
Introduction

So much is human genius limited, by the limits of human nature, that we just know what our five senses teach.

Thomas Sydenham, *Works*, Vol. II, p. 182.

‘Nihil est in intellectu quod non prius in sensu’ runs the old Latin saying. It was a commonplace long before Sydenham reflected on the limits of our senses, or his friend the physician-philosopher John Locke (1632–1704) placed them squarely at the heart of his theory of knowledge. Even St Augustine (354–430), whose *Confessions* fretted about the dangers of the sensual world, repeated the ancient maxim that the organs of sense are ‘the body’s gateways to the mind’. For Augustine, sight ‘is the principal sense by which knowledge is acquired’, sound something to be enthralled by, smell, taste and touch created by God and thereby to be cherished. Man’s highest duty and joy – the love of God – is a kind of internalized sense experience:

But what do I love when I love my God? Not material beauty or beauty of a temporal order; not the brilliance of earthly light, so welcome to our eyes; not the sweet melody of harmony and song; not the fragrance of flowers, perfumes, and spices; not manna or honey; not limbs such as the body delights to embrace. It is not these that I love when I love my God. And yet, when I love him, it is true that I love a light of a certain kind, a voice, a perfume, a food, an embrace; but they are of a kind that I love in my inner self, when my soul is bathed in light that is not bound by space; when it listens to sound that never dies away; when it breathes fragrance that is not borne away on the wind; when it tastes food that is never consumed by the eating; when it clings to an embrace from which it is not severed by fulfilment of desire. This is what I love when I love my God.¹

If Augustine could not describe the love of God without recourse to the senses, it is little wonder that the history of a more mundane subject like medicine is rich with reflections on, and concern with, the body’s gateways. As a practical activity, medicine requires its votaries to rely on their senses to come to diagnostic judgements which in turn dictate therapeutic

recommendations. As members of a learned profession, doctors are forced to ponder on the relationship between sensations and reality. As speculators, observers, or as experimentalists, doctors may seek to understand just how the five senses work. As students they are taught how to use their senses and, detective-like, to interpret the clues they have picked up. As a cultural phenomenon, medicine is portrayed in a variety of ways, and through a variety of subjects, ranging from anatomical preparations to scenes of triumph effected by self-conscious and confident individuals. The history of medicine embraces ample portions of both sense and sensibility.

A volume with the title of the present one could have any of several principal themes: the history of sensory physiology; the development of physical diagnosis; the varieties and aims of medical education; medicine in its cultural manifestations. The essays touch on them all, although sensory physiology as a special subject emerges only tangentially, and that only in its classical formulations.² Rather, through a series of case studies, diagnosis, education, and cultural and anatomical representation predominate. Although the essays are arranged chronologically, two subsidiary themes run through several of them. The first is the traditional preoccupation with the hierarchy of the senses: which is the noblest sense and which the basest, and why? The palm was traditionally given to sight, a decision with which Denis Diderot (1713–84) agreed, as he speculated how differently a race of blind men would conceptualize the world.³ Not for nothing are our eyes near the top of our heads, nearest to heaven and not far away from the other noble sense organ, the ears. There was less consensus over the ordering of the other senses, but St Augustine was not alone in feeling that somehow touch was the most seductive and therefore perhaps the basest. The essay of Elizabeth Sears examines some of the classical reflections on these matters, along with the iconography of the senses and their relation to the castle of the mind. Richard Palmer singles out smell – generally accorded a middle rank in the hierarchy – for closer scrutiny.

Running through many of the essays is a second preoccupation, which might be described as the nature of the castle: how do the faculties of the mind convert the raw data of the senses into something like coherence? Within the medical context, how do reason and judgement work at the bedside? In emphasizing bedside experience, the Hippocratic tradition provided an observational model for medicine which could still be invoked as a living force in early nineteenth-century Paris, when the French capital was the Mecca of the medical world.⁴ Indeed, one recent reading of the whole of medical history has it as the history of tensions between empirical and rationalist traditions, between doctors who value experience and those who bow to authority and (in this particular account) reason.⁵ While the essays in this volume may be more modest in their scope, and maybe even more cautious in their generali-

zations, several of them expose the weight of tradition and focus on the experiential within the context of the written word.

Reason can be described as the sixth sense, and even someone like Elisha Bartlett (1804–55), that ardent exponent of observational facts as the sole hope for medical progress, would have conceded that there was a mind collecting those facts.⁶ Even among enthusiastic empiricists like Bartlett, however, collective experience also counted for much; tradition is inevitable and one of the functions of medical education is to induct the student into the values of one or another philosophy of medicine.

Several of the essays examine aspects of the broad themes of education, tradition and experience. Although Galen may have himself been, as Nutton argues, a medical detective, he was also an inveterate scribbler whose writings provided the touchstone of experience for thirty or forty generations of doctors. Bylebyl and Brockliss look at two episodes in the long history of Galenism. Eighteenth- and early nineteenth-century doctors may have seen the ‘birth of the clinic’ as the contemporary recovery of a historical ideal.⁷ That ideal was Hippocratic rather than Galenic, although this may mean, as Brockliss points out, that there was more than one kind of Galenism, or at the very least, that Galenism could be commandeered into a multitude of services. As part of its bad historical press, Galenism can be seen as the bastion of those who valued reason over experience, authority over the testimony of the senses. In early seventeenth-century Paris, those who wanted to expunge the magical and the occult from medicine, who did not want to believe what they could not see, could also nestle in the wings of Galenism.

On the other hand, to teach ‘Galenism’ was often to teach the Word, even, ironically, in the Renaissance clinic. Bylebyl’s own detective story began with historical claims made in the later age of Hippocratism, with the ‘discovery’ in 1808 by Giovanni Rasori that Giovanni Battista da Monte had taught clinical medicine in the mid-sixteenth century, long before French doctors in the age of Bichat and Laënnec had elevated it to the be-all and end-all of medicine.

On closer scrutiny, however, da Monte can be revealed as running a Renaissance clinic, not a proto-Napoleonic one; as using the bedside to expound the tenets of Galenism. In ways that the historical Galen would have appreciated, this did not mean a disparagement of the senses. On the contrary, da Monte urged his pupils to use their senses to ‘take in those signs which are manifestly apparent, from which you will afterward perceive those things that are hidden within’.

The steps from the individual to the universal were different for da Monte and his successors three centuries later, but, as Susan Lawrence demonstrates, pedagogical rhetoric has continuity as well as change. Her examination of medical teaching and learning in London between about 1750 and 1820 rests on a systematic analysis of a tangible by-product of education – student notes.

In an age when relatively few textbooks existed, and when entrepreneurial teachers were reluctant to publish the contents of their lectures for fear that student numbers would decline, much care was often lavished on the notes, as a permanent record of the student's encounter with the subject. In 1794, French medical reformers wanted their students to 'Read little, see much, do much.'⁸ Independently, London teachers were impressing upon their own students the importance of active engagement with all their senses as they learned to infer the internal diseases from the external appearances.

During the course of the nineteenth century, new methods of visualizing, including photography, and new ways of recording especially the 'graphic method', reinforced traditional reliance on sight, and, as Merriley Borell explores, placed new demands on medical education, as an increasingly powerful science lobby stressed that technology was a permanent feature of both practice and research, and that the new practical physiology could bridge the gap between science and practice, laboratory and clinic.

The meanings and the methods might change, but it is hard to escape the conclusion that creating medical detectives has long been high on the list of educational priorities. Inevitably, this centres around the bedside or consulting room, in the doctor–patient encounter. Several of the essays take aspects of physical diagnosis as their theme, with as much emphasis on the physical as on the diagnosis. Nutton, Jordanova, Nicolson and Reiser present case studies widely separated in time and space, but linked by a common diagnostic thread. Nutton reveals Galen as the rather brash and aggressive character which he undoubtedly was, but also as a shrewd Sherlock Holmes before his time, conscious of Hippocratic precedents but equally aware of his own diagnostic acumen. As a good Holmesian, he could throw all his senses into the chase, but vision remained foremost, as it was of course in the physiognomical tradition, some of whose medical reverberations are considered by Jordanova. While recognizing the subtle interactions between artistic and medical convention within physiognomy, she seeks to extend the conventional reading of physiognomy after Lavater as simply a series of footnotes to him, by contextualizing two medical theses on the subject.

Despite frequent lip-service to sight, hearing – in the form of history-taking, and of listening to the patient's complaint – had (and has) an honourable place in the doctor–patient encounter. With the publication of Laënnec's monograph on mediate auscultation in 1819, new, esoteric demands could be placed on a doctor's hearing. Nicolson's careful study of the introduction of the stethoscope and auscultation into Edinburgh medicine looks at the interplay of cultural tradition and reaction to innovation. John Harley Warner's recent work has already shown how selective the importation of medical knowledge and practice can be.⁹ Nicolson in turn reinforces Warner's insight by scrutinizing the Scottish response to French innovation.

In our own century, technology has not obliterated the central cultural meaning which the stethoscope has come to have for medicine; but technology has immeasurably extended the doctor's senses and threatened, perhaps, the old-fashioned virtues of bedside diagnosis. Reiser's essay dissects two facets of this complicated story: the problems that develop when technological relations compete with and threaten to displace human relations, and the way in which the coming of the machine has placed new demands on the organization of medical institutions and created new hierarchies within the profession.

Physical diagnosis is physical, however, and its emergence as an indispensable feature of modern medicine has produced its own set of issues. In earlier times, doctors looked at tongues and felt pulses, but the doctor–patient encounter would not routinely involve anything more intimate than could be experienced in ordinary social intercourse. When seeing and touching extended to intimate areas of the body, and especially when the patient was female, new social strategies had to be adopted to desexualize a potentially charged situation. Porter's essay exposes aspects of etiquette and convention during the past couple of centuries. Even before the diagnostic ideals of the French made routine the inspection, palpation, percussion and auscultation which every medical student learns, the rise of male-midwifery had generated debate both within the medical establishment and in lay circles more generally. As Porter points out, notions of class as well as sex were at issue; although Queen Victoria had a male accoucheur, her trusted physician Sir James Reid did not know she had an umbilical hernia until after her death.

'Touching' is a loaded word, as both Porter's and Gilman's essays make clear. Gilman opens up the larger questions of the iconography and anthropology of touch, sexuality and disease, as his wide-ranging and provocative essay juxtaposes blackness and the infant Christ, the signs of the zodiac and what it means to be touched by AIDS.

Finally, the iconographic is central to the essays of Sears, Kemp and Brieger. Sears and Kemp bring to their subjects the skills and perspectives of the art historian. Through a consideration of the library of Richard of Fournival, Sears offers a reading of the senses within the classical tradition, and its assimilation by the Christians of a later age. Kemp's concern is more explicitly medical, viz. anatomical illustration from the Renaissance to the eighteenth century, as anatomists and their artists sought to depict structure 'as it really is', while at the same time exploring new media and modes of representation. Some of the high art of the period may be found in anatomical monographs and musings, as Kemp's other work on Leonardo and William Hunter has superbly demonstrated.¹⁰

William Hunter (1718–83) was one of the most enterprising anatomy teachers of the eighteenth century, but he was also a man of culture, a connoisseur who rubbed shoulders with literary and artistic elites (and delivered babies of

royalty and the aristocracy).¹¹ Questions of sensibility and of artistic representation are central to Brieger's essay on two monumental canvasses which depicted two eminent surgeons in late nineteenth-century America. Thomas Eakins's *The Gross Clinic* (1875) and *The Agnew Clinic* (1889) now occupy familiar positions in the heroic iconography of modern medicine. Brieger examines both the circumstances of their composition and reception, and the ways in which 'conservative', or sensitive surgery was a product of post-Listerian surgical practice.

The essays in this volume hardly exhaust the subject. Rather, they demonstrate how inexhaustible it is; at the same time reminding us how central medical concerns can be to many varieties of historical inquiry.

1

Galen at the bedside: the methods of a medical detective

VIVIAN NUTTON

To begin a volume on the five senses in medicine with the Greeks needs no justification. The Western tradition of medical diagnosis depends very largely on principles first enunciated by them over two millennia ago, and it is only the technological revolution of this century that has brought about a substantial change in the methods of diagnosis. Although there were instruments for investigating some of the internal arrangements or malfunctions of the body even in classical antiquity – probes and, occasionally, an elaborate vaginal speculum¹ – what was taking place within the body could, in general, only be deduced from external phenomena, a situation that, in essence, remained true until the nineteenth century. Hence, an understanding of the condition of the sick patient could be gained only through a perception of the external ‘happenings’ – that is the direct translation of the Greek word ‘symptom’ – that, in some way or other, manifested themselves to the observer. How these perceptions were to be interpreted was a matter of considerable controversy among what later became known as the medical sects, but there was universal agreement on the supreme importance for diagnosis of what the doctor could perceive.²

But if this tradition can be traced directly back to the Greeks, it might be thought more appropriate to devote the first pages to the great Hippocrates. After all, it is in the *Epidemics* and in *Prognostic*, texts which were long presumed to have been written by the famous Coan physician himself, that one finds exemplary reports of detailed investigations of symptoms.³ *Prognostic* contains a substantial list of symptoms that the doctor should note and which will enable him both to diagnose the past and to foretell the future course of an illness, both of which were subsumed under the same heading of prognosis.⁴ *Epidemics*, by contrast, does not prescribe for the doctor what he should look

for, or how he should interpret his findings, but is rather, so most Hippocratic scholars are agreed, the record of case notes collected by physicians during visits (*epidemiae*), notes presumably of what they thought most significant.⁵ These notes, of which those in Books I and III are by far the most celebrated, report not only on an individual patient, his temperature, his various excretions, principally of urine and faeces, his movements, sleeplessness or the reverse, his appetite and so on; they also offer a description of the general constitution (*catastasis*) of a particular community over the course of a year, the climatic changes, and the range of diseases present. These notes are a remarkable record of observations (the work *skopein* (look) is frequently used) collected in order that the doctor may be better prepared to foretell the outcome of an illness and, in particular, of critical days, and to know whom and when to treat. It would indeed be tempting to assume, with Galen among others, that the author of *Prognostic* and that of *Epidemics* I and III was one and the same man, the great Hippocrates himself, and that it would thus be possible to see in one tract Hippocrates putting into practice the prescriptions given in another, or, because the order in which the books were written is uncertain, collecting the observations out of which was to spring a textbook on prognosis. But, alas, things are rarely so simple, and the question of the authorship of the *Epidemics* and their relationship to both *Prognostic* and Hippocrates has been hotly debated for almost half a century. To identify precept and practice as coming from the same man may here involve a dangerous circularity of argument.⁶

But there are further arguments in favour of concentrating on Galen as the model for ancient diagnosis rather than Hippocrates. In *Epidemics* I and III it is the information derived from the sense of sight that predominates almost to the exclusion of everything else. The voice of the patient is rarely remarked upon, and the sense of touch is only involved in references to tension of the hypochondrium or to tenderness of the spleen, or in rough descriptions of the heat or coldness of the patient's body.⁷ Unlike the author of *Ancient Medicine*, whose discussion of bodily humours in terms of their sweetness, acidity or saltiness presupposes distinctions by taste, the writer of *Epidemics* I and III makes no use of this category in his descriptions, nor does he refer to the patient's smell.⁸ This concentration on sight and, to a much lesser extent, on sound is repeated in *Prognostic*. Smell is mentioned, albeit briefly, in the sections that deal with pus, urine, faeces and vomit, but there is little attempt to go beyond the broad formulation that a very foetid smell is more indicative of a serious illness than a less pungent odour.⁹ The contrast between the detailed descriptions of the *facies Hippocratica* or of the visible behaviour of the sick man and the transitory allusions to the symptoms that can be distinguished by the other senses is marked indeed. This general conclusion is modified only slightly by a consideration of other Hippocratic texts, and a more detailed

reconstruction of the diagnostic methods of the Hippocratic physician would risk serious error in implying a dubious precision.¹⁰

There is, however, a further reason for concentrating upon Galen. Not only does he provide detailed rules and prescriptions for perceiving illness, but he is also inordinately proud of his own therapies and thus offers a substantial number of his own, generally successful, cases by which one can judge his bedside manner and his fidelity to his own precepts. In short, he sets himself forward as the very model of the modern Hippocratic physician, developing the insights of his great predecessor both practically and theoretically, and he uses his own experiences to exemplify the proper method of healing, the true ‘therapeutic method’.

By Galen’s day, these two words were loaded with meaning. They had been almost appropriated by a group of physicians who flourished in the first two centuries of the Christian era in the Roman Empire, especially in Italy, and who are known in English by the confusing title of Methodists.¹¹ It was their claim that they alone possessed the true method of healing the sick. This consisted in relating a series of observations to one of three bodily conditions: tension, or stricture; laxity; or a combination of the two. Depending on which of these three general conditions was indicated, a contrary treatment was applied accordingly. The recognition of these conditions and the consequent treatment were thus clear, simple and secure. To the Methodist, nothing was easier than relating observation to these ‘causes’ and thence to treatment, or than continuing this process throughout the whole length of a patient’s illness. Such a method of healing, they claimed, might be taught in a mere six months, with assured success.¹²

For Galen and his fellow Hippocratics of the second century, all this was anathema. The sick man and his disease could not be neatly categorized into a trinity of conditions, and, although they too would agree that, once the cause of the disease was located, to find an appropriate remedy was not difficult, they emphasized the hazards involved in linking observation and cause. Above all, Galen, like writers on medicine before him going back to Plato, doubted the utter certainty of diagnosis.¹³ Logic, geometry and scientific method might all bring certainty; but, when faced with an individual patient – or perhaps, in Galenic fashion, one should say an idiosyncratic patient – the doctor’s art was necessarily uncertain, hypothetical, or, to use a Latin and a Greek word, ‘conjectural and stochastic’. The doctor had to take a potshot – the meaning of *στοχάζεσθαι* – at the illness, and his shot might miss the target. For Galen, diagnosis – or as he would say, prognosis – was the most difficult task facing the doctor; for the peculiarities of the living human organism inevitably imposed a margin of chance, or the unexpected.¹⁴ How wide that margin might be depended on the abilities of the physician. Only the great physician, a Hippocrates or a Galen, could disestablish chance and set in

its place a true medical certainty – and, even then, he might not always succeed.

The true physician needed two things, ‘reason’ and experience, the two tools (*organa*), of medicine, and, of these, as Michael Frede has recently emphasized, the most important was experience.¹⁵ This was not just the expertise of a practised surgeon, or of a physician faced with his thousandth case of malaria; nor was it book-learning, prodigious in Galen, and the assimilation of the recorded clinical experiences of the past. It involved also the proper way of approaching a practical situation, investigating the patient at the bedside, and deciding upon the nature and cause of his illness. This detective work, so typical of Galen and of the Hippocratics, required above all the full employment by the doctor of all his senses.

What Galen understood by this is clear from a long section of his commentary on the Hippocratic tract *On the Doctor’s Surgery*. Whereas Hippocrates had cryptically declared that like and unlike were best discovered from what was most significant, easiest and universally recognized, Galen spent over thirty pages in explaining precisely what was meant by these terms. His conclusions were aptly summed up by a medieval Arabic author, Ali Ibn Ridwan, in his abridgement of the Galenic commentary:

For your diagnosis and the indications you observe, you should always choose things that are extremely powerful and easy to recognise, and these are what can be perceived by sight, touch, hearing, smell, taste and by the intellect. When these are properly grasped, they show the nature of the disease. Nature, in fact, has given us these faculties in order that by them we may recognise the true character of things, and the faculty of sense perception has organs that are natural to man and that can be used for testing.¹⁶

Two points can be made about this declaration. First, this is the only section in the genuine Galenic Corpus where Galen specifically refers to the five senses, and, like his model, Hippocrates, he adds a sixth sense, judgement, to the approved criteria.¹⁷ Yet in the context of this passage, which Galen interprets as relating to the method of perceiving illness, he finds it somewhat tricky to explain the role of the intellect in the whole process. Secondly, Galen is here laying down a whole programme of investigation for the ideal physician, and it is worthwhile to compare his own clinical activity with the methods that he himself claimed to be following.¹⁸

Contrary to what might be supposed from Galen’s comments in this section, the sense of smell plays only a small part in his bedside manner. It is true that the odours of urine, sputum, faeces, ulcers and a patient’s breath are all mentioned at various times as important diagnostic guides, but, apart from indicating that there is something wrong, they are not sufficiently subdivided as to specify exactly what that something is.¹⁹ Besides, to judge from other, non-medical writings, bad breath was extremely common: the purchaser of a slave