seems to contain a reference to the heart. We cannot identify it with certainty with any item outside the Talmud, although one might acknowledge an aural connection between the label *phren-itis* and the illness *cardiac* or *crocydism-os* (carphology, crocydism): they share some symptoms and the involvement of alcohol. The final point, the implication of wine and other alcoholic beverages, is an association to which modern readers are drawn when navigating the uneasy waters between body and soul in discussions of pathology: *delirium tremens*, wine and intoxication are immediately understood as interfaces between the two. As we shall see, *delirium tremens* and alcoholism are one of the outcomes of ancient

<sup>181</sup> Hankoff (1972) 235. <sup>182</sup> On colours, see p. 234 above on Michael Psellus.

<sup>183</sup> Hankoff (1972) 150.

<sup>184</sup> Rainbow (2008) 257; see 258 for more interpretations; Rosner (1977) 60–4; Lehmmaus (2015) 84–85.

<sup>185</sup> As formulated in *Song of Songs* 4:9 and translated into Greek with *kardioō* καρδιόω, following the reconstruction of Rainbow (2008) 263.

<sup>186</sup> Rainbow (2008) 264.

*phrenitis* in modern pathology. Perhaps *kordiakos* offers an early instance of the same co-implication.

The Talmudic testimony is intriguing for a parallel it offers to the ambiguities in the *Syriac Book of Medicines*, especially its selective categorization of *phrenitis* in the chest with the involvement of other viscera. *Kordiakos* also features a symptomatic correspondence with *phrenitis* (crocydism, madness, hallucination, the reference to wine, the legal questions); a localization in the chest *and* attribution to brain fever; and a strange name that – depending on the interpretation – may involve the heart or daemons (a daemon sitting on the chest being an important Mesopotamian source of illness generally, and of mental illness in particular, as already noted). These elements of Mesopotamian medicine are integrated via the influence of Arabic and Jewish readers into the core<sup>187</sup> European medical curriculum – most notably, the daemonic variation of *phrenitis*, the *karabitus* named *sibari* described by no less of an authority than Avicenna.

### Conclusions

We have followed the traces of our disease in a variety of Byzantine and medieval sources in Greek, Latin, Syriac and Arabic (Eastern, North-African and Iberian). The complexity of these interlacing traditions evades quick survey. But for the purposes of our nosological biography, we can draw some conclusions about this phase of the medical history of *phrenitis*, from the seventh century CE to the beginning of the early-modern era, focusing on a number of key developments, which reflect developments in scientific and medical culture more widely:

- The concept *apostema*, ‘swelling’ or ‘tumour’, becomes central, accompanying if not replacing that of inflammation.
- There is a thematization of ‘texture’ or, anachronistically expressed, of the histological quality of the *locus affectus*; the starting point is the question, possibly stemming from a remark in Galen, of whether not only the membranes but also the body of the brain, despite its viscosity, can undergo swelling. In most sources, *phrenitis* is precisely the inflammation and swelling of the membranes of the brain, the *pelliculae*,

<sup>187</sup> As well as into its periphery: Dols (1992) 100–01 mentions Mukbilzde Mum’min’s account of diseases of the head in Turkish (fifteenth century CE) in his *Zahire-i-Muradiye*. The discussion of cerebral illnesses, following Avicenna, presents a category called *sersam* (and a type of *sersam* is *phrenitis*, *tiz sersam*, i.e. ‘swelling of the brain’); one named *phlegmon*, an inflammation of the brain taken from Paul of Aegina; and third the daemonic *sibari*, which involves madness and agitation.

foregrounded for their meningeal nature, their being ‘membranes’. It is important to note this involvement of the membrane *qua* membrane alongside that of the membranes of the brain *qua* encephalic; through this histologic communality, a link with the diaphragm, as well as with other membranes of the body, such as that of the spine, is reaffirmed. This is important because it (1) is a striking way to keep the *phrenes*/diaphragm in the equation; (2) inaugurates a holistic approach to pathology as striking what we would call a certain kind of ‘tissue’, as opposed to a certain *locus* in the body; (3) revives the heritage of the great ‘delocalizing’ narratives of the forgotten past, Caelius and Asclepiades *in primis*, with their moral and psychological implications.

- In addition to the histological concreteness of the account, there is a visible progression towards physiology and anatomy, and away from psychology. Blood and humours, brain and membranes, heart and other organs are involved – the eyes, the stomach, the womb, even the heart and the liver, as well as parts such as the nerves and blood vessels. Within this turn, a cardiocentric, Aristotelian line of inquiry is activated, as well as a new materialistic turn, to which the body closely and minutely examined is central: *lippitudo* (the fat discharge from the ocular cavity), the behaviour of the eyes, the complexion, epistaxis, blackness of body and tongue . . . *phrenitis* is more and more concretely painted on the body and identified by material symptoms, from the traditional heat and fever, to white urine, to new details such as the patient’s convulsed leg.
- Taxonomy becomes an increasingly flexible instrument: many subgroups and types of *phrenitis* are recognized. *Phrenitis* can be *vera* or *non vera*, on varying accounts; the *apostema* can be hot or cold, generating *phrenitis* or *lēthargos*; there are subgroups or similar and parallel diseases, such as *sibari*, erysipelas and rabies, as well as ramifications of humoral and physiological aetiologies and of ventricular or brain localizations; and various types strike different organs, such as the diaphragm or the heart, but also the *pleurai*, liver, stomach and womb.<sup>188</sup> The hydraulics of humours and other fluids play a central role, and these fluids are listed schematically with their respective consequences: blood, fumes and vapours; red bile, burnt red bile, yellow bile, ochre bile; boiling and putrefied blood.

<sup>188</sup> This extension is also noted by Laharie (1991) 129: ‘medieval *frenesis* is an even broader and more fluid concept than in antiquity, and which encompasses multiple affections’.

- In parallel with this pathological expansion, the idea emerges that, while the *apostema* is the real, antecedent disease, the label *phrenesis* or *phrenitis* should only designate its symptom, or even only the part affected. In the Semitic lexical examples, for instance, there is a recurring linguistic confusion between ‘affected part’ and ‘disease’.
- Some eccentric elements return or persist: the use of animal viscera and the reference to daemons and prophecy.

The name and etymology of the disease are constantly interrogated. The question regarding the name *phrenitis*, its connection with *phrēn* (as in ‘mind, diaphragm, heart, brain’) is posed again and again, and answered with the ancient Aristotelian and Platonic arguments. In some cases (Avicenna, the *Alphita*) the brain is emphasized. In others the diaphragm/heart/chest is kept in focus, combining neo-Aristotelian influences with Eastern or Semitic ethnic roots (as most visibly in the Syriac *Book of Medicines* and the example from Rabbi Jonah’s lexicon). In all instances, at any rate, the *phrenitis* ‘tag’ is corroborated and re-advertised by these discussions.