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WILLIAM HEBERDEN

'ultimus Romanorum: medicus vere Hippocraticus'

BY

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I am deeply grateful for the enviable privilege and honour of delivering the Heberden Oration.

I have chosen to speak of William Heberden, Senior, from whom we as a society derive our name, because it seems to me appropriate that in the saga of our Orations one at least should be devoted to an assessment of Heberden's work.

My sub-titles are derived from two contemporary assessments. Heberden attended Samuel Johnson in his final illness in 1783-4. Of this Boswell wrote:

Dr. Johnson being asked in his last illness what physician he had sent for, "Dr. Heberden", replied he, "*ultimus romanorum*, the last of our learned physicians".

Soemmerring, in his preface to the German edition of the "Commentaries", published in Frankfurt in 1804, named Heberden *medicus vere Hippocraticus*—a sentiment echoed by Austin Dobson, who in his "Last Essays" (1921) included one on Heberden entitled "The 18th Century Hippocrates".

Sir William Osler described Heberden as "the English Celsus"—a tribute not simply to his medical, but also to his classical scholarship. The earlier editions of the "Encyclopaedia Britannica" gave him a brief notice, but he disappeared after the 11th edition in 1910. Yet I share the view that he is among the outstanding clinical observers of the 18th century, and I propose, therefore, to use the opportunity which this lecture provides to justify this view.

I shall be concerned primarily with his clinical contributions. Many of the publications cited in the bibliography—especially Payne's notice in the "Dictionary of National Biography" (1891), A. C. Buller's "Life" (1879), and the papers by Percy Davidson (1922) and Sir Humphrey Rolleston (1933) in *The Annals of Medical History*—document such

William Heberden, Senior, from W. Ward's engraving of Sir William Beechey's portrait, now in the Royal College of Physicians of London.

biographical details as are known, so that the briefest sketch of his life will here suffice.

He was born in London in 1710. His elder brother by 7 years, Thomas, was also a doctor and a Fellow of the Royal Society.

William entered St. Saviour's School, Southwark, on July 17, 1717, at the age of 7, and in the same year his father, of whom little is known, died. His mother recognizing his ability, sent him to Cambridge, where he entered St. John's College in 1724,

and was granted his Bachelor's degree in Arts in 1728. He had acquired a wide classical learning, and was well versed in Hebrew. Two years later, he was elected to a Fellowship of his College, and then he pursued medical studies both at Cambridge and London, receiving his Doctor's degree in Medicine in 1739.

He remained at Cambridge for 9 years, actively engaging in medical practice and teaching. He delivered annually a course of lectures on *materia medica*, a manuscript of which still exists. Pettigrew gave extracts from these lectures in the Memoir of Heberden in his "Medical Portrait Gallery" (1840). In these, classical allusions abound, but his classical learning is best exemplified by his contribution in 1743 to a collected work by members of a literary circle in Cambridge, the brief title of which is "The Athenian Letters". To this work Heberden contributed "A Letter from Cleander to Alexias on Hippocrates and the State of Physic in Greece". This increased his already high reputation for Greek scholarship.

In 1745, he wrote "Antitheriaca: an Essay on Mithridatium and Theriaca". In this brief essay he pointed out that the ancients knew of three poisons only, namely hemlock, aconite, and those of venomous animals. He asserted that the antidote alleged to have been used by Mithridates Eupator the Great (133-63 B.C.) could have had no antidotal properties. It was, indeed, a simple remedy of rue, salt, and dried figs, though its composition had varied throughout the ages. Despite Heberden's cogent diatribe against this 'farrago', as he called it, the antidote remained in the *Pharmacopoeia* of the Royal College of Physicians of London for another half century.

He was elected a Fellow of the Royal College of Physicians in 1746, where in 1749 he delivered the Goulstonian Lectures, in 1750 the Harveian Oration, and in 1760 the Croonian Lectures. It was not until 1748 that he settled in London, whither he was invited by Sir Edward Hulse, physician to King George III, and later learnt that an earlier invitation had gone astray.

In 1749, he was elected a Fellow of the Royal Society. In 1745 he had contributed to its *Philosophical Transactions* a report on a large urinary calculus, which had been exhibited in the library of Trinity College, Cambridge, for 80 years, but it is there no longer. In 1765, he described a second large urinary calculus which was $3\frac{1}{4}$ inches long and $4\frac{1}{4}$ inches in circumference in a woman, which was voided without help. His other contributions in the *Philosophical Transactions* dealt with meteorological topics.

In London his reputation as a clinician rapidly increased, although in his early years he went to practise at Scarborough during the summer months. In 1752, he married the daughter of John Martin, a prominent citizen and member of Parliament, but his wife died 2 years later, leaving him two sons, one of whom, Thomas, was the father of a well-known physician, Thomas Heberden. He married again in 1760 the daughter of William Wollaston. One of the eight children of this marriage was William Heberden, Junior, who prepared the "Commentaries" for publication. He was able, and became, in 1793, physician to St. George's Hospital, unlike his father who had held no hospital appointment, and again unlike his father, he accepted several Royal appointments, including that of physician-in-ordinary to George III.

It is recorded that when George III invited Heberden, Senior, to become physician to Queen Charlotte, he declined on the grounds that he was apprehensive lest "it might interfere with those connections of life which he had now formed". In 1782, when he was 73 years old, he retired from active practice. Thirty years earlier, he had been called in consultation with Dr. Richard Mead to see the Duke of Leeds; at that time Mead was failing and Heberden resolved to retire while still in complete possession of his faculties. He wrote, in his 85th year, 12 years after he had retired, that he had not withdrawn from practice because of a wish to be idle, but because he wished to give over "before my presence of thought, judgement and recollection was so impaired, that I could not do justice to my patients. It is more desirable for a man to do this a little too soon than a little too late, for the chief danger is on the side of not doing it soon enough".

Heberden's other distinctions, listed in full in the memoirs by his son as an introduction to the "Commentaries", by Pettigrew, Buller, Munk, and more recent memoirs, included the Fellowship of the Society of Antiquaries to which he was elected in 1770.

He died at the age of 92 at his residence in Pall Mall; he was then senior Fellow of the College of Physicians. He lies buried in the parish church of Windsor. There, on a monument erected to his memory, are inscribed words from which none of his contemporaries would have demurred: "He practised physic, first at Cambridge, afterwards in London, with great and unsullied reputation above 50 years. His distinguished learning, his sweetness of manners and active benevolence, raised him to an uncommon height in public esteem".

I have already quoted Boswell's words, but his popularity and success are well illustrated in the

following verse common in the 18th century, which concerned the three most prominent physicians then in London:

You should send, if aught should ail ye,
For Willis, Heberden, or Baillie:
All exceeding skilful men,
Baillie, Willis, Heberden;
Uncertain which most sure to kill is
Baillie, Heberden, or Willis.

Heberden numbered amongst his friends and patients many poets and writers. Samuel Richardson, the novelist, left a ring to "the kind Dr. Heberden". William Cowper, the poet, expressed his gratitude to Heberden in a poem written in 1871, called *Retirement*:

Virtuous and faithful Heberden, whose skill
Attempts no task it cannot well fulfil,
Gives melancholy up to nature's care,
And sends the patient into purer air.

George Crabbe described Heberden in the sick room as "tender and ardent, with the kindest air".

Yet, though he lived, as Percy Davidson writes, as "a conscientious polished physician, a scholar of rare ability, and a man of lofty ideals", . . . "he has lived but feebly in the minds of physicians even a hundred years after his death". This lecture will have served its purpose if it helps to restore to their rightful place in the history of clinical medicine his contributions to its advance.

He was not a prolific writer. His communications appeared at irregular intervals. I have referred to those in the *Philosophical Transactions of the Royal Society*. Sixteen, including those on angina pectoris and on the chicken pox, are included in the first three volumes of the *Medical Transactions* published by the College of Physicians in London (1768, 1772, 1785).

But his major work—"Commentaries on the History and Cure of Diseases"—completed in 1782, was not published until 1802, a year after his death. This was prepared for publication in Latin by his son, William Heberden, Junior, and was translated by him into English in the same year. The manuscripts (see Crummer) are in the library of the Royal College of Physicians, together with other Heberden manuscripts. Yet others are to be found in Queen's College and St. John's College, Cambridge, and in the British Museum. Some manuscripts are in private collections, and I shall refer later to his "Introduction to the Study of Physic", which was discovered by Dr. Le Roy Crummer.

It is uncertain whether Heberden intended his notes for general circulation. He appears, as Rolleston observes, to have felt with Job (xxxii. 35),

that "my desire is that mine adversary had written a book", for Heberden was later to write, "If men of letters could be obliged to write always with a view to publishing, though without ever doing so, they would be perhaps the happiest of men."

In his preface to the "Commentaries" Heberden wrote, "Plutarch says that the life of the vestal virgin was divided into three portions: in the first she learned the duties of her profession; in the second she practised them; and in the third she taught them to others. This is no bad model for the life of a physician." He went on to say that he had passed through the first two portions and wished to pass the rest of his days in teaching what he knew to any of his sons who might choose the profession of physic. His notes for the "Commentaries" were made at the bedside; they were read over each month and follow-up notes were added to ensure a record of the course of the disease and the effects of treatment. He emphasized that he gave facts which he himself had observed and had not borrowed from other writers. The original notes are written in Latin and the diseases are arranged alphabetically.

Eponymously Heberden is remembered to-day only by "Heberden's nodes". Until towards the end of the 19th century, however, angina pectoris was commonly referred to as "Heberden's angina", and until 70 years ago he was remembered by many generations of medical students for a bizarre prescription which undergraduates used to call "Heberden's ink". This was first described by Heberden about 1760, and it became official in the Dublin Pharmacopoeia in 1826 under the title *Mistura Ferri Aromatica*. Its formula was as follows:

Take a lance-leaved cinchona, reduce to coarse powder an ounce,

Colomba root, sliced,	3 drachms,
Close bruised,	2 drachms,
Iron filings,	$\frac{1}{2}$ ounce.

Digest for 3 days in a closed vessel, shaking occasionally with as much peppermint water as will be sufficient to afford 12 ounces of strained liquor, then add

Compound tincture of cardomom's,	3 ounces,
Tincture of orange peel,	3 drachms.

This formula remained in the British Pharmacopoeia until 1890. Such admiration as one has for Heberden's condemnation of mithridatium and theriaca in his "Antitheriaca" is a little diminished by the reflection that Heberden's ink persisted for 130 years or so as an accepted therapeutic agent in this country.

Heberden gave a brief but succinct description of the nodes named after him:

Digitorum Nodi

What are those little hard knobs, about the size of a small pea, which are frequently seen upon the fingers, particularly a little below the top, near the joint? They have no connexion with the gout, being found in persons who never had it; they continue for life; and being hardly ever attended with pain, or disposed to become sores, are rather unsightly, than inconvenient, though they must be some little hindrance to the free use of the fingers.

But Heberden is perhaps best recollected for his description of that disorder of the breast which he called "angina pectoris". On July 21, 1768, he communicated to the College of Physicians a paper entitled "Pectoris Dolor or Angina Pectoris"; this was published in the *Medical Transactions* of the College in 1772. After describing many conditions which cause pain in the breast, he wrote in the "Commentaries":

But there is a disorder of the breast marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, which deserves to be mentioned more at length. The seat of it, and sense of strangling, and anxiety with which it is attended, may make it not improperly be called angina pectoris.

They who are afflicted with it, are seized while they are walking (more especially if it be up hill, and soon after eating) with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or to continue; but the moment they stand still, all this uneasiness vanishes.

In all other respects, the patients are, at the beginning of this disorder, perfectly well, and in particular have no shortness of breath, from which it is so totally different. The pain is sometimes situated in the upper part, sometimes in the middle, sometimes at the bottom of the os sterni, and often more inclined to the left than to the right side. It likewise very frequently extends from the breast to the middle of the left arm. The pulse is, at least sometimes, not disturbed by this pain, as I have had opportunities of observing by feeling the pulse during the paroxysm. Males are more liable to this disease, especially such as have past their fiftieth year.

He went on to say that, as time passed, the periods of freedom from pain lessened and less effort was needed to provoke an attack. He described carefully variations in the type of pain, its mode of onset and distribution, e.g. the right arm and hand only, and mentioned that sometimes the pain lasted some hours or even days. Nearly all the victims, he recorded, died suddenly. He gave with great precision his reasons for regarding the pain as spasmodic and not inflammatory in origin, and he noted that mental disturbance aggravated the attack, and that during the attack the pulse was not quickened.

In his original description twenty cases were

reported, but in the "Commentaries" he referred to nearly a hundred cases, though he gave the autopsy findings in one only.

The story of this autopsy was related by Heberden in the *Medical Transactions* of the College of Physicians for 1785. He had received an anonymous letter from a doctor aged 51, who described his condition—a classical angina with an irregular heart action and "suspended animation"; he told Heberden that he had left his body for *post-mortem* examination which might "perhaps tend at the same time to a discovery of the origin of that disorder which is the subject of this letter, and be productive of means to counteract and remove it". Less than 3 weeks after the receipt of this letter its writer died following an attack in the street. To perform the autopsy Heberden called in "that experienced and accurate anatomist, Mr. J. Hunter, to open the body, which was done within 48 hours after his decease". Nothing abnormal was found on examination except "some few specks of a beginning ossification upon the aorta". It might here be recalled that Edward Jenner was present at this autopsy, and later wrote to Caleb Hillier Parry, "I can almost positively say the coronary arteries of the heart were not examined." Heberden tells us that the autopsy does not inform us what the cause of the disease is. It is of interest to recall that a year after this autopsy John Hunter himself suffered his first anginal attack, which from his own description was almost certainly a cardiac infarct, and for the ensuing 22 years he suffered from recurrent angina, despite great activity in practice, teaching, and research. Hunter's angina was diagnosed by Edward Jenner after meeting him during a holiday in 1778. Jenner wrote to Heberden about Hunter and also about another case of angina pectoris which at autopsy revealed coronary arteriosclerosis; in one artery, indeed, he found "a firm fleshy tube" which would almost certainly have been a thrombus. It is interesting that at Hunter's autopsy there were revealed scars of a past infarction on the posterior wall of the heart and "the coronary arteries and their branches . . . were in a state of boney tubes which were with difficulty divided with a knife". Heberden had outlived Hunter by 8 years.

Heberden's treatment for angina was quiet, warmth, spirituous liquors, and opium. He wrote that "bleeding, vomiting, and purging appear to me to be improper". Heberden's conservative approach to therapy led Samuel Johnson to observe that of physicians he was *timidorum timidissimus*.

But in Heberden's papers and "Commentaries" are to be found highly original descriptions of

syndromes which we now, by their eponyms, assign to other authors.

Henoch described the purpura which bears his name in 1874, stressing the purpura, joint swelling, abdominal pain, melaena, and haematuria. But over 70 years earlier Heberden had described this very condition:

Purpureae Maculae

Some children, without any alteration of their health at the time, or before, or after, have had purple spots come out all over them, exactly the same as are seen in purple fevers. In some places they were no broader than a millet-seed, in others they were as broad as the palm of the hand. In a few days they disappeared without the help of any medicines. It was remarkable, that in one of these, the slightest pressure was sufficient to extravasate the blood, and make the part appear as it usually does from a bruise.

A boy four years old, for several days had swellings rise on his knees, legs, thighs, buttocks, or scrotum. The part affected was not discoloured, and when at rest, was easy, but could not be moved without some degree of pain. Together with these swellings there appeared red spots, sometimes round, sometimes angular, a quarter or half an inch broad, which on the second day became purple, and afterwards yellow, just as it happens from a bruise. The child continued perfectly well in all other respects. These swellings ceased to appear in about ten days; but the red spots continued coming out a few days longer.

Another boy, five years old, was seized with pains and swellings in various parts, and the penis in particular was so distended, though not discoloured, that he could hardly make water. He had sometimes pains in his belly, with vomiting, and at that time some streaks of blood were perceived in his stools, and the urine was tinged with blood. When the pain attacked his leg, he was unable to walk; and presently the skin of his leg was all over full of bloody points. After a truce of three or four days the swellings returned, and the bloody spots, as before. These dots became paler on the second day, and almost vanished on the third. The child struggled with this uncommon disorder for a considerable time, before he was entirely free from it.

He described ringworm accurately and knew of its infectivity. For its treatment he recommended the following:

The best method, which I know, is to cut off the hair where the distemper has spread over a great part of the head, and to keep it anointed with the tar ointment, covering it with a hog's bladder.

He described the seasonal incidence of hay fever and the effect of environment on asthma which he recognized varies with the individual patient; he recorded the hydrocephalus of scrofulous meningitis, and noted as a diagnostic sign the slow pulse which accompanied it.

He also described what must have been cerebro-spinal otorrhoea:

In consequence of a violent blow upon the head or ear, I have two or three times been witness to a copious discharge of water from the ear, either clear or lightly tinged with blood, especially on holding the head down: by the account of one of these patients there came not less than a pint every day; but this must have been said by conjecture, for it could not easily have been measured. Whence did this come?

He gave a vivid description of tuberculosis of the hip joint, and observed that in such cases pain is often referred to the knee:

Coxae Morbus et Exulceratio

There is a disease near the hip very different from the sciatica, or rheumatism, of that part; and though less painful, it occasions greater lameness, and is far more dangerous. It is seated in the joint of the thigh, and is attended with a remarkable pain in the knee, but with scarcely any in the part affected, even after the swelling is become very great, and a fluctuation of matter is perceivable. The thigh wastes, and the foot of that side is unable to support any share of the weight of the body. The patients sometimes die hectic, and wasted, before the swelling either breaks or is opened, but more commonly the ulcer of the joint makes a way for the purulent matter to discharge itself outwardly: yet this seldom saves their lives, and never prevents their lameness.

This disease will in some go on increasing for three years before it becomes fatal. It is chiefly found from the sixth to the sixteenth year, during which time of life the joints and external parts of the body suffer most from scrofulous complaints; which, after this age, seem to be turned upon the lungs, or abdominal viscera. The hip-evil evidently belongs to the scrofula; and other scrofulous appearances are often joined with it. The Peruvian bark, and cicuta, opium, and ecoprotics, make up the whole of the medicines, which either aim at the cure, or can occasionally relieve this most difficult and dangerous distemper.

Although John Fothergill had written on sick headaches, Heberden described typical hemicrania:

There is a dimness of sight in which dark spots float before the eyes, or only half, or some part of all objects appear, which continues for twenty or thirty minutes, and then is succeeded by a headache lasting for several hours, and joined sometimes with sickness.

He knew of the spontaneous laughter and tears which may follow an apoplectic attack, and related aphasia to a lesion of the left cerebrum. He noted also a curious loss of tremor following a hemiparesis. It will be recalled that Parkinson in 1817 had observed that tremor disappeared from the affected limb when it became paralysed by cerebral apoplexy. In Heberden's case, the paresis appears

to have been on the opposite side to the tremor, which ceased after its onset.

He took a great interest in mental disorders and recognized the fallacy of the implications of the word "lunacy". He wrote that "it is an inveterate opinion which my experience has uniformly contradicted that madness is influenced by the moon"; and as an example of his acute observation, I may quote his anticipation of Kraepelin's manic-depressive syndrome described in 1901:

Those who have been cured of lunacy, are very apt to have relapses; and some divide their whole lives between madness and reason. Such as never return to the use of their senses, are alternatively under the dominion of spirits either too drooping, or too elevated; and in each of which states it is not uncommon to have them pass several months together: they appear most reasonable in the melancholy fit.

Heberden's observations on the cardiovascular system preceded the general acceptance of Auenbrugger's percussion and antedated Laennec's auscultation. He was, however, interested in the pulse, and read a paper on this subject before the College of Physicians in 1772. His uncanny palpatory skill enabled him to recognize heart block:

There are very few healthy men, whose pulses are more than 90; and I knew one, whose chief distemper was the age of fourscore, in whom for the last two years of his life, I only once counted so many as 42 pulsations; but they were seldom above 30, and sometimes not more than 26; and though he seemed heavy and torpid, yet he could go out in a carriage, and walk about his garden, receive company, and eat with a tolerable appetite.

And over a century before his time, anticipating James Mackenzie, he recognized that all extrasystoles are not potentially dangerous:

Some books speak of intermitting pulses as dangerous signs; but, I think, without reason; for such trivial causes will occasion them, that they are not worth regarding in any illness, unless joined with other bad signs of more moment. They are not uncommon in health, and are often perceived by a peculiar feel at the heart by the persons themselves every time the pulse intermits.

The longest chapter in his "Commentaries" dealt with gout—the *opprobrium medicorum*. But he added little to Sydenham's description of gout, and nothing to its therapy except that he rejects two then prevalent theories. First, that gout is a beneficial disorder and should, therefore, be encouraged. This view led to the popularity of Bath, whose waters, it was claimed, "brought out" the gout. Secondly, that if gout were suppressed it "would go internally"—an early concept of retrocedent gout.

Time and time again he returned to the attack on the then widely-held view that disease is an attempt on the part of the body to rid itself of hurtful material and that to suppress it is harmful. For example, in discussing intermittent fever (malaria) for which he used Peruvian bark (cinchona) as a specific, he writes:

Yet we are told, that many physicians are still afraid of ever giving it in the beginning of an intermittent; and some are afraid of ever curing it at all with this remedy. They may perhaps adhere to the doctrine (which I believe is founded in error), that an intermittent is an effort of nature, by which the constitution frees itself from many hurtful humours, and from the rudiments of many impending diseases; and consequently where these friendly exertions are checked, those dangerous maladies will fall upon the internal parts, terminating in fatal dropsies. I suspect these groundless fears have had their origin from those fevers, which were falsely judged to be intermittent, when in reality they were hectic; and that the obstructions in the abdominal viscera were not owing to the bark, but were the original cause of the illness.

Whilst most of his contemporaries accepted without question the statements of Hippocrates, Galen, Sydenham, and other masters, Heberden rejected the *argumentum ad hominem*. His attitude to authority is seen in the following excerpt:

Philosophers have long ago thrown off Aristotle's tyranny; yet some physicians still chuse to wrangle about the meaning of the ancients, rather than to consult nature herself. Are they afraid of approaching her immediate presence, without making use of the intervention of Hippocrates and Galen? and is that reverence to be still paid to her once faithful ministers, which is properly due to nature alone, notwithstanding all that Bacon, and Harvey, and Newton, and our other great reformers, have witnessed against this mistaken veneration?

There are, indeed, innumerable evidences of his remarkable powers of observation in disease. But I must content myself with but one further example.

Heberden gave a detailed account of chicken-pox and emphasized for the first time the importance of its differentiation from smallpox. "Foreign medical writers hardly ever mention the name of this distemper; and writers of our own country scarce mention anything more of it than in name. Morton speaks of it as if he supposed it to be a very mild genuine small pox. . . . but these two distempers are surely totally different from one another." He showed that they did not, in modern terms, confer immunity against one another: smallpox would not prevent chicken-pox nor chicken-pox smallpox.

He then proceeded to describe one of his rare experiments. "I wetted a thread in the most concocted pus-like liquor of the chicken pox, which I could find, and after making a slight incision it was confined upon the arm of one who formerly had it; the little wound healed up immediately and showed no sign of infection."

In addition to this experiment, I can find in his writings reference to only three others. Of the treatment of gallstones he wrote:

There is a class of bodies which have been trusted to, from a belief that they have a power of dissolving gallstones. Of this kind are the alkaline salts, lime-water, soap-leys and various soaps: all which I have tried by steeping gall-stones in soap-leys, and lime-water, and in the solutions of soap, and of the salts; and it is no wonder, that the others did nothing towards dissolving the stones, when the most powerful of them all, the strongest soap-leys, could only fetch out a slight green tincture from a gall-stone, but neither seemed to lessen its bulk, nor to alter its shape, in several months; and there is very little likelihood of their being able to do more in the body than out of it. Gall-stones were likewise infused in every one of the acid spirits, without being dissolved in any.

In his "Antitheriaca", in which he poured scorn on the antidote, he recorded some experiments which he carried out on dogs with the poison of Indian darts and found that it was lethal.

His third experiment was, in effect, the therapeutic trial which he regarded as the only true indication of the action of a drug:

Fact, and repeated experiments, have alone informed us that jalap will purge, and ipecacuanha vomit, that the poppy occasions sleep, that the bark will cure an ague, and that quicksilver will salivate. If we examine the whole *materia medica*, and the whole practice of physic, we shall not find one efficacious simple, nor one established method of cure, which were discovered, or ascertained, by any other means.

After the publication of Morgagni's "De sedibus et causis morborum" (1761), of which the English translation was published in 1769, Heberden's writings dealt increasingly with clinico-pathological correlations. He noted, for example, that many gall-stones are "silent":

For many have been opened after their death, in whom a very large stone, or many small ones have been found, without their ever having had in their life-times any complaint, which could certainly be imputed to this cause.

Again, he recognized dilatation of the bile ducts following recurring obstruction due to stone:

I have had an opportunity of examining the gall-ducts of some, whom I had frequently seen in fits of the

jaundice; and I found them much distended beyond their natural diameter throughout their whole length, but very unequally. The same appearances are very common in the ureters of those, who have had many stones pass from the kidneys to the bladder. The liver of these persons, though they had for many years suffered frequent fits of the jaundice, was perfectly sound.

He noted also that optic atrophy could occur from direct pressure on the optic nerves:

In many instances the sight has gradually become dim, and at last been totally lost, even within the space of a few days, probably from the optic nerves becoming paralytic. I have seen this occasioned by a preternatural mass being formed in the brain, which compressed the origin of those nerves.

He described biliary dyspepsia (over a century before Moynihan) and appears also to have anticipated Morley's concept of visceral pain:

The liver having but a very full, if any, sense of feeling, if the inflammation be confined to the interior parts, it will hardly be attended with any pain; which, as I suspect, is never perceived, but when an ulcer, or inflammation of the surface of the liver, catches the diaphragm, intestines, or parietes of the abdomen. In this state of the liver the patients choose to lie on their right side.

His drug therapy was limited to the galenicals. The bleeding, purging, sweating, and other heroic measures of his contemporaries he rarely prescribed. But if he made no specific contribution to therapeutics, his general principles of treatment are as valid to-day as they were over a century and a half ago. He wrote, for example, of the treatment of epilepsy: "The number of remedies which are to be found for it in books and vulgar tradition afford a strong presumption that we have no effectual one." And similarly, of the treatment of worms: "We have the misfortune to have innumerable remedies for the worms; this being pretty generally a sure sign that we have not one upon which we can with certainty depend." In his maxim, "For new medicines, and new methods of cure, always work miracles for a while", he anticipated Trousseau's injunction, "Use a drug while it yet cures."

He was well aware of the *post hoc ergo propter hoc* fallacy:

It is probable that far the greater part of paralytic and apoplectic patients would recover some degree of life and strength by the unassisted efforts of nature. Hence arises a difficulty of ascertaining the real efficacy of any means which may have been used, unless often repeated trials should be found to have an uniform effect.

He placed great reliance on the *vis medicatrix naturae*. For example, in treating consumption, he writes:

In this case, therefore, as in all others where the proper remedies have not yet been discovered, the patient must be contented with instructions, which may enable him to avoid what has been found to aggravate the distemper, and by a proper regimen to put the general health into the best possible state; that the natural powers implanted in the body of readjusting any disordered part, may be able to exert themselves with the greatest vigor: nor needs the patient to despair of success from this care and attention.

How much easier would be the clinical assessment of drugs and of the unrestrained eulogies of drug advertisements if we followed his desire:

It were also to be wished, that writers would not confine themselves to relate only their successful practice, but that they would have the courage to tell us the ineffectual and hurtful.

We also note the echo of such present-day controversies as the value of anti-coagulant therapy in coronary thrombosis, in his comment on the value of Bath waters:

Few medicines have been more repeatedly tried under the inspection of such numerous and able judges; and yet we have had in the present age a dispute between those who by their experience and sagacity were best qualified to decide this question, in which one side asserted that paralytic patients were cured, and the other that they were killed, by the use of these waters.

He preferred to leave diet to the individual, for he recognized that each man knows best what agrees with his particular constitution; and he refused to starve a fever:

Eggs and milk have been, I know not by what authority, forbidden in all fevers; but, as far as my experience goes, they both afford innocent food in the worst, where they are grateful to the patients.

He had a remarkably modern outlook on the reasons why spa treatment might help patients, but denied the specific effect of any waters:

There is a further use in a Bath journey to those who are afflicted with the chronical colic; for by changing their manner of life, and their liquors, and culinary vessels, they may hope to cut off the communication which the lead had found to their stomachs, and against which, by being unknown, they were at a loss how to guard themselves at their own homes.

Besides, in all chronical illnesses, where these waters are innocent, there will be a good reason for any one's taking a Bath journey, who can afford it, in the benefit which he may hope to receive from the change of water, and air, from the breaking of some unhealthful habits, and from that suspension of business and cares, in which the visitors of Bath indulge themselves; all which circumstances make a place of this sort highly useful in establishing the general health.

He recognized that in such diseases as cataract and scirrhus of the breast, there is "no reliance in medical remedies", but that surgery could be of value.

This all-too-brief survey of Heberden's writings amply justifies Soemmerring's appellation—*medicus vere Hippocraticus*.

But Heberden had another abiding interest, that of medical education. This was hinted at in his preface to the "Commentaries", and was more fully revealed when LeRoy Crummer found, in a small shop in London in 1927, three volumes of manuscripts for the most part in Heberden's own hand. The third volume, written on the recto of 74 pages, includes "An Introduction to the Study of Physic". This remarkably far-sighted treatise was published by Crummer in the *Annals of Medical History* in 1928 and was reprinted in book form, with additions and corrections, in July, 1929.

In speaking of the prospective student of medicine, Heberden stressed particularly the value of mathematics and natural philosophy, saying that "these should demand his especial attention if he would be secure from error and superstition, from mistaken theories and ill-grounded practice". So that at an early stage Heberden would have the student instructed in the scientific method.

For him, the aim of education was "to understand the history of diseases and to know what will prevent, cure or palliate them in the best manner". And echoing some, but fortunately not all, modern educationalists, he wrote, "all studies, therefore, are beside his purpose that do not lead to this end".

He urged a course of practical chemistry because he thought that students otherwise would not remember this important subject. In contrast to contemporary ideas of medicine, he urged that *materia medica*, pharmacy, and prescribing, were to be discussed before anatomy.

He said that anatomy was to be learned both from books and by dissection*. He recommended texts especially of those who in particular fields had themselves made discoveries, for example, Glisson on the liver, Malpighi on the spleen, DeGraaf on the generative organs, Willis on cerebral anatomy—all of which are included in "Bibliotheca Anatomiae".

On the institutions of medicine, that is the groundwork, he referred to a large number of works worthy of study, including Harvey; these embraced physiology or animal economy, general pathology,

* It is interesting to compare this work with William Hunter's advice to his brother, John. In a manuscript which I possess of William Hunter's Anatomical Lectures occurs this note:—"When my brother first came to London as He purposed to be an Anatomist I persuaded him not to read any Author or examine any plans of the anatomical kind till he had attended a course of Lectures and seen a Human Dissection."

the signs of health and disease, and therapeutics. But he pointed out that ignorance leads to "a medley of fact and fiction" in these works. They convey opinions. "But it is necessary he should be on his guard, and not have too implicit a faith in those theories that he may not be disappointed when he attends upon nature and finds things go on not altogether so smoothly as they did in the system."

But the emphasis, "the great business of the physician", should be on the history of diseases, which he called special pathology, the study of which ends only with life itself.

He referred to texts, but warned against the writers who "have very little of their own, but for the most part compile only from others, so they fail in being so exact and faithful representations of nature being often copies of a third or fourth remove from the originals". He stressed Boerhaave's superiority, but warned against pirated editions. Sydenham, "who treated only of a few distempers", was also recommended, and he referred to Ramazzini's "Industrial Medicine" (*De morbis artificum*).

Of Glissen's *De rachidite*, he wrote, it "is a full history of that distemper but the tedious scholastic manner in which it is composed may be justly censored". One is struck on almost every page with Heberden's wide knowledge of contemporary medical literature.

"The province of surgery is totally separated from the physician; some little acquaintance with the modern practice of it is all he need desire"—a significant indictment.

He advised three years in academic learning, then one year embodying the institutes of medicine, a second year of *materia medica* and prescribing, and a third year of practical hospital and surgery attending patients.

He urged that the young physician should record his own observations by having an interleaved edition of one of the existent compendia; he mentioned Dr. Nicholas's or Heister's, or even more detailed works. "It may be no useless caution to desire a beginner not to be too forward in writing but rather to let it quite alone till he is advanced some way in these studies and is become a better judge of what is rare and useful and worth his notice"—a useful precept which might well diminish the output of current medical literature.

He advised not only an index of drugs, but a cross-reference under their actions, for example, diuretics, antihelminthics, etc., and he also urged that the student should have a commonplace book for matters not strictly medical, for example, philology.

In preparing for practice, books dealing with meeting the patient, etc., are of less value than "to endeavour to observe or inform ourselves of the address and manner of those physicians who have risen to the top of their profession with general applause, and to propose them for examples. Everyone's good sense will be ready upon a slight reflection to teach him how much an injudicious imitation of the humours and particularities of these great men is to be avoided."

In a final chapter on the ancient Greek and Latin medical writers, he analysed their contributions under three headings: original writers, collectors from others, and those of whom fragments only have survived.

He dealt with these in some little detail, but he discussed at length Hippocrates, whom he regarded as having been over-praised. He claimed that Hippocrates "filched from Pythagoras's mystic philosophy" the virtues of odd numbers, especially seven, and that his conclusions from observations were "too hastily formed and have been contradicted by longer experience"; yet he conceded that "there are many detached maxims that are extremely just, such as became a man of sense and careful observer of nature". He blamed Hippocrates' admirers for setting out with a "notion of his infallibility and omniscience", so that they "endeavour to get his authority for everything they say and frequently find in him what was never there". He thought that "Hippocrates himself would have condemned this if he were alive, as he ridicules in one part of his works that prodigy-loving humour of mankind that had attributed to several physicians pretended insights into diseases that were wholly beyond all reasonable belief; as that a man in health and in business should be taken ill and die in 24 hours with other things of the like nature which have been repeated upon Hippocrates himself and continued down to several succeeding physicians, and I doubt not are often yet to be said of others that shall be famous hereafter."

"There is no chemistry in Hippocrates, and but very little use to be made of his *materia medica* and pharmacy; his anatomy and natural philosophy are most chimerical, and have given birth to a physiology which has all the genuine marks which become the offspring of two such parents. In his "History of Diseases" there is no one but meets with such defects and superfluities as to make it possible by the help of only what he says to conduct it from beginning to end. We must likewise always remember that some of his observations are built upon his theory and philosophy, upon the rude accounts of his predecessor, the slight ones of his disciples, or upon the records left in the temple by those dreamers. Nay, even in some of those where nature was consulted by

himself, his conclusions were too hastily formed, and have been contradicted by longer experience."

Heberden, over a century after his death, was to be adversely assessed by William Osler, himself "a conscientious polished physician, a scholar of rare ability, and a man of lofty ideals". In Osler's Lumleian Lectures of 1910, he wrote of William Heberden that, "looking through the famous Commentaries one is impressed with the value, with the rarity too, of the old-fashioned, plain, objective description of disease, and one is also impressed with the great gulf which separates the clinical medicine of to-day from that of our great grandfathers. Page after page of the Commentaries are as arid as those of Cullen or Boerhaave, and then we light upon an imperishable gem in the brilliant setting of a master workman whose kinship we recognize with the great of old, with Hippocrates, with Areteus and Sydenham". Osler on Heberden is, indeed, much like Heberden on Hippocrates—"good in parts". Yet I deny the existence of the areas of aridness of which Osler complains; indeed, I do not doubt that, if Osler had studied Heberden's works in the context of the approach to clinical medicine of Heberden's contemporaries, he would have found that there is no medical writer of the 18th or, indeed, the early part of the 19th century, who touched so many topics in clinical medicine and to whom can be applied with greater truth Johnson's epitaph on Goldsmith suitably modified:

Medici, Physici, Historici qui nullum fere morborum genus non tetegit, nullum quod tetegit non ornavit.

(Doctor, Naturalist, Historian, who left scarcely any kind of disease untouched, and touched nothing that he did not adorn.)

We in this Society do well to perpetuate his name, for in so doing we honour ourselves.

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- [Crummer gives (pp. 60-1) a complete list of Heberden's published works and (pp. 64-7) a check list of Heberden manuscripts in the library of the Royal College of Physicians.]
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