

# WILLIAM CULLEN\*

by

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WILLIAM CULLEN was the second in seniority of that remarkable quartette of Lanarkshire boys who were born within thirty years and thirty miles of each other, and who subsequently made their names immortal in the medical history of the eighteenth century—William Smellie, William Cullen and William and John Hunter.

Cullen's early life may be dismissed in a few sentences. He was born in 1710 at Hamilton, where his father was a lawyer and factor to the Duke of Hamilton, and his mother a member of an old and honoured family, the Robertons of Earnock. The Cullens lived on a small family property near Bothwell, and they had the then customary quiverful of children, two sons and seven daughters. William was the second son, and the only member of the family to attain to any distinction. His father died soon after the birth of the youngest child, and the elder son died in early manhood, so that William was left with the responsibility for seeing his young sisters properly educated.

His own early education he received at the local grammar school, where he proved himself 'a lad of parts' with a prodigious memory. By the time he was seventeen he had entered the University of Glasgow, where he presumably followed the usual curriculum of the humanities and mathematics. He must then have chosen medicine as his future profession for we next learn of him as being apprenticed to Mr. John Paisley, a Member of the Faculty of Physicians and Surgeons. Apprenticeship was then the usual portal to the profession, and in the Glasgow of those days the only one, as the two titular professors of medical subjects in the University did not deliver lectures. Mr. Paisley, however, had not only a large practice but also an extensive library, to both of which his apprentice had free access.

## *Early Professional Life*

At the end of 1729, when he was nineteen years of age, Cullen went to London, where with the aid of a little family influence he obtained the post of ship's surgeon on a vessel setting out on a two years' trading voyage to the West Indies. This experience gave him some useful insight into the effects of climate upon health and into the serious and often fatal diseases which were at that time endemic in the Caribbean area. On his return to London he decided to improve his knowledge of drugs, and spent several months under the instruction of an apothecary of good repute. It may well be that this experience and the actual handling of drugs which it involved made it comparatively easy for him to teach the subject of *materia medica* later on.

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Returning to Scotland after an absence of some three years he at first made his home with a relative in the village of Shotts where he devoted his time to study and some scattered practice. Two years later, having inherited a small legacy which diminished the immediate urgency of making his livelihood by his profession, he spent several months residing with a dissenting minister at Rothbury in Northumberland, where he immersed himself in the study of philosophy and general literature.

Here let me interpolate an observation of Sir William Hamilton's in his brilliant review of Thomson's *Life of Cullen*—that in a young man of his stability of character the easy pace of Cullen's education, and the degree to which it was left to his own choice, favoured the development of a wide and harmonious culture, sufficiently scholastic to prevent its becoming one-sided. It was indeed the very antithesis of the sort of pressure-cooker system which is one of the banes of present-day education. As a result of the range and intensity of this self-gathered culture Cullen now began to aspire in his thoughts to the higher walks of the profession, and as a first step determined to proceed to the degree of Doctor of Medicine. He therefore betook himself to Edinburgh, the only university in Scotland with a faculty of medicine and organized teaching of medical subjects at that period, and one to which students from all over Europe and America were being attracted. Alexander Monro (*primus*) as Professor of Anatomy (which in those days included Surgery and not a little Medicine) was the star of the professorial cast, but he was ably supported by other former students of Boerhaave in the persons of Drs. Rutherford, Sinclair, Innes and Plummer.

While in Edinburgh Cullen became a member of a small study and discussion circle of some half-dozen keen medical students, which in due course evolved into the Royal Medical Society. The Society is a much larger body now, but it retains its early enthusiasm unimpaired, having been carried on uninterruptedly through almost two and a quarter centuries by senior students and very recent graduates with the dew of youth still upon them.

Cullen continued his studies at Edinburgh over the years 1734–6, and then, at the age of twenty-six, returned to his native town of Hamilton and started practice. He became the family doctor to the ducal and other 'families of consequence', and he remained in Hamilton for seven years. During this period four events occurred which influenced his life.

The first was that the Duke of Hamilton died and certain advantageous projects which he had had in mind in order to keep Dr. Cullen at Hamilton fell through. The second was that soon after settling in Hamilton Cullen became acquainted with William Hunter. Acquaintance rapidly ripened into friendship, and Hunter came to reside with and study under the guidance of Cullen. The story of their projected partnership, in which each partner was to be free in alternate winters to go away and pursue medical study elsewhere, is well known. But the plan broke down when Hunter went to London and came under the spell of Dr. James Douglas and his teaching of Anatomy. The tie of friendship remained strong, however, and they corresponded frequently all

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their lives. In the hey-day of his glittering success in London William Hunter said of Cullen that 'he was the man to whom I owe most and love most of all men in the world'.

A third occurrence was that Cullen achieved an earlier ambition by obtaining the Doctorate of Medicine of Glasgow in 1740. But the fourth and a much more important happening was that in 1741, when he was now thirty-one, he married Anna Johnstone, the daughter of a Renfrewshire manse, and a lady of great charm and mental endowments. They enjoyed a happy married life for forty-six years and had a family of no less than seven sons and four daughters, several of whom inherited the talents of their parents.

#### *Cullen and the Glasgow Medical School*

There was little now to keep a man of Cullen's mental calibre in a small country town, and the innate urge to teach what he had himself learned was pressing upon his spirit. Accordingly in 1744 he moved to Glasgow with the aim of starting as a lecturer in Medicine and practising as a physician. In passing it may be noted that he always had a dislike of surgical work and avoided it throughout his whole career.

The exact date when Cullen began to lecture has been obscured by the dust and turmoil of 'The Forty-Five', but in 1746 he came to an arrangement with the titular Professor of Medicine whereby he was allowed to deliver a course of lectures on the theory and practice of physic. In this way Cullen became the real founder of the school of medicine in the city and university of Glasgow.

For some time after this Cullen was able to exercise the full range of his learning by delivering lectures on chemistry, botany and materia medica as well as Medicine—almost a whole faculty of medicine in himself. One notable feature of his lectures on medicine was that he departed from the universal custom of lecturing in Latin and spoke in English. This seemingly small point had considerable significance, for besides the obvious advantages of making his teaching more easily followed by his students, not all of whom were accomplished latinists, and perhaps also of allowing him to expand his views more spontaneously where this seemed expedient, the use of the vernacular contributed to the weakening of the authority of the ancients whose works were all in Latin or in Greek.

In 1751 Cullen was formally appointed Professor of Medicine in the University of Glasgow, but he continued his active interest in Chemistry—both teaching and practical investigation. In his lectures he was the first man to make use of chemical diagrams, and must be regarded as the father of the graphic chain formulas now so familiar. He also persuaded the university to provide him with a laboratory, and there he worked alongside his students. In this and in many other ways the professor seems always to have associated himself closely and helpfully with his students as individuals, and consequently he was not only greatly esteemed by them as a teacher but greatly beloved by them as a man.

One of his students in chemistry was Joseph Black, who became his assistant

and later his successor, first in Glasgow and later in Edinburgh. Black was one of the great pioneers in chemistry.

All the heavy burden of teaching with which Cullen had now saddled himself, together with a large volume of consulting practice which involved much travelling but produced little monetary reward, was beginning to tell on the Professor's strength to a degree that caused no little concern to his friends, and some of them conceived the notion that he might perhaps be brought to succeed Dr. Plummer, the Professor of Chemistry in Edinburgh, who was believed to be on the point of retiring. This proved to be a case of counting chickens before they were hatched, for Professor Plummer, not unnaturally, had his own views on the matter, and the other medical professors in Edinburgh did not favour the suggestion of a brilliant Glaswegian coming into their midst and probably annexing much of their consulting practice. To cut a long and involved story short it was not until four years later, at the end of 1755, by which time Professor Plummer was completely incapacitated, that Cullen was appointed Joint-Professor of Chemistry and Medicine along with Plummer, and with the promise of ultimate succession on the latter's death. This event occurred six months later, and Cullen became the sole Professor.

#### *Cullen in Edinburgh*

The next important step to be recorded in Cullen's progress in Edinburgh was his starting to give clinical lectures in the Royal Infirmary. The privilege of giving such lectures had been accorded by the hospital managers to all the medical professors, although Dr. Rutherford, the Professor of Medicine, and incidentally the grandfather of Sir Walter Scott, was the only one who had up to that time availed himself of it. But in 1757 Cullen was granted the privilege and he persuaded Monro (*secundus*) and Whytt, the Professors of Anatomy and Physiology respectively, to join with him. This conjunction of stars of the first magnitude conferred great lustre and distinction on the clinical teaching of medicine in Edinburgh, and did much to secure for it the eminence and fame which it has so long enjoyed.

Three years later, in 1760, Alston, the Professor of *Materia Medica* died, and there was no one in Edinburgh qualified to take his place at short notice. The students thereupon took the matter in hand and petitioned the Town Council (at that time the governing body of the University) to invite Professor Cullen to undertake the task. This he willingly agreed to do, having already had experience of lecturing on the subject in Glasgow. The lectures were an outstanding success and became enormously popular. Manuscript notes on them were eagerly sought after, and were copied and circulated far and wide amongst the profession all over Europe. Ultimately they achieved the supreme compliment of being pirated and published in London, Dublin and Edinburgh as well as being translated into several European languages—all without the author's permission. Cullen was forced to seek an interdict against the publisher from the Court of Chancery, which he easily obtained together with a fair share of the profits on the copies already sold.

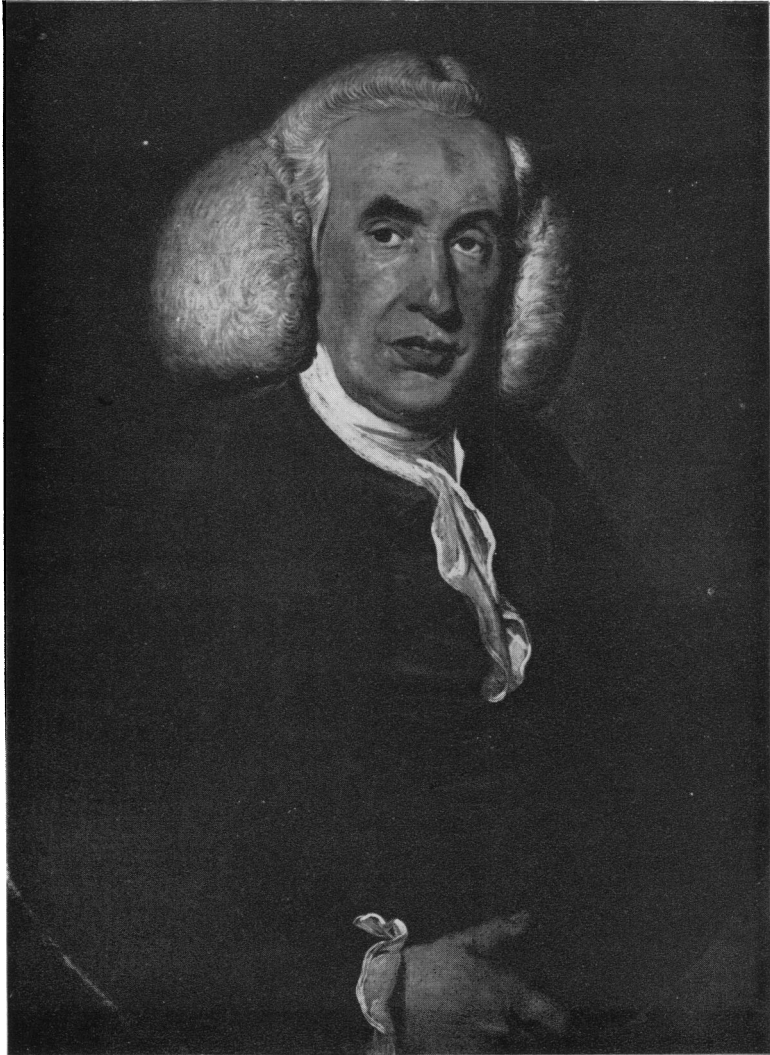


Fig. 1  
WILLIAM CULLEN  
(1710–1790)  
*From the painting by William Cochrane  
in the University of Glasgow.*



Fig. 2  
WILLIAM CULLEN  
(1710-1790)  
From John Kay's *Edinburgh Portraits*, 1842.

All these legal proceedings must have been a profound nuisance to a man of Cullen's studious cast of mind and habits, but a much more vexatious misfortune befell him two or three years later when in 1766 Professor Rutherford resigned the Chair of Medicine. In the estimation of most of the profession and of the educated public Cullen, then aged fifty-six, was the man most pre-eminently qualified to succeed him. But personal jealousies and prejudices had been at work, and Rutherford persuaded the Town Council to appoint Dr. John Gregory, the titular Professor of Physic at the University of Aberdeen, and a considerably younger and less experienced man than Cullen. This was a bitter blow to the high hopes which Cullen had had every justification for cherishing, and all the intriguing and machinations which brought it about must have been in the highest degree obnoxious to a man of Cullen's open and straightforward character. His exclusion from the Chair was, however, of short duration. Whytt, the eminent Professor of Physiology, died prematurely a few months later, and this event led to a curious situation—a sequel to the Town Council's earlier uninformed action. Once more the students took the initiative, and, nearly two hundred strong, petitioned the Council that Gregory be asked to resign the Chair of Medicine and be appointed to the vacant Chair of Physiology: that Cullen, their prime favourite, be asked to demit the Chair of Chemistry and be appointed to the Chair of Medicine: and that Dr. Joseph Black, who ten years earlier had succeeded Cullen in the Chair of Chemistry at Glasgow, be now invited to succeed him in Edinburgh.

Despite the essential good sense of these proposals the Town Council were, naturally enough, not prepared to accede to such an academic 'general post' at the dictation of the students. At any rate they took the proposals in two bites with a considerable pause for rumination between them. Their first bite was to appoint Cullen to the vacant Chair of Physiology and to elect Black to the Chair of Chemistry. The second bite followed three years later, when they appointed Cullen Joint-Professor of Medicine along with Gregory, whose health was failing. For four years until Gregory's death in 1773, the two gave lecture-courses in alternate sessions. Cullen then at the comparatively advanced age of sixty-three became the sole Professor of Medicine—a post which he occupied and adorned for sixteen more years before the infirmities of age compelled him to resign, and very shortly thereafter led to his death.

While thus climbing to the summit of his academic ambition, patiently and successfully but not without disappointments and frustrations, Cullen had steadily accumulated a wide consulting practice, and won a quite superlative reputation in the estimation alike of the public and of the many hundreds of students who passed through his classes, and who all seem to have gone away with a lasting affection as well as a deeprooted admiration for their teacher.\* It is no exaggeration to state that in those years Cullen was the most famous physician and teacher of Medicine in Europe, and the University of Edinburgh gained from his presence an immense prestige.

\* Of this point there is ample evidence, but one testimony will suffice. Samuel Bard, an American, who graduated from Edinburgh in 1765, and who subsequently was one of the founders of the first medical school in New York, wrote, 'I could listen to him for three hours instead of one' (Thoms).

*Theories and Systems in Medicine*

To gain a background to Cullen's own teaching a brief survey must be made of the state of the subjects constituting medical education in his earlier days; and as a preliminary we must remember that the transition from medievalism in thought, which we call the Renaissance, extended over many generations. The paralysis with which blind acceptance of the authority of the ancients, especially Aristotle and Galen, afflicted the minds of men throughout the Middle Ages, had to all intents arrested intellectual progress for fourteen centuries; and as the parietic influence waned but slowly so the recovery of intellectual activity was at first slow, hesitant and stumbling. The intellectual outlook in Cullen's early days was thus by no means so far advanced beyond the dogmas of medievalism as the rate of scientific progress to which we in our generation have become habituated might lead us to expect. Cullen was much closer to Vesalius and Harvey than he is to leaders of medical thought in the present day. He 'lived at a time when medical thought was driven hither and thither by conflicting theories as to the nature of life and of vital processes'—a point which, as J. D. Comrie wrote thirty years ago, it is 'difficult to understand in days when the human mind accepts the mystery of life as a fact and enquires only into the ways in which it is manifested'. (But since Comrie wrote that, the wheel seems to have turned full circle, for once again our biochemists and virologists are consciously seeking the life principle in their researches into nucleic acid.)

With the growth of inductive thinking and the rise of the scientific method the specialized branches of knowledge, destined to become the basis of all enlightened medical training, were just emerging from the rather stifling embrace of general philosophy, and reaching out to a level at which they might be called sciences in their own right.

Thus CHEMISTRY, Cullen's first subject of prelection, had just passed out of the phase of alchemy: knew only the four primary elements of earth, air, fire and water: and was completely dominated by Stahl's misleading but universally accepted theory of Phlogiston. Combustible substances when burned were changed because this mysterious spirit of inflammability had been disengaged from them. Both Cullen and Black taught this theory without apparently having any doubt about it.

In BOTANY Cullen was a convinced and ardent disciple of the great Swedish botanist, Linnaeus, who classified all plants by their sexual characteristics—an admittedly artificial method but the best so far devised.

MATERIA MEDICA was in those days much more allied to the vegetable kingdom than it is now, and the Linnaean obsession for classification, or taxonomy as the botanists call it, was readily transferred by Cullen to that branch of study. Probably this was very much to the advantage of his students, but it is more interesting to us as showing that Cullen had not only a great mind but a 'tidy' mind. Throughout his thinking and teaching the supreme factor of logic is conspicuous, and this tended to manifest itself in classification and methodical arrangement.



It is not surprising therefore that his first major publication—and one regarded by some of his contemporaries as his greatest—was his *Methodical Nosology*, written and entitled in Latin as was the custom of the day, and issued in 1766. This small book, little more than a pamphlet, contained a rigid classification of diseases by their symptoms along lines comparable to those of Linnaean botany. All the known diseases were arranged in classes, orders, genera and species, making a sort of system of the whole of medicine. Doubtless this system again simplified matters for the students, but it was an artificial structure and did not long survive its author. At the same time we must remember that for purposes such as the certification of the causes of death and some statistical uses a nosology of some agreed form is imperative, and the present-day successor to Cullen's book may be said to be the familiar volume on the *Nomenclature of Diseases* issued and revised from time to time by the Royal College of Physicians of London.

The two other subjects in which Cullen became a Professor were the 'Institutes of Medicine' (also known as the 'Theory of Medicine') now called Physiology, and, secondly, the 'Practice of Physic' (or Medicine). Pathology as a separate science was hardly recognized until the nineteenth century, and what was known about the processes of disease in Cullen's days was wholly incorporated in the two subjects just mentioned.

To form a clear idea of where these two subjects stood in those days is difficult, and not made any easier by the fact that most of the writings on them are either in Latin or in the language of extinct phases of philosophy. But the preface to Cullen's greatest book, his *First Lines in the Practice of Physic*, offers a starting-point, for there he states that he has 'assumed the general principles of Hoffman'.

Hoffman and Stahl, both of Halle, were with Boerhaave of Leyden the three most prominent medical teachers in Europe in the first third of the eighteenth century. Stahl, Professor of Medicine and incidentally the author of the phlogiston theory in chemistry, made the first great breach on the purely materialistic system of Galen by teaching that the source of all vital movement lay in the *anima* or *soul* in the Aristotelian sense of that word, which, according to Guthrie, may be said to correspond to the subconscious mind in our present-day philosophies. Hoffman breached Galen's system in another important aspect by teaching the greater significance of the solid organs in contrast to the purely humoral pathology of Galen, which had dominated medical thought for many centuries and had been responsible for the incalculably great loss of life attributable to blind belief in the therapeutic efficacy of bleeding. Hoffman further modified Stahl's view and taught that through the nervous system the vital processes were kept in a state of tonic equilibrium—excess of *tonus* on the one hand or deficiency of it on the other accounting for all forms of disease, and calling for sedatives or 'tonics' as the case might be in therapy.

Hermann Boerhaave, a positively titanic figure in early eighteenth-century medicine, achieved much greater and more lasting renown as a teacher and physician than the two just mentioned. A man of great personal charm, he had

the faculty of making his teaching singularly interesting, and his bedside clinical teaching, a revival of a Hippocratic custom, proved a magnetic attraction to students from all over the civilized world. His philosophy was not, however, very original. He was, indeed, something of an intellectual Autolycus, taking up bits of other men's philosophies and fitting them into his own philosophical jigsaw as best suited his purpose. His system of medicine was essentially materialistic, and he viewed the action of the nervous system on an entirely mechanical basis. Boerhaave's teaching, however, had pervaded the whole of European medical thought when Cullen began his studies; and when ultimately he came to Edinburgh as a professor he found the Boerhaavian doctrines solidly entrenched for the good reason that all the other professors had studied at Leyden under the great master. Cullen, however, made no attempt to conceal the fact that in several points he differed from Boerhaave, and even relates how Lord Provost Drummond once came to him and besought him not to endanger the fine reputation, which the University of Edinburgh was rapidly acquiring, by opposing the doctrines of Boerhaave. But the integrity of Cullen's mind would not let him compromise with what he believed to be the truth, and he continued to expound his own views to his students.

Against all this background the point that stands out as most original and positive in Cullen's teaching is the emphasis he placed on the functions and disorders of the nervous system. In his own modification of Hoffmanism he taught that life was maintained by what he called the 'energy of the brain' passing from the central nervous system to the solid organs and the muscles. Like most of his contemporaries he believed muscle tissue to be a continuation of the medullary substance of the brain, cord and nerves with some modification of structure not yet understood. He postulated a 'fluid' as the medium of transmitting this energy to the nerve terminals, but explained that he used the word 'fluid' merely as a term for this hypothetical means of transmission and not in the sense of an actual liquid. In health the human organism was kept by this energy in a state of what he called 'excitement', and the lack of 'excitement' was the cause of disease. The mind, as the origin of all movement and the receiver of sensations was something akin to what Aristotle called the 'sentient soul'.

In some of this Cullen was not so far removed from our present position. We still speak—conversationally and perhaps loosely—of 'nervous energy'. We now know something of the laws governing the 'nerve impulse' and believe that it is not so much like a wave passing through a liquid or a gas, but is rather a self-propagating disturbance 'like a spark passing along a train of gunpowder' (Best and Taylor). We know much about its stimulation by electrical, thermal, chemical or mechanical influences. But when we ask ourselves how the will stimulates it, or question the physiological basis of thought or even of memory, we find ourselves still in the realm of pure speculation.

#### *The Brunonian Theory*

It was on his theory of 'excitement' that Cullen was treacherously assailed by a former pupil and assistant to whom he had shown very great personal

kindness over many years—John Brown, inventor of the so-called Brunonian System. This curious individual—said to be in part a naïve innocent but certainly in part an unscrupulous and sophisticated rogue, with an infinite capacity for hard work—distorted what he had learned from Cullen into an oversimplified but easily understood system of Medicine. Life, he maintained, was dependent on continuous stimulation either from the activity of the brain or the emotions, or from external stimuli like food, drink and warmth. All diseases fell into one or other of two categories—the sthenic group in which there was increased excitability or the asthenic group in which there was diminished excitability. No further or more precise diagnosis was necessary, and the curative treatment consisted simply in giving sedatives such as laudanum in the sthenic diseases and stimulants such as whisky in the asthenic. It was inevitable that such a transparently easy system of medicine should appeal to students and practitioners of a certain type of mind. Among the Edinburgh students there was considerable argumentative brawling between Cullenians and Brunonians, but it is to the credit of this country as a whole that the Brunonian system found comparatively few adherents. On the Continent, however, things were different, and it aroused the controversial passions of the profession in a way which had not been witnessed since the days of Paracelsus (R. H. Major). Its unhappy author, who was so addicted to both of his own favourite remedies that he took forty drops of laudanum in a glass of whisky before a lecture and repeated the dose several times in the course of it, ultimately succumbed to his own therapy. It seems almost unnecessary to add that all this caused the deepest distress and vexation to the peaceable spirit of William Cullen.

#### *Cullen's Teachings*

In his *Methodical Nosology* Cullen divided all diseases into the four great classes: (1) Pyrexias, (2) Neuroses, a term which he was the first to use, (3) Cachexias or diseases resulting from bad habits of the body, e.g. scurvy, and (4) Local Diseases, of which cancer was an example. In several instances the contents of these classes would surprise the modern physician. Cullen had a particularly high reputation on fevers. He attributed the sequence of the cold, the hot and the sweating phases to spasm of the arterioles followed by dilatation, and he writes so clearly on these stages that one feels he must have observed them critically during his early visit to the West Indies.

On gout his words are said to have been regarded with the reverence due to an oracle. In his book on the *Practice of Physic* he devoted thirty-five pages to gout, which must surely have been as common in those days as it is now rare. He denied the existence of any 'morbific matter' in the victim of gout and taught that, while there was no specific remedy in the acute phase, hard work or exercise with apostolic moderation in regard to meat, malt liquors and wine were an effective prophylactic against recurrence. Curiously enough in none of his books either on materia medica or on the practice of physic does Cullen mention Colchicum, although it was introduced into modern medicine by

von Störck in 1763 (ten years before Cullen became Professor of Medicine in Edinburgh), and soon acquired a reputation as a specific in the acute phase of gout.

*Cullen as Administrator*

Soon after his translation from Glasgow to Edinburgh Cullen became a Fellow of the Royal College of Physicians of the latter city, and always thereafter took an active interest in its affairs. In 1773 he was elected President of the College, and during his term of office he laid the foundation-stone of the new college buildings on the site in George Street where now the Head Office of the Commercial Bank of Scotland stands. His proper pride in the reputation of his College as well as of the University led Cullen in his dual capacity of President and Professor to react vigorously to the prejudice against Scottish university degrees in medicine which flared up at that time in London and the South of England. This was based on the undeniable fact that in some instances such degrees had been conferred on the mere payment of fees; and it must be remembered that by its charter the Royal College of Physicians of Edinburgh was at that period obliged to give its License without further examination to any medical graduate of any Scottish university who applied for it. None of the four universities was guiltless, but Glasgow and Edinburgh had definitely cleaner records than the other two, and so far as Edinburgh was concerned Cullen took a leading part in putting a stop to this 'trafficking'. He drew up a memorial for the Duke of Buccleugh who was prepared to try to get the government to move in the matter. This memorial the duke submitted for criticism and advice to his former tutor, Adam Smith, who had retired from his Moral Philosophy Chair at Glasgow and was engaged in writing his famous book on *The Wealth of Nations*. Smith, surprisingly not to say mischievously, applied his free trade principles to the subject of medical education and pronounced against any interference with free competition. The universities were thus left to rectify the matter by themselves, and Edinburgh did so by drawing up regulations governing the curriculum of study and the examinations necessary for degrees in medicine. These 'Statuta Solemnia' were much needed, for an unfortunate case had occurred of an ignorant brushmaker, named Leeds,

who, having attended medical lectures without knowing a word of Latin, in which language they were delivered, and having, by a thesis written by someone else, got a degree of M.D., was on the strength of it made Physician to the London Hospital, where his ignorance brought disgrace on the University (Grant).

*Interests outside Medicine*

There can be no doubt that medicine and the allied sciences must have occupied most of Dr. Cullen's thoughts, but in the eighteenth century the serious pursuit of such studies involved considerable familiarity with general philosophy—and that is ever a matter of real erudition. The fact that Cullen was an intimate personal friend of such men as David Hume, the great philosopher, of Adam Smith, of Lord Kames, judge, philosopher and agriculturist, and of

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Principal Robertson of Edinburgh, the famous historian, is of itself ample proof that Cullen had a mind cultivated on many sides. His hobby was scientific agriculture and horticulture, particularly in relation to the chemistry of the soil and the action of manures. After he went to Edinburgh he purchased a small estate, Ormiston Hill, near Kirknewton—a rather bleak region of poor soil, at a considerable altitude and much exposed to the north winds—in short the sort of place that most people would shun as a retreat. But there Cullen found at last an opportunity to submit his scientific theories to the test of practice, and he is said to have achieved no little success in spite of the adverse conditions.

### *The Last Months*

Throughout all the thirty-four years of his life as an Edinburgh physician Cullen resided in a 'close' off the Cowgate, known as The Mint. When he first went there it was quite a fashionable locality, but although it sank considerably in social status later yet the old doctor was content to remain there. For during the last three years of his life his spirits were low. His beloved wife and his great friend, William Hunter, had both died, and his bodily and mental vigour were deserting him. Ultimately in December 1789 he realized that he could no longer carry on the duties of his Chair, and he wrote to the Town Council to that effect. The announcement of his resignation was followed by events which reveal the quite extraordinary regard and affection in which Cullen was held. The Town Council gave him a present of plate inscribed with an expression of their high esteem and their gratitude for his services to the University. The Senatus Academicus, the Royal Medical Society, the Royal Physical Society and other bodies both at home and in America sent him complimentary addresses; and a committee of influential citizens immediately raised funds for a marble bust which now stands in the Library Hall of the university.

A few weeks later William Cullen died and by his own wish was buried privately within the old parish churchyard of Kirknewton, near the rural retreat from which he had derived so much happiness.

### *Cullen's Personality and Posthumous Fame*

Any attempt to assess William Cullen's character and personality and to indicate the high-lights of his greatness meets with difficulty. Some of the main features of his mental build, such as his great native ability, his tenacious memory, his inexhaustible industry and unrelenting pursuit of knowledge, and the logical and methodical character of his thinking, are easily recognizable. Mostly, however, these are the lineaments of the professor and the consulting physician. When we recall the warm reciprocal affection which his deep personal interest in his students aroused in the students themselves, and the similar response which he is said to have evoked from all his patients, we get a closer view of the man himself; and this natural friendliness and loveliness are also testified to in much of his correspondence with his eminent friends. Otherwise the literature on Cullen affords us no complete portrait of his personality.

There is nothing to tell us of his religious views, nor any evidence that he possessed much of the saving grace of humour. That he was generous with his help and with his money we do know, but he was also careless with money, leaving it in an unlocked drawer, which on his death, was perhaps not unnaturally, found empty. His biographer, in a gallant attempt to portray the man apart from the learned physician tells us that 'in the evenings he sometimes made one of a party at whist; but this was the only relaxation or amusement in which he indulged when resident in Edinburgh'!

Blame for this regrettable lack of personal touches is not to be attributed to Cullen's biographers, but rather to the frustrating course of events which followed his death. Thus, for example, his tomb remained unmarked for twenty years, until his son, who had become a Lord of Session, died and was buried beside him, and a stone set up. Half a century later the Royal College of Physicians of Edinburgh restored the crumbling tomb and placed over it another stone with a suitable inscription.

In similar manner his life-story was neglected. It was no less than forty-two years after Cullen's death before the first volume of Professor Thomson's *Life of Cullen* appeared, and sixty-nine before it was completed by the issue of the second volume. The primary cause of this unhappy delay was that Cullen's eldest son wished to undertake this pious duty himself, and the offers of friends like Andrew Duncan, the Professor of Physiology, were declined. But Robert Cullen became immersed in his judicial duties and died before he had even started his filial project. Professor John Thomson of the Chair of Pathology, a man of profound scholarship, was then invited by the family to undertake the task. He accepted with reluctance, for he had never even met Cullen personally, and after the lapse of more than a generation could find but few who had known him in his earlier days. Another twenty years passed before he succeeded with the help of his son William (later the Professor of Medicine at Glasgow) in producing the first volume; and before the second volume could be finished, both he and his son had died and it was left to a Dr. Craigie to complete it.

The outcome of a biography, conceived after such a long delay and written by a man of such wide erudition, was a work totalling some fourteen hundred pages in which the human side of William Cullen is wellnigh submerged in a very ocean of detailed medical philosophy. None but a philosopher could do justice to it, and the editors of the *Edinburgh Review* wisely entrusted the first volume to Sir William Hamilton for review. The result was a brilliant and sparkling article in which Hamilton writes:

It would be difficult indeed to find in any nation an individual who displayed a rarer assemblage of the highest qualities of a physician. . . . Cullen's mind was essentially philosophic. Without neglecting observation, in which he was singularly acute, he devoted himself less to experiment than to arrangement and generalisation. We are not aware indeed that he made the discovery of a single sensible phenomenon. Nor do we think less of him that he did not.

These last words bring one to the other point in which one feels that any word-portrait of Cullen is lacking, namely the difficulty of bringing his greatness

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to a focal point. We cannot associate his name with any one discovery or any one epochal event or revolutionary development in medicine, as we do with Harvey and Jenner for example. We do not even attach his name eponymously to any disease or physical sign, far less a 'syndrome'. The fact would appear to be that Cullen influenced the medicine of his day at too many points to have his memory associated with any particular one.

As that amiable biographer of the *Disciples of Aesculapius*, Sir Benjamin Ward Richardson, put it—'Cullen comes before us as a phenomenon in medicine. He was original from the beginning to the end of the chapter; he moved medicine from its centre to its periphery, and yet the most careful study of his labours fails to detect one poor unit of actual discovery with which his name can be connected. Where, then, did his strength lie?'

Richardson attempts to answer his rhetorical question by reference to the points already mentioned, along with the notable loveliness of Cullen's character and his outstanding skill as a teacher. No one would gainsay the complete validity of these points as far as they go, and they certainly serve to explain how in his lifetime Cullen was the centre of the most powerful attraction to students of Medicine from all over the civilized world. But the attraction and, to a less extent, the influence of such qualities become first memories to those who experienced them, and later mere legends to those who did not. So perhaps it is not to be wondered at if, in an attempt to do honour to his memory more than a century and a half after his death, one feels that there is something oddly elusive about Cullen's splendid contemporary reputation, and that any word-picture of him must ever be unfinished.

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## POSTSCRIPT

There are two authentic portraits of Cullen. The earlier, dated 1768, was painted by Cochrane, and there would appear to be two replicas of it. Expert opinion favours the picture in the Scottish National Portrait Gallery in Edinburgh as being most probably the original: and in that case those in the Royal College of Physicians of Edinburgh and the Hunterian Museum in Glasgow are copies. The later portrait by Martin was commissioned by the Royal Medical Society in 1777 and hangs in their Hall in Edinburgh. Engravings of both are extant.

The caricature in Kay's *Portraits* is probably a good likeness. The marble bust by Gowan

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in the Edinburgh University Library was commissioned in the last months of Cullen's life. The history of a portrait in the Royal Faculty's Hall in Glasgow is not known. It is probably a made-up representation, and is not flattering.

The two authentic portraits suggest a man of benignant dignity, authority and refined culture. The bust, a fine piece of sculpture, represents a very old man.

Medallions by Macphail and Tassie and a small water-colour portrait by Allan are in the Scottish National Portrait Gallery.

(For details, see L. Jolley, 'A Note on the Portraiture of William Cullen', *Bibliothek*, 1958, i, 27.)