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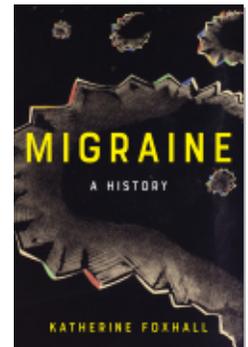
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“A Shower of Phosphenes”

Twentieth-Century Stories and the Medical Uses of History



Discovering Hildegard of Bingen, 1913

In 1913, a young scientist and historian, Charles Singer, was in Germany researching precursors to modern theories of contagion.¹ In the library at Wiesbaden, a small city on the east bank of the river Rhine, he consulted the illuminated twelfth-century manuscript *Scivias*, which described twenty-six religious visions seen by Hildegard of Bingen, the celebrated abbess of the St. Rupertsberg convent.² When he saw the images in this extraordinary manuscript, he abandoned his work on contagion and devoted his attention to the stars, crenellated shapes, shining lights, fortification figures, and concentric circles that characterized the miniature illustrations of Hildegard of Bingen’s religious visions (fig. 7.1). Writing about the moment later on, he recalled that he “recognised at once that the figures . . . resembled descriptions by patients of what they had seen during attacks of migraine.”³ Convinced that he was looking at scintillating scotoma and noting that Hildegard had admitted to long periods of illness, Singer retrospectively diagnosed a functional nervous disorder—specifically, migraine.⁴

In this chapter, I argue that Hildegard’s migraine is a twentieth-century story that could only be possible after medical men began to regularly link visual aura with migraine in the late nineteenth century. Even though our ideas about migraine have changed considerably in the century since Singer made his observations about Hildegard, the idea of her migraine has endured, attaining the status of medical fact. Some medieval scholars have used Hildegard’s migraine as evidence in attempts to settle questions about her remarkable life, including whether she was the designer of the *Scivias* illumi-

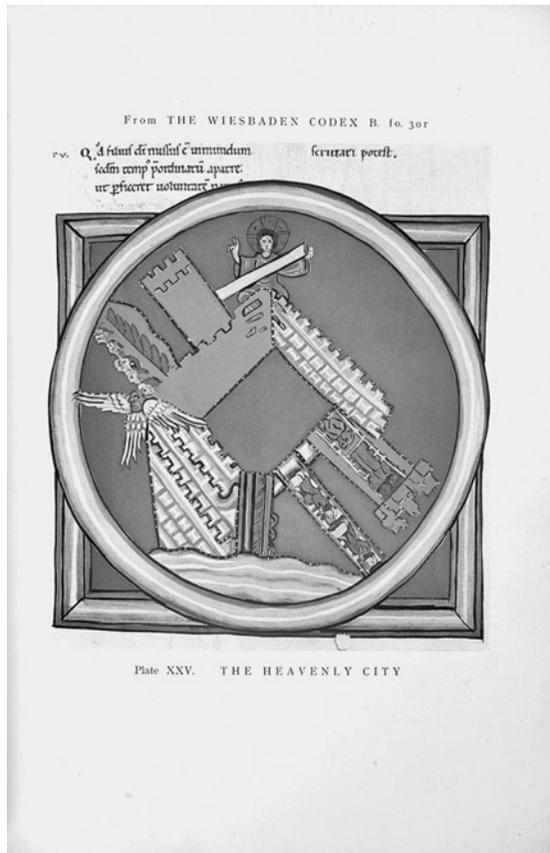


Fig. 7.1. “The Heavenly City,” Wiesbaden Codex B, from Charles Singer, *Studies in the History and Method of Science*, 1917. The Wellcome Library, London, reproduced with thanks to Andrew Singer and Nancy Underwood, copyright holders

nations. Contributors to blogs and websites have proposed that Hildegard should be adopted as a patron saint of migraine and migraineurs.

Yet Hildegard’s was not the only story about migraine’s history to emerge in the first half of the century. I begin by examining Sir Lauder Brunton’s proposal, dating from 1902, that trepanning had been an ancient treatment for migraine. The chapter concludes with the case of Anne Conway, another retrospectively diagnosed sufferer, whose migraine label dates from the 1930s. Physicians have often been tempted by the possibility of diagnosing historical figures with named modern conditions, using clues gleaned through the interpretation of texts, artifacts, images, and commentary. Was King George III’s

madness actually porphyria? Did Nietzsche have syphilis? Were Vincent Van Gogh's illnesses and suicide caused by epilepsy, neurosyphilis, bipolar disorder, schizophrenia, or the effects of absinthe? Since the eighteenth century, a variety of disorders—including madness, tertiary syphilis, vertigo, Ménière's disease, meningitis, dementia, aphasia, or stroke—have all been proposed as the cause of author Jonathan Swift's cognitive decline.⁵ Historians, by contrast, have tended to dismiss a technique that seems to reduce the lives and minds of individuals to the expression of disease. Roger Cooter, for example, has disparaged retrospective diagnosis as "inherently condescending."⁶ A good example of what's at stake is the discussion of whether women in the Middle Ages can be said to have had anorexia. Medieval historian Caroline Walker Bynum has criticized any assumption that we can apply secular or medical explanations to behavior previously regarded as religious. She explains that a number of medieval paradigms existed for not eating.⁷ Other historians have pointed out that the validity of any diagnosis depends on which modern definition of an illness is chosen. I am not particularly concerned with whether or not Hildegard or Conway had migraine by any modern definition. Rather, I am interested in the role these stories have played in the creation of a particular way of thinking about migraine in the twentieth century.

It is no coincidence that all three of the stories considered in this chapter (trepanning, Hildegard, and Anne Conway) emerged in the first decades of the twentieth century. Historian Sally Shuttleworth has argued that medical writers have often used clinical legends for their own ends. When endowed with the authority of a professional diagnosis, these historical stories become transformed into cases.⁸ Hildegard of Bingen's and Anne Conway's migraines are good examples of this phenomenon in practice. By examining how these three very common narratives in migraine's history first emerged, and showing the links between the three cases, this chapter illuminates the power of historical accounts to provide a grounding for uncertain medical knowledge. Moreover, they illustrate how influential such stories can be, particularly once they become detached from the sometimes tenuous evidence and contexts in which they were created.

Trepanning

If there is one stock stereotype in the history of migraine, it is that trepanning is one of the most ancient and enduring treatments for migraine. The word "trepanation" comes from the Greek *trypanon*, meaning "a borer." The word "trephine" dates from the seventeenth century and comes from the Latin

tres (three) and *finis* (ends). Both denote the technique of removing bone by scraping, sawing, drilling, or chiseling.⁹ The earliest known trepanned skulls date from around 10,000 BCE, in North Africa. There are accounts of the technique of drilling holes into skulls as a therapeutic measure in the Hippocratic corpus, when it was used mostly in cases of fracture, as well as for epilepsy or paralysis. In the second century, Galen also wrote of his experiments with trepanation on animals in his clinical studies.¹⁰ But in general, the reasons for trepanning remain unknown, and there is a distinct lack of definite examples, particularly in relation to migraine. A fifteenth-century Ottoman source suggests that physicians may have treated chronic migraine surgically, by sectioning the superficial temporal artery, but this certainly does not imply trepanation.¹¹ While some neurologists have suggested that there is evidence “trephination was performed . . . as late as the seventeenth century,” in his *London Practice of Physick*, published in 1685, Thomas Willis stated quite clearly that although William Harvey had suggested it, actually opening the skull with a “trepan iron” had been “tried as yet by none.”¹² There is, however, one known example from the seventeenth century. A barber surgeon, Wilhelm Fabry von Hilden, used trepanation for chronic headache and as a treatment for depressed fractures, but recent authors have acknowledged that there is little evidence to suggest that trepanning has been carried out for migraine.¹³ So where did this persistent idea come from?

In 1902, the *Journal of Mental Science* published a lecture by Sir Thomas Lauder Brunton, physician to St. Bartholomew’s Hospital in London. He was well known for his work on pharmacology.¹⁴ Brunton’s lecture on visual and sensory perception was an eclectic mix of ocular and neurological theory, armchair anthropology, excitement about the potential of wireless telegraphy, and interest in the organic and pharmacological causes of defective vision. In it, he discussed premonitions, telepathy, hypnotism, and hallucinations before moving on to epileptic and migrainous aura. Brunton believed migraine was the result of both arterial contraction and dilatation, a theory that could account for the varied phenomena of migraine if the arterial spasms extended far enough down the artery to affect the centers for hearing, taste, smell, and vision.¹⁵ One of Brunton’s proposals was that superstitious visions of fairies “were nothing more than the coloured zigzags of migraine modified by imagination,” and, in some cases, by an abnormal condition of the eye. That these fairy sightings were so often accompanied by the jingling of bells, he elaborated, was further evidence of nerve center stimulation causing auditory hallucinations. Adding some amateur ethnography into the discussion, Brunton

went on to suggest that sick headaches were perhaps more frequent "amongst highly sensitive members of civilised communities, but it is probable that they have existed at all times and amongst all peoples, and wherever they have been present they may have led to visions."¹⁶

This observation led Brunton to his next suggestion: the openings bored into Stone Age skulls when the person was alive had been made during episodes of migraine. Paul Broca, a French physician, surgeon, and anthropologist, caused considerable excitement during the 1870s when he confirmed that ancient skulls recently discovered in Peru and France had been opened surgically during life, and that those individuals had survived long enough for the bone to begin to heal. According to Broca, the procedure might have been performed during childhood for some religious or social reason. He theorized, on the basis that Neolithic peoples could not have had any real understanding of the brain, that these skulls had been opened in order to release evil spirits.¹⁷ Thus it was only a small leap of imagination for Brunton to suggest that these surgeries had been undertaken to cure migraine. "To any sufferer from sick headache the first idea that suggests itself is that the holes were made at the request of the sufferers in order to 'let the headache out,'" Brunton observed, "for when the pain of headache becomes almost unbearably severe, an instinctive desire sometimes arises either to strike the place violently in the hope of relieving the pain, or to wish that some operation could be done to remove the pain." In some ways, trepanning *does* seem an entirely logical response to the intense pain of migraine headache. As Andrew Levy notes: "It is the right external drama, proportionate to the drama inside. . . . The migraining head wants to be cut open; it longs to be cut open."¹⁸ But apart from referring to French surgeon Just Lucas-Champonnière's 1878 study of trepanation, which claimed that some South Sea islanders still performed this procedure, Brunton's conjecture about trepanning for migraine was as entirely speculative as his thoughts on fairies: the product of a heady mix of amateur anthropology, medical antiquarianism, post-Darwinian racial theorizing, emergent knowledge about the brain, and fascination with the prospect of modern cranial surgery. Nevertheless, his theory soon gained a life of its own.

By 1913, William Osler was stating as fact that trepanation operations had been used "for epilepsy, infantile convulsions, headache, and various cerebral diseases believed to be caused by confined demons."¹⁹ By the 1930s, the specific association of trepanning with migraine had become well established. In an article in *The Lancet*, T. Wilson Parry reasoned that the large numbers of

trephined skulls found throughout France could not all be accounted for by epilepsy. He therefore proposed that the procedure had become “instituted as a rite for the casting out of other devils.” According to Parry, the next class of demons to be tackled would be disorders with “exasperating” head-symptoms, including “persistent chronic headache, migraine, chronic neuralgia with acute exacerbations, alarming attacks of giddiness, with or without singing in the ears, and distracting noises of the head.”²⁰ From these almost entirely unsubstantiated hypotheses, the notion of trepanning for migraine has become so commonly accepted that it now is one of the few things many people think they know about migraine’s history. It is somewhat ironic, as we will see in the next chapter, that the only substantial evidence we *do* actually have of surgeons cutting holes in skulls for migraine comes from the twentieth century.

Still, we need to return to Brunton, because his historical musings did not end with trepanation. He went on to compare the “striking similarity in form” of the long zigzag lines of people in some of Gustav Doré’s famous illustrations for Dante’s *Inferno* to Hubert Airy’s illustration of scintillating scotoma. Brunton’s article included Airy’s diagrams of his transient teichopsia, recycling this imagery for a new generation, three decades after their initial publication. Significantly, however, Brunton was not only reaffirming the value of Airy’s image as an accurate depiction of migraine aura, but also using it as a standard with which to retrospectively diagnose migraine as the inspiration behind a work of art. Airy’s image now had a new authority. Rather than being a representation of one person’s subjective experience, it had become a tool for diagnosis. This proved to be a significant shift.

Diagnosing Hildegard

Hildegard of Bingen, born to a wealthy Rhineland family as the youngest of ten children, had been dedicated to a religious life by her parents, a common practice during the medieval period. In 1112, at age fourteen, she joined the community at Disibodenberg, along with Jutta, the daughter of another wealthy family, who was six years her senior. From a very early age, Hildegard had experienced waking visions and what she referred to as “so great a light that her soul trembled,” but she did not know how to fully describe her experiences. When she was in her early forties, after her tutor Jutta’s death, “the great pressure” of these pains propelled Hildegard to explain her visions in writing. Through long periods of illness and self-doubt, Hildegard worked for a decade on the text that would become *Scivias*, a staunchly theological work combining ethics, biblical commentary, history, and cosmology with

the record of her prophetic waking visions. In 1148, she received papal approval to continue writing—the only woman of her time to be granted this authority. *Scivias* was completed in 1151, having been further delayed by Hildegard's purchase of land at Rupertsberg to found her own convent. In the following years, she attracted widespread fame as a celebrated visionary, preacher, and reformer.²¹

Let us now jump forward to the Wiesbaden library in 1913, where Charles Singer was utterly captivated by the images in *Scivias*. He enthusiastically shared his discovery with his friend, Swiss physician and historian Arnold Klebs, who wrote back to him in the summer of 1913: "I was very glad to have the chance to see those beautiful reproductions of the Hildegard manuscripts . . . and the more I think about it the more I become convinced that you have discovered an eminently interesting subject." Three weeks later, Klebs wrote again, reminding Singer that he was anxious to receive a set of Singer's photographs of the *Scivias* images.²² Singer returned to England and presented his argument that Hildegard had been a sufferer of migraine to the Historical Section of the Royal Society of Medicine in November 1913. In his talk, he showed colored reproductions of the *Scivias* manuscript's illuminations. One member of the audience, Dr. Richard Hingston Fox, spoke as a sufferer of migraine himself and felt Singer had proven his case. Fox also suggested to Singer that "the blue colours in the pictures were as important as the red, both these hues, as well as others, being characteristic of migrainous spectra."²³

Singer's ideas about Hildegard brought him professional recognition. William Osler, a supporter of trepanation theories and, by now, Regius Professor of Medicine at Oxford University, urged Singer to publish his research. In 1914, he invited Singer to take up the Philip Walker Studentship in Pathology at Oxford. From then on, Singer was able to devote virtually all of his time to the history of medicine and science.²⁴ In June 1914, Charles and his wife Dorothea returned to Germany to consult the *Scivias* manuscript once again. By late July, as political tensions with France grew, travelers checks could no longer be paid in German currency. The Singers quickly left for Holland, and Charles described "a most trying journey across the line of German mobilisation" with a small party of English citizens and Americans. With little money, the couple had been forced to abandon their luggage. Singer's bags had contained the only copy of his essay about the Hildegard manuscript. So, after he arrived back in England, Singer rewrote the article from memory. "I rather think I improved it," he later commented.²⁵

Singer's rewritten article, "The Scientific Views and Visions of Saint Hilde-

gard (1098–1880),” was finally published in 1917 as the first chapter of his edited collection, *Studies in the History and Method of Science*. His theory about the migrainous, pathological basis for Hildegard’s religious visions constituted only a four-page coda to a fifty-five-page chapter devoted, in the main, to explaining Hildegard’s ideas on scientific subjects, including the structure of the universe, the microcosm and macrocosm, anatomy, physiology, birth, death, and the soul. Singer argued that Hildegard’s writings about her religious visions, which she experienced “neither in sleep, nor in dream, nor in madness. . . . But wakeful, alert,” provided further evidence for his diagnosis. It seemed clear to Singer that Hildegard’s repeated complete recoveries, her prolific activity between attacks, and her long life indicated migraine. “In the ‘more typical’ of her visions,” he wrote, “the medical reader or the sufferer from migraine will, we think, easily recognise the symptoms of scintillating scotoma.”²⁶

A decade after Brunton had used Airy to point out the migrainous features of Doré’s illustrations for Dante’s *Inferno* in 1861, it was not just the aesthetic similarity between the *Scivias* illuminations and Airy’s diagrams that would have attracted Singer. Wrapped up in the authority of Airy’s diagrams, as we have already seen, was the strong association of migrainous visions with genius, scientific vision, and the intensity of (men’s) intellectual work. Like many of his peers, Singer believed history played a meaningful role in explicating the very nature of medicine and science, and, by taking ideas out of their contemporaneous religious milieu, they could be secularized as science. Singer had developed a firm belief in the early chronology of scientific development and insisted that the past should be interpreted in the light of present knowledge.²⁷ This was exactly what he did in diagnosing Hildegard’s migraine. Compared to the “dark degradation” of her twelfth-century contemporaries, Singer believed Hildegard was important because she was beginning to approach a rational explanation of the world. He promised his readers that if they could look past the “bizarre and visionary form” in which she presented her theory of the essential similarity of macrocosm and microcosm, they would find a systematic and skillful elaboration of a scientific philosophy. Minus its religious underpinnings, Singer believed Hildegard’s was a commonsense approach that gave meaning to the facts of nature.²⁸ His migraine diagnosis was crucial to this transformation, by retrospectively endowing the abbess with a disorder that had become accepted in late-Victorian expectations of the physical and mental constitution of a scientist. Using his medical knowledge to interpret the unusual patterns in Hildegard’s religious imagery as the mani-

festations of a neurological disorder enabled Singer to sideline Hildegard's theology and replace it with science as the basis for her philosophy of the world. In effect, Singer was using migraine aura to induct Hildegard into a select, and very eminent, group of men who had (accurately) observed and drawn their visions. Hildegard had earned a place in Singer's broader project of identifying a story of progress from the superstitious darkness of the Middle Ages to the light and reason of modern science. For Singer, such a presentation was an urgent exercise in scientific humanism, a means of addressing the problems of his own age, which seemed to be experimenting dangerously with rampant scientific and technological progress, as well as with democracy.²⁹

Singer published a second version of his Hildegard commentary in 1928, in a collection of essays that laid out his by now fully formed theory of the history of scientific progress. *From Magic to Science* traced the collapse of ancient science into the "swamp of magic," as well as the first attempts to recover "from that hideous slough." Hildegard represented the moment when science left the Dark Ages and the dawn of modernity had begun. The 1928 version of his earlier article included new captions for the colored plates, which confidently highlighted the migrainous features of the imagery to readers.³⁰

In the years that followed, readers of Singer's work identified with his depiction of Hildegard as a neurologically troubled genius. In 1932, Lieutenant Colonel R. H. Elliott delivered a lecture to the Medical Society of London with the title "Migraine and Mysticism." Dismissing Hildegard's science as "crude," he nevertheless took Singer's diagnosis as medical fact, referring to Hildegard as "a woman of an extraordinarily active and original mind . . . and with a marvellous ability for depicting the numerous sensations to which her migraine gave rise." What particularly interested Elliott about Hildegard, however, was the effect the *Scivias* imagery had on his own patients, who recognized "without hesitation features of their own migraine attacks," even though her drawings and paintings were nearly eight centuries old. The golden light and the bluish-white fortification patterns were "immediately recognised by any patient who sees these phenomena today." His patients' responses left Elliott in no doubt that Hildegard herself had painted the miniatures. In image after image, Elliott picked out the stars, zigzags, rotating circles, wavy lines, and areas of darkness as confirmation of the abbess's migrainous life. The connection, moreover, confirmed the social and cultural status of his patients. Those who experienced the richest of symptoms, he suggested, were the "clever intellectual people endowed with the creative type of mind." In Hildegard, Elliott saw "an extraordinary example" of this. Warming enthusiastically

to his theme, and interspersing it with observations from encounters with his own migraine patients, Elliott went on to suggest that Moses, Jeremiah, Ezekiel, Daniel, Paul of Tarsus, St. John the Divine, and Zoroaster could all have been diagnosed as migraine sufferers, on the basis of their religious visions.³¹ Reading Elliott's published lecture now, it is difficult not to dismiss his enthusiastic diagnosis of a swathe of biblical and religious figures as condescending, if not entirely ridiculous, but his claims illustrate two important points. First, Elliott showed how the idea of migraine as a disorder characterized by aura, and associated with creativity, intellect, and visual disturbance, had become commonly accepted since the 1870s. For Elliott, the effects of aura were *the* defining characteristic of the disease. Second, Elliott demonstrated how a sense of history had become part of his clinical encounters. Hildegard's images seemed to speak across the centuries and made what was, in the 1930s, a very recent understanding of migraine appear timeless.

Despite Elliott's enthusiasm, and the reprinting of Singer's article in 1928 and again in 1958, the idea of Hildegard's migraine faded as physicians interested in functional nervous disorders turned to examining the physical and emotional effects of wars. Medical theories about migraine fragmented as researchers suggested a whole host of roles for pituitary swelling, brain swelling, allergies, endocrine organs, psychology, and, in the 1940s, the vascular system. Then, in the late 1960s, a young neurologist, Oliver Sacks, was inspired to write a new book about migraine (taking just nine days to do so) after reading Edward Liveing's *On Megrim*. Sacks was entirely convinced by Singer's argument, agreeing that the *Scivias* images were "indisputably migrainous." Yet he went further than Singer, reducing the abbess's allegorical interpretation of her ecstatic inspiration to an entirely physiological process. Hildegard had simply experienced "a shower of phosphenes in transit across the visual field, their passage being succeeded by a negative scotoma."³²

Sacks's discussion of Hildegard concluded the chapter in which he argued that although aura lay at the very heart of migraine, it had not received sufficient attention since Liveing's work in the 1870s.³³ Sacks did not dismiss vascular changes as an explanation for the cause of migraine headaches, but he argued that this theory did "nothing to explain the origin of migraine *attacks*."³⁴ Sacks's championing of Singer's ideas about Hildegard's migraine used history to stake a claim for the authority of neurology to account for migraine at a moment of real flux in the medical consensus, when vascular theories gave way to neurological ones (to which we will return in the next chapter). Sacks also used a black-and-white line drawing, based on the *Scivias* minia-

ture of "The Heavenly City," as the book's frontispiece for every edition, with a caption explaining that the figure is "a reconstruction from several versions of migrainous origin." Although revised over time, the book's opening paragraphs also consistently emphasized this long history, boldly stating that none of the chief features, phenomena, experiences, and triggers of migraine had changed in two thousand years.³⁵ Hildegard's apparently timeless migraine experience, and the recognition of aura in her visions, anchored a new neurological model of migraine in a very long history.

Hildegard's Migraine and Medieval History

In her own words about her illness, Hildegard described her eyes as "so afflicted with a clouding over that I was unable to see any light," and of herself as being "so pressed down by the weight of my body that I could not raise myself. . . . So I lay there, all day and all night overwhelmed by these intense pains." She also described how God allowed "excruciating airs" to course through her whole body, and how the "marrow in my bones dried up so much it was as if my soul must be released from the body."³⁶ We can be sure that Hildegard would not have recognized the neurological formulation of migraine with which she has been retrospectively endowed. Instead, Hildegard saw her illness as a divine punishment from God. This is not to say, however, that Hildegard did not have an understanding of emigranea. As we have already seen in chapter 2, some of the most vivid expressions of medieval humoral ideas about it can be found in her *Causae et Curae*.³⁷

Singer's theory concerning Hildegard, as revived by Sacks, has posed a challenge for medieval historians. For some, the authority of a medical diagnosis simply established Hildegard's migraine as a clinical fact. For example, in her 2010 study of pain in medieval culture, Esther Cohen talks of Hildegard taking to her bed "with violent migraines" when her will was crossed, though in the letter to which Cohen refers, Hildegard described "a grievous illness."³⁸ Other medieval historians have been more critical of the diagnosis. In a 1985 article, historian Barbara Newman dismisses the idea that a physiological cause might account for Hildegard's spiritual inspiration, referring to it as a "reductionist error" to be avoided.³⁹ By contrast, Sabina Flanagan, in her 1998 book on Hildegard, believes Oliver Sacks has not gone far enough, since it was possible to identify every illness that Hildegard described as a manifestation of migraine. Furthermore, Flanagan argues, these experiences of illness correlated with Hildegard's production of visionary writings, allowing a better understanding of how the abbess assumed her prophetic role.

Migraine had provided her with “a wonderfully adaptable instrument.”⁴⁰ If, for Flanagan, the diagnosis is a methodological resource in understanding the relationship between Hildegard’s illness and her creativity, for Newman it is a red herring Flanagan uses to protect Hildegard against accusations of charlatanism. On the other hand, Newman asserts that Hildegard’s declarations about her chronic debilitating illnesses needs to be understood in the light of medieval ideas about intense religious experience and feminine incapacity, as well as the hagiographic conventions of the time.⁴¹

Perhaps the strongest supporter of Hildegard’s migraine diagnosis has been art historian Madeline Caviness, the first recent scholar to make a serious case for Hildegard’s role as the designer of the *Scivias* miniatures. Caviness drew on Singer’s migraine thesis, as well as her own experiences of migraine aura, in support of her assertion that Hildegard is “surely as much the author of these pictorial ideas as she is of the words that she also did not physically write.” Caviness’s empathy as a fellow sufferer who recognizes the distinctive jagged-edged and crenelated forms, black clouds, and “tiny light points that make the contours shimmer” is an important element of her rationale. She contends that the visual cues in the *Scivias* illuminations are “the most persuasive arguments for Hildegard’s close personal attention to the execution of the illuminations, since she was the one with migraine and knew these effects at first hand.”⁴² Medieval manuscripts were often produced by trained artists and scribes under instruction from authors. Even if Hildegard did not actually mix the paints or apply the brush for this “deluxe illuminated copy,” Caviness suggests that “the authentic rendition of these visual auras is thus best attributed to Hildegard herself . . . unless we suppose that an illuminator was found to work on the Rupertsberg *Scivias* who also had migraine.” Essentially, Caviness implies that *only* someone who had personally experienced migraine aura could have designed these images. For Caviness, establishing Hildegard’s role as the designer of the illustrations in *Scivias* is crucial, because it constitutes “the last area of Hildegard’s multimedia outpourings that has been denied to her by recent scholars.”⁴³

Neither Caviness’s empathy, nor her art historical expertise in arguing for the inseparability of image and text in *Scivias*, is in question, but understanding the circumstances behind Hildegard’s diagnosis reveals her argument to be a circular one. In order to claim that Hildegard suffered from migraine, Charles Singer had to assume she had an integral role in the production of the illuminations in *Scivias*.⁴⁴ When Caviness applied a migraine argument to support her assertion that Hildegard was directly involved in creating the

Scivias miniatures, the medical evidence already included this integral assumption. Independently, both the physiological element (Hildegard's manuscript illustrations are evidence of migraine) and the historical element (Hildegard was responsible for the images) in this argument are plausible, but if we have to assume that Hildegard had direct responsibility for the illuminations in order for the migraine diagnosis to make sense, we can't then say that *because* Hildegard had migraine, she must have been the illustrator.

Nevertheless, as Caviness's work reminds us, we also cannot (and should not) deny that since Singer's first presentations of his ideas about Hildegard in 1913, patients have recognized their own experiences of migraine aura in the *Scivias* miniatures. In May 2012, Pope Benedict XVI formally canonized Hildegard. In October of the same year, he proclaimed her a Doctor of the Church, in recognition of her teachings. Hildegard is only the fourth woman to receive this honor. Her life has also been the subject of a feature film, and, in Germany, a system of alternative holistic healing bears her name. Given her reputation, it is perhaps no surprise that contributors to an online forum recently discussed whether Hildegard would make a good patron saint of migraine. As one member has commented: "I'm sure we can use all the saints we can get. I don't think we found an 'official' migraine saint. I didn't check the archives but I think some of us just decided that Hildegard would be a good choice."⁴⁵ If we wholly consign her diagnosis to history, we also deny the real meaning people continue to derive from the association of Hildegard with migraine.

Anne Conway

For over twenty years, a seventeenth-century noblewoman experienced pain on one side, then the other, and, often, over the whole of her head for two, three, or four days at a time. In his famous discourse on diseases of the brain and nerves, published in 1664, celebrated physician Thomas Willis described how this anonymous woman could not bear "light, speaking, noise, or of any motion, sitting upright in her Bed, the Chamber made dark, she would talk to no body, nor take any sleep, or sustenance."⁴⁶ As the attack began to wane, she would lie down in a "heavy and disturbed sleep," from which she awoke feeling better. The humors flowing in the meninges of the woman's brain, it seemed to Willis, had gripped her head with an "habitual and indelible vice."

Anne Conway's migraine diagnosis first appeared in a paper by Sir Gilbert Roy Owen, following the publication of Marjory Hope Nicolson's edited collection of Conway's letters in 1930, which also revealed her identity as Willis's

patient. Owen was keen to determine what had ailed Conway so strongly that she had needed to consult such an “imposing array” of physicians as William Harvey, Thomas Willis, Robert Boyle, Kenelm Digby, Jan Baptist van Helmont, and Valentine Greatrakes. Although he accepted that any modern medical suggestions would come “too late to aid” Conway, Owen had asked the opinion of famous American neurosurgeon Harvey Cushing, who initially favored a “pituitary origin” for her disease. The suggestion that Conway had migraine came later and seems to have been Cushing’s way of sitting on the fence. He changed his original pronouncement after seeing further evidence and explained that a diagnosis of migraine “covered a multitude of sins.” Indeed, Cushing’s was not the only suggestion for what might have been Conway’s problem. Ernest Sachs ruled out brain tumor, and Nicolson herself thought of hyperthyroidism. Others had suggested syphilis, though this was contradicted by Willis’s account. Neurologist Carl Rand was tempted to say Conway exhibited the effects of childhood meningitis, though he admitted this might have been based on an old wives’ tale. For his part, Owen seems not to have made a firm decision about the cause of the “paines, violent and continuall” that dogged her to the end of her life.⁴⁷

Despite the equivocation and uncertainty in Owen’s article, modern neurologists and literary scholars seized on Conway’s possible migraine as medical fact. Her rise to prominence as a celebrated migraineur is interwoven with the status Willis, her physician, has gained as a founding father in neurological history for his work on cerebral blood flow. He was also the first person to use the word “neurologie” in print.⁴⁸ In Edward Liveing’s eyes, Willis’s comment that head pain was sometimes an “innate and hereditary” debility, often “delivered from the parents to the children,” cemented his position as an early authority on megrim.⁴⁹ Yet neither Willis, nor Conway, made any connection between her illness and migraine. For Willis, the only real significance of the term hemicrania, which he only used once in his text (poet Samuel Pordage, who translated Willis’s *De Anima Brutorum* from Latin into English in 1683, rendered Willis’s “hemicraniam” as “megrim”), was to identify the location of pain if it was in the side, front, or back of the head.⁵⁰ In her own writing, Conway described how her “old distemper” had greatly increased after surviving smallpox. Nevertheless, Willis’s vivid account of this “invincible and permanent” illness has come to be seen as a classic early description of chronic migraine, and the noblewoman has become one of the most well-known of history’s migraine sufferers.⁵¹ Modern confidence that Willis’s account is accurate enough to enable Conway’s symptoms to be diag-

nosed is both reinforced by, and a confirmation of, his anachronistically endowed status as a neurological pioneer and authority.

For Willis, headaches were a very blood-filled affair. He did deal directly with head pain in the treatise containing Conway's case, where he explained how humors within the body pushed, pulled, and watered the nervous fibers, "irritating them into painful corrugations." He believed that increased blood flow across the skull was responsible for headache pain, which could be light or vehement, sharp or dull, and either short, continual, or intermittent. Its approaches might be "periodical and exact" or, at other times, "wandering and uncertain." Blood poured onto the sensitive membranes of the brain by "many and greater Arteries," bringing "hurt to the Meninges" when the blood, or serum, passed through all the arteries at once. His observations about the flow of cranial blood were a significant precursor to the vascular theories of migraine that became so important from the nineteenth century on.

In common with her contemporaries, Conway tried every possible treatment, although in vain. She had consulted English doctors, traveled to Ireland and France, taken the air in several countries, and purchased medicines from the "Learned and the unlearned, from Quacks, and old Women." She had ingested dangerous mercurial powders, visited baths, and drunk spa waters. She frequently had her blood let, including once from an artery. Yet "the contumacious and rebellious Disease, refused to be tamed, being deaf to the charms of every Medicine."⁵² If we are to give Conway a role in the history of migraine, we should do so by witnessing the vast range of treatments she tried and her commitment to a quest for relief.

Hildegard of Bingen and Anne Conway have been seen as women whose intellectual powers seem to transcend the constraints of their own times. Hildegard would have been "extraordinary in any age," Barbara Newman has argued, but for a woman of the twelfth century, her "achievements baffle thought, marking her as a figure so exceptional that posterity has found it hard to take her measure."⁵³ Both Conway and Hildegard sometimes acted as if they were men, and their modern migraine diagnoses serve to enhance this sense that there was something exceptional going on in their lives and their minds. The men in Conway's life, Andrew Levy suggests, were aware that "the mix of Conway's acumen with her distress was what made her extraordinary." He goes further still, identifying a "migrainy metaphysics" to her posthumously published writings.⁵⁴

Conway and Hildegard are some of the best known in a long list of famous historical figures who have been retrospectively diagnosed with migraine in

the twentieth century. Once released into the wild, these diagnoses, at first tentative, speculative, or based on a particular narrow reading of evidence, soon become accepted as truth. Another famous case, concerning artist Pablo Picasso, is a salutary lesson in the perils of treating retrospective diagnosis as a parlor game. In 2001, two Dutch physicians proposed that Picasso could have had migraine aura without headache, based on the visual appearance of some of his artwork, notably in the vertically fragmented depictions of faces.⁵⁵ A decade later they admitted, with some embarrassment, that their suggestion had not been based on research in biographies, letters, or memoirs of either Picasso or his contemporaries.⁵⁶ Nevertheless, the theory had spread, and their retraction was too late.

For Lewis Carroll, the question has not been so much whether he was afflicted with migraine himself—diary entries show that he did—but whether his experience directly inspired his novel about Alice’s adventures in Wonderland. Dr. John Todd, a British psychiatrist, was the first to make this suggestion in 1955. Although neurologist Joseph N. Blau has since implored that this piece of neuromythology be laid to rest, the popularity of the link between migraine and Alice grew.⁵⁷ In their 1999 article, Klaus Podoll and Derek Robinson reveal a previously unseen sketch from Carroll’s family magazine, *Mischmasch*, showing the figure of a standing man with parts of the right-hand side of his body missing, and a diary entry from 1856, which recorded Carroll consulting eminent ophthalmologist William Bowman about his eye problems. If Carroll had experienced aura as early as the 1850s, as this evidence seems to suggest, then Podoll and Robinson believe the thesis that migraine was the inspiration for *Alice in Wonderland* is strengthened once again.⁵⁸

Literary scholar Andrew Levy has reflected on the personal significance of knowledge that famous sufferers such as Anne Conway, Charles Darwin, Ulysses S Grant, Virginia Woolf, Pablo Picasso, and Rudyard Kipling all succeeded in spite—perhaps, even, *because*—of their struggles with migraine. They have given him a sense of validation, a community to help guide him through his own pain, and a sense of “metaphysical stability.” Whether some of these “old practitioners,” as Levy calls them, actually had migraine, either in their terms or ours, was less important than the recognition, pattern, or clarity he finds in their examples. Levy states that “playing detective” with Lewis Carroll’s biographical materials is an entirely unnecessary pursuit, “rendered irrelevant” by simply reading *Alice in Wonderland*, a book he considers possibly the best literary representation of migraine in history. For Levy, what matters is that men and women like Hildegard, Picasso, and Car-

roll "all went down the same deep well that the migraine sufferer reaches." It can be tempting to think that there might be some profound link between migraine and creativity, but, as Levy acknowledges, the numbers of famous migraineurs simply do not add up. We cannot see the "gifted men and women who never got a chance to nurse those gifts because they were too occupied to do anything but nurse their pain."⁵⁹ As novelist Mary Sharratt points out quite bluntly, "the migraine sufferers I know in my own life regrettably report that they've never beheld wondrous visions."⁶⁰

Conclusion

"Of all the common and much-dreaded nervous diseases we recognise," J. M. Aikin lamented in the *Journal of the American Medical Association* in 1902, "none are less perfectly understood than migraine; nor is there any other nervous disorder which is so disastrous to the physician's ability for treatment . . . it is easy to say what [migraine] is not, but difficult to define what it is."⁶¹ The casual way in which Singer could choose a diagnosis for Hildegard, or Owen and his colleagues could speculate about Conway, is in stark contrast to the much more difficult—and consequential—decisions physicians faced in their everyday practice. Away from the pursuit of historical cases, the first decades of the twentieth century were characterized by physicians' pessimism about the possibilities for curing migraine, their frustrating interactions with the real patients who sat in their offices, and their inability to explain the disease's causes or mechanisms, not to mention the ongoing disagreement as to what migraine even was when faced with a multiplicity of idiosyncratic symptoms.

Had Hildegard von Bingen traveled across the centuries and been able to visit a physician in the 1930s, R. H. Elliott confidently declared that "she would have consulted her doctor and have been sent to an ophthalmic surgeon."⁶² Reflecting on his own long career from the vantage point of the 1980s, Macdonald Critchley (who died in 1997) remembered the "inordinate" emphasis that had been placed on the visual factors of migraine during the 1920s and early 1930s.⁶³ In his 1924 Savill lecture, Arthur Frederick Hurst identified an ocular origin for the majority of migraine cases, and he summarily dismissed other theories. If a toxic idiopathy was present, he had never seen any evidence that it provoked attacks; anaphylactic theories were attractive but "extravagant"; glandular theories, "purely speculative." Hurst believed even very small errors of refraction were able to produce migraine, especially in highly strung, clever people with "a very irritable migraine storm centre." Drugs such

as luminal and bromide might have some effect on migraine, but they would simply not be required if one's eyesight was corrected.⁶⁴

A discussion held at the Royal Society of Medicine in 1927 demonstrates that basic questions—what migraine was, what symptoms should be included in the category, how it related to other disorders, and how to treat it—all remained unanswered. Leading the debate, Dr. C. P. Symonds proposed that migraine needed a clearer definition, in order to facilitate methodical investigation. It might be convenient, in a clinical context, to include headaches that resulted from disordered nasal sinuses or headaches that followed injuries to the head under the category of migraine, but for the purposes of scientific investigation, Symonds proposed that *only* recurrent headaches accompanied by visual or sensory disturbance should be considered. Moreover, these disturbances must be short lived, as well as followed by a complete recovery. How migraine headache *felt* was also important: it should be “throbbing, bursting, or splitting” in character. These clinical characteristics were so well defined, Symonds explained, that using them would ensure a correct diagnosis. By this logic, Symonds excluded sick headache, it being what he considered an incomplete migraine. No doubt drawing murmurs of surprise from some of his audience, Symonds proposed that headaches caused by eyestrain also did not count as migraine.⁶⁵

Symonds's audience had plenty to say about his definition. Dr. A. F. Hurst insisted that eyestrain was the most important and common factor in migraine, by virtue of its increasing the constitutional and, often, inherited irritability of the central nervous system. He also accepted that fatigue and toxemias, as well as endocrine activity during menstruation, increased a person's likelihood of experiencing migraine attacks, but he urged anyone who thought eyestrain was unimportant “to find another oculist, or, if necessary, a series of oculists, to examine their migrainous patients.”⁶⁶ Dr. J. Kingston Barton rejected this insistence on the importance of eyestrain and thought that the old authors had been correct when they grouped migraine, asthma, and skin affections together with inherited gout. Mr. Herbert Nott and Dr. Agnes Savill supported Symonds's proposal of “a floating toxin in the blood” as migraine's probable cause. Dr. J. A. Ryle changed the subject again, asking why migraine and other “explosive” disorders such as asthma, epilepsy, and gout were incurable. Dr. W. R. Reynell suggested that only when the problem of epilepsy was solved would they know more about migraine. Somewhat wryly, Dr. F. W. Collingwood observed that as he had been subject to migraine his entire life, his worst attacks had followed “debates in which controversial questions

have arisen." He might well have regretted attending that particular meeting of the Royal Society.⁶⁷

Apart from the profound disagreement about migraine's causes, Symonds's comment about clinical convenience is a revealing hint that physicians were using migraine as a diagnosis to placate patients.⁶⁸ One of the unfortunate results of seeing migraine as a label of convenience, rather than of accuracy—or, in the words of Harvey Cushing, as a diagnosis covering "a multitude of sins"—was to compound what already were disputed understandings of migraine's identity and destabilize any conviction that it was a legitimate—or even a real—illness. Writing in the *British Medical Journal* in 1927, E. Miles Atkinson presented a vivid picture of how a lack of clarity and a proliferation of theories about migraine affected patients and their relations with medical professionals:

Every medical man frequently has to deal with the type of case to which I refer. Some of the patients suffer almost constantly, and look ill, run down, and toxæmic; others have violent attacks of headache with periods of freedom . . . some suffer in silence as far as any reference to a medical man is concerned; others seek remedies everywhere. If they have sought medical advice they will probably have been investigated for bowel trouble, menstrual disorders, errors of refraction; and possible sources of toxæmia such as septic teeth.

For his part, Atkinson believed frontal sinus disease was the cause of headache, and he again emphasized how crucial the presence of aura was for an accurate diagnosis. A pain might be a true hemicrania (i.e., a one-sided headache), but if the "typical battlemented spectra of migraine are absent," it only mimicked what he considered to be migraine.⁶⁹ Visual experiences defined migraine, because they were the only symptom that gave any certainty to a diagnosis.

Neither Hildegard of Bingen nor Anne Conway could visit an early twentieth-century physician's office, or cause the kinds of diagnostic difficulties that occurred when patients had inconvenient symptoms, such as nausea or pain. Singer and Owen were free to highlight whichever elements of the available evidence supported their theories and ignore those that did not. In 1913, Hildegard's diagnosis was contingent on the understanding that aura was an essential feature of migraine. By 1937, Conway's diagnosis was even less certain. As Marjorie Lorch has noted, retrospective pronouncements such as these reveal something of how "different signs and symptoms were given status and significance by different writers at different historical periods."⁷⁰ The

case of Hildegard is a prime illustration of how early twentieth-century clinicians seized on the promise of aura to deliver a tangible sense of medical certainty. When their patients could say “I see that!” their migraine could be diagnosed quickly and easily, regardless of the other symptoms they might experience. The culturally, socially, and medically elevated status of migraine aura emerging from the late nineteenth and early twentieth centuries would continue to shape ideas about migraine and clinical research throughout the remainder of the twentieth century.

That Hildegard’s and Conway’s migraines have become historical fact illustrates an interesting paradox: historical cases or diagnoses can gain authority the more they become detached from the contexts and beliefs that were needed to support and verify the diagnosis in the first place.⁷¹ As they have become established instances of neuromythology, Hildegard and Conway have imbued modern medical concepts with a long historical provenance, giving the impression that there is something permanent and essentially neurological about the disease of migraine. The embrace by professionals of figureheads such as Willis, Conway, and Hildegard needs to be seen as part of a wider process of claiming political and medical authority for neurology.⁷² Hildegard of Bingen, Anne Conway, and trepanation are not just episodes in the history of migraine. Rather, they can be seen as significant stories working to confirm twentieth-century medical knowledge as the pinnacle of a much longer history of progress, rationalism, and enlightenment. It is no coincidence that all of these accounts have their origins in the early twentieth century, a moment characterized by profound professional disagreement and diagnostic uncertainty about migraine’s identity.