The Hunterian Oration

ON,

JOHN HUNTER AND HIS MUSEUM.

DELIVERED AT THE ROYAL COLLEGE OF SURGEONS OF
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BY

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MR. PRESIDENT,—The century lacks but two years of completion when Dr. Matthew Baillie and Sir Everard Home, John Hunter's Executors, in their desire to show a lasting respect to his memory, provided for the delivery of an Oration on February 14th, his birthday. And although one should not now expect on these occasions to hear anything fresh concerning Hunter, still we come to the familiar subject as one goes to a favourite drama or turns to some well-loved book.

Adequately to deal with the work of this many-sided man, the Orator should be of philosophic mind, and well instructed in the history of Surgery, and he should have a profound knowledge of plants and animals—not only in health but also in disease. It being thus beyond my reach to touch more than the fringe of Hunter's scientific work, I shall content myself with speaking of him as a man, and as the founder of a Museum which is without a rival in the world.

Of some men it may be said, as St. Paul disparagingly remarked of himself, that they are "born out of due time." Some, indeed, so far in advance of it, that the intellectual seed which they laboriously sow produces but a sorry crop, or lies decaying in the soil. Hunter, however, was happy in the date of his birth. Had it been delayed by, let us say, a century and a half, so that at the present time he would be approaching what the poet calls the "midway of the journey of life," he could not have attained the commanding position which, as it was, he occupied in so many branches of Science. And had his birth been thus delayed, would he have chosen the philosopher's path which leads to the Temple of Wisdom? Would he have worked in the field which proved so attractive to Darwin, or in that to which Pasteur devoted his great mind? Would he have developed into a Pathologist of world-wide reputation—like Billroth; would he have contented himself with being the foremost Surgeon of his day, or would his thirst for collecting have triumphed over everything else? He could not have filled each part. I am inclined to think that he would have given up everything in order to devote himself to Biology.

John Hunter was the youngest of ten children, most of whom died young. It may have been on this account that his mother spoilt him—though *spoilt*, in this case, can hardly be the proper word. At any rate, he was allowed to have things very much his own way, his mother making him her Benjamin. It is good for no man to have things too much his own way at any time of life—least of all, at the beginning. And it might have been better for Hunter if his mother, instead of constantly giving way to him, had helped him in early life to obtain a command over his temper. For our hero was apt to be overbearing in his dealings with others, and intolerant when his wishes were thwarted. And this is made painfully evident as we come to deal with the closing years of his life.

When he was about 17 he went to stay with his brother-in-law, a cabinet-maker at Glasgow, and, being very proud of the skill with which he could use his hands, he delighted to help in the workshop. And so the statement has become current that Hunter began life as a joiner, which is very far from fact.

It is apt to be set forth in the life-history of any person who has made for himself a high position in the world of Science, Literature, or Art, that from early childhood he was seen to be in possession of unusual talent in that direction. Thus, for instance, Cimabue showed first proof of his great gift by making remarkable sketches upon his lesson-books, and it is related that certain popular preachers used to give displays of talent by fervid outbursts of oratory in the nursery or school-room—which, to

the common type of man, might seem out of place or even unwholesome.

But so it was not with Hunter. He was quite an ordinary boy. To use the words of his biographer, "having little taste for books, he preferred engaging in country sports to studying those elementary branches of knowledge which are best acquired in youth. In dwelling upon the story of his life it is a pleasure to meet with such an estimate of his character, for it supplies the needful human touch.

At the time that John Hunter was getting out of his teens, his elder brother, William, was conducting with great success a private Medical School in Windmill Street, Haymarket. He was a man of unrivalled talent, and though he was not connected with any Hospital, had established a great reputation for himself as a teacher of Anatomy and Surgery. John was much interested in, and his imagination was set on fire by, the accounts which he heard of his brother, and, as has so often been the case with self-reliant and enterprising young Scotchmen, he also desired to travel along that broad and pleasant road which leads from the stern country of his birth to the Mother-city of the Empire. So he wrote to William asking that he might be taken as an assistant in his Dissecting-room. A favourable reply having been received, John left Scotland on horseback for London in September, 1747. Up to that time he had been looked upon as an idler. Not infrequently it happens that a boy who has not yet been put to the work for which Nature intended him, has been thus regarded, till, by a happy turn of the wheel of Fortune, he finds the occupation for which he was fitted.

On arriving in London, John was at once put to work upon a dissection which was wanted for his brother's October lectures. This he did with such skill, that he at once gained the entire confidence of his brother. William had been afraid that John might turn out but an idle apprentice. And though he stuck closely to his work in the Dissecting-room and at the Hospital, he lived outside of them a somewhat free and reckless life. Like an ordinary, human, young man, "Jack Hunter," as he was called, liked to shake off restraint at times—and he shook it off very thoroughly.

Cheselden and Pott.

It is a proof, if proof were needed, of the warm interest which William Hunter took in the shaping of his brother's career, that he obtained for him the practical teaching and the friendship of the illustrious Cheselden, of St. Thomas's Hospital, one of the greatest of English Surgeons. He it was who invented the operation of lateral lithotomy; and, when French Surgeons came over to learn his art, they saw him operate on 27 patients for stone in the bladder in succession without a loss. And this, be it remembered, when stones, left uninterfered with, grew to enormous size, and when operations had not yet been made easy for the surgeon by the help of chloroform, nor safe for the patient by the adoption of methods of cleanliness.

Richardson's portrait of Cheselden, which you see before you, shows him as a cheery-looking individual who might never have known an anxious moment. History tells, however, that he was of such delicate fibre, that whenever he had to perform a serious operation he felt sick at the thought of the pain which he was about to inflict. And as he was constantly operating, it must needs be that his mind was much troubled.

He was sixty years old when John Hunter was brought to him—a worthy pupil for so great a master. Four years later he died of apoplexy, a not uncommon cause of death of members of his Profession—the result of high arterial tension brought on by ceaseless work. There is no eight-hours day for the Medical man; he cannot reckon on Saturday as a half-holiday, nor Sunday as a day of rest. It is this continuity of work, this never-ending strain of tissues, which brings about the early loosening of the silver cord, the breaking of the golden bowl.

Being thus compelled to look elsewhere for instruction, Hunter became a pupil of Percivall Pott, at St. Bartholomew's Hospital. A better choice could not have been made.

On the left of Hunter you see the portrait of Pott, by Romney, whom Reynolds disparagingly alluded to as

"the man in Cavendish Square"—Romney, whose delicate brush lingered so lovingly over the captivating features of Nelson's Lady Hamilton.

These three pictures have, by leave of the President, been brought down from our Council Room, where, for many years they have hung side by side, and where, we trust, in spite of all changes which may take place in the social and educational life of this country, they may continue happily to remain till Time shall be no more.

At the present day portraits of women by Romney are chiefly sought after, but I think that I would as willingly possess his picture of Pott as any that he painted. Even the most successful portrait painter cannot always choose his subjects; but when Romney had Pott seated before him he must surely have been satisfied, for truly his is a beautiful face! Those who can read a man's character in his features will form the opinion that Pott was a true English Gentleman. And their conclusion will be right. His devotion to his mother was romantic and intense; his kindness of heart was proverbial, and at one time he had three needy surgeons living under his hospitable roof. He was a man of high character and blameless life.

Shortly after his death his friend Sir James Earle collected his writings and published them, together with a short account of Pott and of his work. He said that the labours of the greatest part of his life were without relaxation, but that in his later years he took things more easily, "gathering," as Pott had expressed it, "some of the fruit of the garden which he had planted as he went along."

Though, after Pott's death, Hunter was by far the greatest Surgeon of the time, still he seemed to practise his Art chiefly to earn money for making additions to his Museum. He greatly disliked being called away from the Museum. "Well," said he, on one occasion, when he was summoned to see a patient, "I must go and earn this damned guinea, or I shall be sure to want it to-morrow."

Ottley, his biographer, apologizes for the strength of Hunter's language, and tells us that he has generally omitted the swear-words, as "the objections to introducing them appeared to outweigh any advantage that such verbal exactness could afford." Perhaps he was right; but I confess that I would have preferred Hunter's unpolished expressions just as they came from the mint of his strong brain. Moreover, one almost expects to hear such words echoing from the days when men wore velvet coats and silk stockings, and were accustomed to say just what they thought—and to say it clearly and forcibly. True it is that at this time Bob Acres remarked that the best terms grow obsolete, and that damns had had their day. But Sheridan's poetic imagination seemingly led him to anticipate.

Hunter's unfriendly biographer Jesse Foot wrote, "John could never talk of his injuries, but would get rid of the passions they provoked in him by the bitterest utterings of swearing—Sterne's Dr. Slop could not have been a match for him." It was pure spite that made Foot compare Hunter with that old-fashioned Yorkshire apothecary, who, we know, was unusually free in his speech. When, as you may remember, Dr. Slop cut his thumb in trying to loosen the string which Obadiah had so tightly knotted around that green baize bag, Sterne says, "It would have done your heart good, and cured you, Sir, for ever, of the vile sin of swearing to have heard him."

But I am indignant at Foot comparing John Hunter with Dr. Slop. My opinion is that he was jealous of the great reputation which Hunter had obtained in a class of practice in which he, Foot, was specially interested.

Hunter and Jenner.

It would be impossible to give even a short account of the life of Hunter without speaking of the close friendship which existed between him and one of his former pupils, a doctor in general practice upon the Gloucestershire bank of the river Severn, Edward Jenner—one of England's greatest men. His discovery that the passing of the harmless germs of cow-pox through the blood renders a person secure against small-pox was not revealed until after Hunter's death. But we may permit ourselves to imagine the pleasure with which he would have regarded the philosophic bearings of Jenner's investigations, and the delight with which he would have hailed their conclusion! But what would he have thought, could he have foreseen that his friend's glorious discovery

would at length be made a shuttlecock of political agitators, and that the cause of vaccination in the country of its birth should be so grievously neglected, that its compulsory adoption became a farce? The day of reckoning will surely arrive: England is sowing the wind, and she will not fail to reap the whirlwind. But, unfortunately, when the inevitable outbreak of small-pox takes place, among its victims will also be the ignorant and helpless.

Letter-writing was a far more important business 140 years ago than it is now; the art has been killed by the penny post. When Hunter was corresponding with his friend the postage of each letter cost, at least four pence, which is equivalent to about eight pence at the present day.

Hunter's letters to Jenner are delightful; and it is a great pity that we cannot have Jenner's in reply. In every letter Hunter is urging his friend to find material for his Museum—fish, flesh, fowl—any thing that has life, or that ever had it. And he was willing and anxious to pay for it. "You see," said he, "I am very greedy. Be sure you keep an account of all out-goings."

As a kind of set-off to what Jenner did for the Museum, Hunter was more than ready with advice and help to his distant friend when surgical patients caused anxiety in his practice. Now, in the winter of 1776 a particular case was giving Jenner much anxiety. It was that of a boy with an open wound in his skull, from which a mushroom-like growth was bulging. Jenner did not know how to cure the boy; if he had lived at the present day he would have been no wiser. So he begged Hunter to advise him. "I don't know any one I would as soon write to as to you," replied Hunter, and he then thanked him for certain things which he had sent for his Museum, and remarked that he had not yet received the cuckoo's nest. He would have had to wait a long while for a nest of that out-and-out socialist of the feathered tribe, who leaves to others the responsibility of the housing, the rearing, the feeding, and the education of his offspring!

"Now for your patient. I believe the best thing you can do is to do little. I would not touch the fungus with a caustic for fear the brain should be near. Keep your patient rather low and quiet."

And what excellent advice it was! Could the Council of the College of Surgeons of to-day suggest anything better?

But Jenner was not satisfied, for in a little while he was again questioning about the boy. And Hunter, with his Museum in his thoughts, wrote in reply:

"Send everything you can get, either animals, vegetable, or mineral, and the compound of the two, either animal or vegetable mineralized. I would have you do nothing with the boy but dress him superficially; these funguses will die and be damned to them, and drop off. Have you large trees, of different kinds, that you can make free with? If you have, I will put you upon a set of experiments with regard to the heat of vegetables. Have you any eaves where bats go to at night?" And so on.

Still Jenner was not satisfied, and in less than a fortnight he was again writing about this worrying case. Hunter replied:

"I would advise you not to meddle with it. Be quiet; and think yourself well off that the boy is not dead. You do not mention a word about bats. Have you got the bones yet of a large porpoise? I wish you had. Is ever the salmon-spawn seen after she has parted with it? If it is, I wish you could get some. I want to examine the spawn of fish in the progress of the formation of the young one."

In the next letter Hunter is asking again about the salmon-spawn, and is suggesting that Jenner should undertake some work upon the sex-question of eels. He appealingly ends the letter by asking, "Cannot you get me a large porpoise for love or money?"

I am tempted to keep you one moment more over these letters, because, being written to his dearest friend, they show the inmost working of his mind, and they plainly tell us that the one thought of his life was his Museum—

Dear Jenner, I received your salmon, and very fresh, and just examined enough to want another. I will take a cock-salmon when you please. If you catch any bats, let me have some of them. Did I write to you some time ago about cuckoos? I have forgot: if I did not, I must give you a long order.

He does not ask about that boy; nor, so far as one knows, does Jenner trouble him any further in the matter.

At about this time Jenner had fallen deeply in love, and just when things seemed to be leading up to a happy marriage, black disappointment threw over them his pall. Hunter, ignorant of what was going on in Gloucestershire, continued to write for various objects for the Museum. But he received no response. Then he heard a rumour of Jenner being married; so wrote to congratulate him, sandwiching his congratulations between remarks on hedgehogs and fossils.

On the broken-hearted Jenner replying that not only was he not married, but that, unhappily, all was over between the lady and himself, his friend replied—"I own I was at a loss to account for your silence, and I was sorry at the cause. I can easily conceive how you must feel. But let her go, and never mind her. I shall employ you with hedgehogs." And then he gave him a list of investigations which he was to make with these animals. His Museum was always in the front of his mind. Whether he was writing about a patient, or about his own serious breakdown; or about his friend's marriage or his grievous disappointment, he was ever thinking what he could do to render his Museum more complete, and so to increase its value as an educational institution. Another great reason for his anxiety to make it more perfect was, as his brother-in-law tells us, that it might sell the better after his death; for, having spent almost all his fortune over it, he had been able to make scarcely any other provision for his family; "his expenses had always exceeded his income."

Hunter's Daily Life.

Hunter was at work in his Museum from dawn till breakfast; and he was in his consulting-room, or in his carriage, and visiting his Hospital or his private patients, from breakfast till dinner—which he took, according to the custom of the day, at four o'clock. After dinner he went to sleep for an hour, and then he sat down to write letters and essays, to work up clinical records, or to describe preparations for his Museum. At midnight the butler brought him in a fresh lamp, by the light of which he continued to work on till one or two in the morning, or even later in winter. So that, including the nap which he had after dinner, he was apt to get but four or five hours' sleep out of the twenty-four.

We are plainly told that he had no home-amusements, and that he took his greatest pleasure amongst the wild animals which he kept in the garden of his house in Earl's Court where he slept, and where, with his family, he spent the greater part of his time in the autumn months.

What a life to live! Which of us would accept it, even to be, as Hunter is, immortal?

But Nature, ever jealous, could not pardon even him, her devout and loving disciple, for so long and complete a neglect of her unwritten laws. As far as one can make out, he took no bodily exercise, and sought little mental relaxation. The bow was never unstrung. As one looks back upon this unresting student of Nature, one can scarcely help regretting that he had no experience of those two amusements over which men and women of to-day are apt to waste so large an amount of time—golf and bridge. As recreations for intellectual workers, what more suitable: as life's chief occupations, what more pitiable!

There is little to suggest that outside of the science and practice of his Profession Hunter found much to interest him. The letters which he wrote and received, or, at any rate, those of them which have been preserved and published, make no allusion to sport or pastime; and there is no mention of foreign travel, that delightful relaxation for a busy man with no special interest in the pleasures of country life. Indeed, Hunter's one and only happiness was in intellectual work, and especially in that which concerned his Museum.

Every medical man should make for himself interests outside of his Profession to which he can devote himself in the odd times in which he can escape from the anxieties of his occupation. Intemperance in work is well-nigh as harmful as intemperance in eating or in drinking. In the absence of outside interests a medical man is truly to be pitied. When, with advancing years, he unwillingly retires from the contest, if there is nothing better for him to do than to look wistfully backwards or sorrowfully forwards, the evening of his life must indeed be dark and

miserable. But happily there was no evening to Hunter's life; he died before the lengthening shadows fell across his path.

Hunter and the College of Surgeons.

The records of our Corporation show that at a Court of Examiners held in July, 1768, John Hunter was examined for and received his Diploma. Amongst his Examiners was his former Master, Percivall Pott. Hunter was then 40 years old. Already we have heard of him in connexion with the Corporation in the Minutes of the Court of Assistants of July, 1753, where it is stated that Pott and Hunter were elected Masters of Anatomy.

In accordance with the by-laws, the Court had to make six anatomical appointments each July—Two Stewards of Anatomy, two Wardens of Anatomy and two Masters. The business of the stewards was to prepare the subjects for the lectures; of the Wardens to act as Demonstrators, and of the Masters to give the Lectures.

It was the duty of the Court of Assistants to choose these officers from amongst the Members of the Corporation. The appointments were for one year, and if a Member thus chosen said that he wished to be excused from holding the Office, he was fined "twenty one pounds lawful money," for so it was nominated in the Bond. The plea of incompetence for the task, or of illness, was not taken as an excuse—the work had to be done or the fine had to be paid. Fines of all sorts were, indeed, the great source of income to our Corporation in those days.

In the minutes of the Court of Assistants of October 5th, 1786, it is recorded that Mr. John Hunter had presented to the Corporation two volumes of his *Natural History of the Human Teeth*, and a copy of his *Treatise on the Venereal Disease*, and in accepting them, the Court passed him a Vote of thanks.

When, in 1745, an Act of Parliament enabled the Surgeons to free themselves from the Barbers, they became a Corporation under the Government of a Master and a Court of Assistants—21 in all. Shortly afterwards they built for themselves a Hall in the Old Bailey. And early in 1789, in order to fill the vacancy caused by the death of Pott, Hunter was elected a Member of the Court—which corresponds with the present Council of the College. Appointment was for life, and as Hunter died in 1793, he was a Member of the Court for four years and a half. Foot says that during this time he attended only one meeting. That, however, is a misstatement—"calculated and frigid."

The Court met quarterly, and it had now and then, in addition, a special Meeting. Hunter was elected in February, 1789, and in the following April he came to be admitted, taking the oath and paying the fine of twenty-one pounds. There were three other Meetings in the year of his election, at each of which he was present; and there were five in 1790, from only one of which he was absent. There were six Meetings in 1791, but he attended only two of them; in 1792 there were six meetings, two of which he attended, and in 1793, in the October of which year he died, he was present only once. Altogether he attended fourteen Meetings out of twenty-six, which is, indeed, a very poor record.

In his last two years he was absent from eight Meetings out of eleven, and my explanation for his increasing lack of interest in the affairs of the Court of Assistants is that he got on badly with his fellows, and especially with three highly placed Members who came from his own Hospital, Gunning, Walker, and Hawkins. Though there may not have been open enmity between him and them at that time, they certainly were on unfriendly terms. Indeed, Otley tells us that they were frequently in collision.

At a Meeting on November 7th, 1793, as recorded in the Minutes, "The Master reported that since the last Court of Assistants, Mr. John Hunter, a Member of the Court, had departed this life, and declared a vacancy in pursuance of such his death."

Nothing further is noted: no Resolution of Regret or of Condolence appears to have been passed. And Dr. Peachey, who has kindly examined for me the Minute-books of St. George's Hospital, says that he can find in them nothing more than the bare notification of his death.

There is no denying it: Hunter did not agree with his fellow-practitioners. Foot affirms that he hated his equals

in the Profession, and it was probably true, for Ottley writes that his manner to them was "blunt and overbearing." As Surgeon-General to the Army he had great patronage, and he was in the habit of refusing recommendations which other Surgeons made for vacant military appointments, and of giving pretty nearly everything to his own pupils and associates. This made him highly popular amongst his friends, but it was gall and wormwood to the other Hospital Surgeons, many of whom were upon the Court of Assistants. If he could have foreseen that this College was eventually to have the guardianship of his Museum, things might have been different.

When, six years after his death, Parliament purchased his Museum for the Nation, it was offered first to the Royal College of Physicians, and it is only because of their declining to accept its custody that Government entrusted it to our keeping. But had the Trust been accepted by the Sister College, she would have found a medical and a philosophic side to Hunter's work which would have justified her in giving him an honoured place by the side of her Harvey and her Sydenham. Fortune, however, was not blind when she settled that the world-famed collection, with its countless associations, should be handed over to this College. And justly may it be claimed that nowhere else could the conditions of the Trust have been more faithfully or devotedly observed!

Hunter's Illness.

It has been truly said that a man is as old as his arteries, and, looked at from this point of view, though Hunter's age at his death was under 65, he had for many years been far older than that, for he was the subject of advanced arterial disease. It is impossible to say at what time the disease began; it comes on so slowly that for a long while there may be nothing to call attention to its presence. But in the Spring of 1773 he had an alarming attack of spasm, in which for about three-quarters of an hour his heart stopped beating; it was apparently caused by mental worry. Four years later he had a still more distressing attack which was also brought on by anxiety. And this time he suffered from a continuous giddiness which prevented him raising his head. The mental shock so affected his feeble heart that it was unable to pump blood to the brain through the narrowed vessels. But though this must have been felt by him to be a warning, he evidently did not allow it to cause him alarm. This is the way in which he refers to it in the middle of a letter which he wrote to Jenner a few weeks afterwards: "I had the pleasure of seeing your brother, but only for a time. I received the bird; I am not acquainted with it. Send me some more if you can get them readily. Not two hours after I saw your brother, I was taken ill with a swimming in my head, and could not raise it off the pillow for ten days. It is not yet perfectly recovered. Have you begun the eels. No porpoises. No salmon-spawn before it is hatched. You see I am very greedy."

This letter is especially interesting in the light of those other letters. In them, as you remember, when Jenner was anxiously asking how he should deal with that boy with the damaged head, Hunter could, apparently, think of little but his Museum. And here, when Hunter is telling Jenner how Death had been giving what was, as a fact, his second loud knock, he refers to it merely as an incident, between the welcoming of a rare bird to the Museum and a reminder that Jenner has not yet told him of the result of his researches concerning the eels. What a mental picture it offers—Hunter discussing the sex-problem in eels whilst Death is waiting at the door!

But though Hunter gave little heed to his illness, his doctors insisted on his going for a complete rest to Bath. And as soon as he was settled there Jenner went over to see him—a journey of about twenty miles—and was alarmed by his altered appearance. He said nothing to Hunter, however, but he wrote to his London physician giving it as his opinion that all the trouble was due to imperfect nourishment of the heart-muscle, the result of arterial disease. And Jenner was right.

After remaining three months at Bath, though by no means recovered, Hunter went back to London and set to work at his Museum and his practice as if nothing had happened.

In 1785—that is, eight years after his last attack, and as many before his death—his disease caused him increasing

distress, and especially so when he was angry; and as he grew older his temper did not improve. He would fly into a passion for very little cause, upon which an attack would come on, leaving him exhausted and miserable. It is a sad story—the man of giant mind such as the world rarely produces, worn out with incessant work and insufficient rest, torn to pieces by an ungovernable temper, and left, at shortening intervals, faint and helpless! It was all very well to call his complaint "flying Gout"—whatever that may mean—it was something far more serious. Once more he visited Bath—but with little success. Indeed, he was in such a poor state of health that any other man in his position would have given up work altogether and retired into private life.

Dante reminds us that there comes the time to each one of us when, like a mariner approaching the port, he should lower the sails and gather in the ropes.* But Hunter refused to see that this had come to him. Though he knew that his days were uncertain, he felt that life without work would be intolerable. Above all things, his Museum must be attended to. So he came back to London, and (November, 1785) again put on harness.

Having thus brought you to look upon Hunter as a man bankrupt in bodily health, which, indeed, he was, I wish you to see, by contrast, that his mind was in full vigour, for it was at this time that he thought out and carried into execution a new operation for the cure of aneurysm—a piece of work which alone would have sufficed to place him for ever in a niche in the Temple of Fame.

Time will not allow me to do more than merely refer to the great advance which this measure effected in the march of Surgery. But I think it right to take this occasion of saying that its conception was the direct result of an experiment carried out on a living animal. And if no other piece of useful knowledge than this had ever been established by such method of experiment, it alone would abundantly justify the resort of the man of Science to the use of what is commonly spoken of, and too often spitefully spoken of, as vivisection.

His Ill Health Accounted For.

One cannot deal satisfactorily with the question of Hunter's ill health unless one keeps in view the fact that, as the result of what must be called a "vivisection" experiment upon himself, he became the subject of constitutional syphilis. Though he had abundant opportunity of studying the progress and the effects of syphilis in patients coming to him for treatment after accidental infection, he desired to watch its course in a less impersonal manner. So he calmly dipped a lancet in venereal matter and inoculated himself with it. The experiment was a highly risky one, and it proved disastrous. Medical men and medical students have in all times been willing to offer themselves upon the altar of Science, in the hope of solving some pathological problem or of helping onward some scheme of treatment which might prove useful to their fellow-creatures. Hunter's trial upon himself by no means stands alone.

Hunter was then in his 40th year. He well knew the seriousness of the constitutional disease with which he had infected himself, and, whilst watching its progress, he found that he could check it by a certain line of treatment; but he writes that as soon as he found himself thus getting better he stopped the treatment, "for the intention was not to cure the disease completely at present." In due course his throat became ulcerated; and, having again adopted enough of the treatment to cause the ulcer to "skin over," he once more ceased it, as he did not then wish to destroy the poison, "but to observe what parts it would next affect." In three months copper-coloured blotches broke out on the skin, and ulceration once more attacked the throat. At a later date, when he thought that he had learnt all that was possible from his experiments, he set to work to cure himself. From the date of his inoculation to the completion of the treatment of the disease was about three years. He was apparently satisfied that the knowledge which he had thus obtained was sufficient reward for the inconveniences which he had undergone; but no

* *quella parte*
Di mia eta, dove ciascun dovrebbe
Calar le vele e raccogliere le sarte.

medical man, looking back, would share with him that feeling of satisfaction. The price paid was far too heavy!

There can be little doubt that the progressive arterial degeneration of which he was the subject was greatly, if not altogether, due to that self-inflicted disease, from the effects of which he never actually recovered. Not only did it render him feeble in body, but it also disturbed the balance of his mind and made him increasingly restless and irritable. Thus to think upon Hunter and his illness is to enable one to look upon his vast achievements with increased respect, and to regard his failings with unstinted sympathy. The longer one lives the more fully does one realize the truth of the French proverb which tells us that to understand all is to forgive all!

Hunter, Pasteur and Lister.

Just now, when speaking of the friendship which existed between Hunter and Jenner, I referred to the delight with which Hunter would have looked upon the discovery of vaccination as an almost certain protection against small-pox, which his earlier death prevented him witnessing. And as the Shade of Hunter wandered through the Elysian Fields, he must have offered a warm welcome to another kindred spirit of the commonwealth of Science, and one of its brightest ornaments—Pasteur—who joined him after a hundred years. With what pleasure would these men discuss the many subjects which lay within the space in which the work of the physiologist overlapped that of the physicist! With what interest Hunter, one of the earliest friends of our Royal Veterinary College, would listen to Pasteur's account of the outbreak of the Cattle-plague in France, of the pestilence amongst the silkworms, and of the diseases of wine and of vinegar, all of which he had made to disappear by the touch of his magic wand! and with what approval would he follow Pasteur's account of the way in which he worked out his theories in connexion with that terrible disease, hydrophobia, and established their truth by experimentation on the animals themselves! What a group is it—Hunter, Jenner, and Pasteur—Jenner, Hunter's friend in the flesh, and Pasteur in the Spirit!

And having thus spoken of the spiritual association of Hunter with Pasteur, it will be but a short step to connect Hunter's ideas with those of our Lister. For the range of his mental work in Surgery (as was first pointed out to me by Mr. Dent) did actually touch that of Lister. Hunter is lecturing to his pupils upon hectic fever, which we now know to be the result of slow blood-poisoning, and these are his words:

"We have as yet, I am afraid, no cure for this. I believe the cure consists in the removal of the cause—namely, the local disease. Strengtheners and antiseptics are recommended. Strengtheners are proposed on account of the debility which has evidently taken place, and antiseptics, from the idea of absorbed pus giving the blood a tendency to putrefaction."

Here then is Hunter, a hundred years before Lister, talking about pus and putrefaction, and ascribing hectic fever to blood-poisoning, just as Lister would do, and, moreover, saying that the disease should be treated by *antiseptics*—using Lister's favourite word.

Hunter had thought it out for himself, turning the rough idea over in his philosophic mind until he had it ready for presentation to his students.

Look at him in Reynolds's magnificent picture. He is seated at a table with an open book beside him with drawings of skulls; there are also on the table an anatomical preparation and two closed volumes. But evidently his thought is not with *them*. His face shows that he is deep in meditation, and that his thought is far away—a hundred years forward, as likely as not. And, if so, may it not be that at that very moment it is on the fringe of the work of Pasteur and Lister? At any rate, at one time or another he was within touch of Lister's immortal discovery. And he could have reached it without the help of a microscope. He might, like Pasteur and Lister, have put the fresh-boiled broth into a sterile vessel; and, having shielded it from dust, kept it sweet for weeks. Then, carrying out the same idea with a clean surgical wound, and treating it with "antiseptics," he would there also have secured the wished-for result—its prompt healing. By the broth losing its clear appearance and its wholesome smell, as by the wound becoming swollen,

offensive, and bathed in pus—the result of their having been infected—he would have been led to see and grasp the great truth, and then would have worked out the simple and beautiful antiseptic theory as we practise it to-day. But in a mind so crowded with ideas that it was, as he said, "like a beehive," it might not have taken much to turn aside that current of his thoughts. So that, if, by chance, a vision of the antiseptic method was occupying his thought when Reynolds caught that charming expression, a casual remark from the painter might easily have caused it to vanish into thin air.

The portrait was painted in May 1785, three months after Hunter's 57th birthday, but it shows him looking a good deal older than that. Indeed, Everard Home says that, after his serious attack, "he gave the idea of having grown much older than could be accounted for from the number of years which had elapsed."

The picture was hung in the Exhibition of the Royal Academy of the following year, as the "Portrait of a Gentleman." But in the course of time, on account of the nature of the pigments used, it darkened and cracked and threatened to go to ruin. At last, when its condition seemed well-nigh hopeless, it was restored by an expert named Farrar, who in the course of his remarkably successful work, removed the paint from the old canvas and re-applied it upon a new one.

The story of the painting of the picture is well known—Reynolds found Hunter a bad sitter. Probably Hunter did not like being under control, and became as difficult to pose as a restless boy at a photographer's. And so it came about that, though the picture was far advanced, the artist was not satisfied with it. One day, however, Hunter fell into a waking dream as he sat, and "Reynolds, without a word, turned the canvas upside down, made a fresh sketch, with the head between the legs of the former figure," and obtained the result which you see.

Much the same thing happened when Mrs. Siddons was sitting to Reynolds as the Tragic Muse. He had already sketched the head and face, and when he had turned away from his easel to mix some colour, Mrs. Siddons changed her position in order to examine some picture hanging on the wall. Reynolds was so pleased with this natural pose that he begged her not to move, and he then painted her as she is seen in the glorious picture at Grosvenor House.

In a lecture on Sleep, Hunter says: "It is even possible to dream when awake; it is only necessary for the thinking power to take possession of the mind, and proceed with an action with which the present sensation has nothing to do. Now, whenever the body loses the consciousness of its own existence, it may be called a waking dream, and this is often the case when people are in deep thought."

In this great picture Hunter is truly in a waking dream; and no one will venture to contest the point if I suggest that he is dreaming of putrefaction, of suppuration, and of the antiseptic system which was to come!

The picture was presented to the College by Hunter's son, in February, 1821, with the accompanying letter, addressed to the Secretary:

Sir,

I have no doubt that the placing the portrait of my dear Father, the late John Hunter, Surgeon, in his Collection will meet with the wishes of the College of Surgeons, and that the gift of the above portrait will be acceptable to them. I do not think it can be more appropriately situated or more worthily disposed of. I therefore beg leave to make them the offer, and to add that I shall think myself honoured by their acceptance of it.

I am, Sir,

Your obedient servant,
JOHN BANKS HUNTER.

Hunter and St. George's Hospital.

Hunter's colleagues at St. George's Hospital regarded him as a dreamer, and refused to see that his physiological studies could have any useful influence on the work of the practical surgeon; whilst Hunter, from his high standpoint, looked down upon them, and treated them with scant respect. Thus there was between him and them an

entire absence of that good feeling which it should be the duty of every member of a Hospital Staff to cultivate, not only for his own happiness, but in the interests also of the Hospital, the students, and even of the patients.

At the beginning of 1792, when Hawkins retired from the Hospital, Hunter did his utmost to secure the election of Mrs. Hunter's brother, Everard Home, to the vacant post. Gunning and Walker, however, fought against him to get in Thomas Keate, who proved successful by 134 votes against 102 cast for Home. "This," says Otley, "could scarcely fail to heighten existing animosities." Those two words "existing animosities" give clear proof that Hunter greatly disliked Gunning and Walker, and I am going to assume that Hawkins (into whose vacancy at St. George's Hospital Keate had been elected) sided with them against Hunter.

Those of us who have had experience of the wretched system of election to a Hospital Staff by canvass and open vote, can understand the bitterness caused by the Keate-Home contest—a bitterness made all the greater by the fact that it was somewhat of a family affair. As a result of his defeat, the iron entered deeply into Hunter's soul, and he turned round on his colleagues and declared that he would no longer agree to the division with them of the surgical pupils' fees, and that for the future he meant to keep for himself all moneys paid by students who entered under his name. He claimed that he did this in order to stimulate the other Surgeons to do better for the students than they had done in the past, as, in his opinion, their neglect had brought disgrace upon the Hospital.

Gunning, Walker, and Keate replied; and, whilst admitting that more pupils entered under him than under them, claimed that they did so from a knowledge of the fact that he would be likely to find Army appointments for them later on. And they set forth this unanswerable objection to his scheme, that if a pupil entered the Hospital for the practice of one surgeon, he would be unable to watch the work of the other. To have agreed would have been to admit that they had actually been blameworthy; but they said that they would like to have the matter referred to the Governors of the Hospital. Hunter replied that he accepted their proposal, and that he would meet it "fairly and very willingly." And before the Meeting he sent a long printed document to each Governor setting forth his case.

Hunter's scheme, which was conceived in a moment of wrath, was an impossible one, and the Governors rightly gave their decision against it. And after this, in order to promote the smoother working of affairs at the Hospital, a Committee was appointed to draw up a Code of Regulations, amongst which was one forbidding the admission of pupils who had not already received some medical instruction. The effect of this would be to shut out young fellow-countrymen of Hunter, who were attracted to the Hospital by his reputation and success. Indeed, soon after the adoption of the Code, two Scottish youths, without any knowledge of medical work, applied to Hunter to be received as his pupils at the Hospital. He told them of the new law, but promised to try and obtain permission for them at the Meeting of the Board which was to be held on October 16th.

Hunter's position at that time was not a happy one. He had quarrelled with his colleagues, and had twice been beaten by them in contests before the Governors of the Hospital, and he was now going to engage in another fight with them. Worse than all, he was the subject of a disease which gave him distress whenever he was excited or angry.

Something told him that disaster was close at hand. As he was addressing the Board at St. George's Hospital, a member of it, possibly Gunning, gave him a flat contradiction, on which he stopped speaking, hurried into an adjoining room, and fell lifeless in the arms of one of the Physicians!

A more dramatic ending to a strenuous life could not be imagined; and doubtless it called to the mind of many people the sudden heart failure of Chatham when he was addressing the House of Lords a few years before. But between Chatham's seizure and his death there was a delay of some weeks, whilst Hunter's death followed his attack with awful suddenness, as when the deafening thunder rolls upon the vivid lightning-flash.

If, as I claimed just now, Hunter was happy in the time of his birth, equally so was he in that of his death. He was then in his 65th year—an age at which he could not expect surgical practice to be increasing. His heart-disease was steadily getting worse, and he himself more irritable; and though he was still full of energy, he was wanting in strength. His Museum, daily growing larger, was making heavier demands upon his purse, and he had already spent so much upon it that he had but little private means. Surely Death came to him as a friend, as, indeed, he comes to most of us, if only he does not too long delay his coming.

On examination after death, it was found that his heart was wasted and small, its muscular tissue being "pale, and loose in its texture." The arteries of the brain, and of other parts, were thick and rigid.

Commonly it happens that when a man's arteries are diseased the muscular wall of the heart grows stronger and more massive in its effort to pump blood through the resisting tubes. But as Hunter had not been in the habit of making vigorous calls upon his heart by physical labour, his heart possessed no reserve of force, and readily gave up the unequal struggle. In an ordinarily healthy man, taking a fair amount of exercise, if the heart is called upon to do extra work—as in the case of valvular or arterial disease—its muscle becomes thick and strong, like that of the blacksmith's arm, but the heart of Hunter actually shrank from the task. And, just as Jenner had foretold sixteen years before (after that visit of Hunter to Bath), the arteries supplying its muscular tissues were converted into bony canals. The aorta was dilated, and all the valves of the heart were out of working order.

There are few great men the details of whose life are so well known as are those of John Hunter's. His history is an open book which any one may read. And though we fully recognize the grandeur of his intellect, we also see his weaknesses and admit his faults. No part of his industrious life is hidden behind a curtain which the historian feels it better to leave undrawn. We are told almost every detail; we know the full story of his death, and we have a sufficient account of the result of the examination of his body after death to enable us clearly to understand its cause. And as we learn of the gross changes which were revealed in his arteries, the opinion grows stronger that they were to a large extent the result of those disastrous experiments which he made upon himself a quarter of a century before.

When reading the biography of a man, one expects to find that as he advances in years the little faults of his earlier days disappear, and that his views, his interests and his hopes become wider—that, in short, his character gradually takes on the richer tints of autumn. But so it was not with Hunter. The sunshine and the rain which had come into his life had had no mellowing effect upon him; the jealousies and the bitterness of his nature steadily became more marked. And from what one knows of the results of syphilitic degeneration of the blood vessels, one would probably be right in ascribing the early coming on in him of old age, and the growing irritability of his temper, to the effects of that disease with which he so unwisely inoculated himself.

This great High-Priest of Nature ought, of course, to have been buried in Westminster Abbey; but no invitation was forthcoming. In those days Theology looked askance upon Science. So the body was enclosed in a coffin and quietly placed in the vaults of that church which stands between the Strand and Trafalgar Square, for, as Hunter lived in Leicester Square, St. Martin's-in-the-Fields was his parish church. And there it would probably have been to-day, but that, in the beginning of 1859, a member of our Profession, Mr. Frank Buckland, saw a notice in the "Times" to the effect that by an Order in Council the vaults of St. Martin's Church were to be bricked up. Believing that the body of Hunter was lying there, he visited the church, and found the following entry in the sexton's Register, concerning Hunter's funeral arrangements, under the date of October 22, 1793—

"John Hunter, Esq., Leicester Square, No. 3 Vault.
£6.10. No candles; $\frac{1}{4}$ past 4.

Buckland made it his care to find the coffin.

On the door of Vault Number Three being opened, he saw, by the help of a bull's-eye lantern, that the vast

space was stacked with coffins from floor to ceiling, in "most admired disorder." Some were lying east and west: some north and south: others were placed cross-wise, and some were standing up on end. Every one of these had to be taken out so that the name-plates might be read. This was a long and gruesome business, as the coffins were heavy of oak and lead, and he and the men helping him spent fifteen days over it. At last, when upwards of 200 coffins had been fruitlessly examined, there were only five left at the end of the vault; and as he could read the names on the three uppermost of these, he feared that his chance of reaching the object of his search was small. However, on one of the last two he had the satisfaction of finding the inscription,

John Hunter, Esq.,
Died 16 October
1793
Aged 64 years.

And above these words were engraved the arms of the Hunter family.

Thereupon the Council of this College approached the authorities at Westminster, and asked that the body might be granted tardy burial in the Abbey. The Dean, Dr. Trench, worthily replied, "We shall be proud to be the guardians there of the ashes of so great a man."

The coffin, therefore, was brought to the Abbey; and on March 28, 1859, in the midst of a crowd of illustrious persons, all that was mortal of John Hunter was laid in the earth of the North Aisle, not far from the last resting place of Isaac Newton. And as the coffin was being lowered into the vault, the organ pealed forth that magnificent chorus from Handel's Funeral Anthem,

"His body is buried in peace; but his name liveth evermore!"

To you, Mr. President, and to me, as to others who are devout worshippers at the Shrine of Hunter, there may appear little or nothing in this Address which is worthy of attention. Still, it may be hoped that in its course some stray thought may have been set free—as when a flint strikes steel—which, falling upon the mental tinder of some younger man, may cause the springing up in him of a flame to illuminate his studious path and help him onward. Indeed, without the hope of some such effect resulting from a Hunterian Oration, the pious intention of John Hunter's Executors might well be allowed to sink into oblivion.

And even for those of us whose thoughts should be directed to the lowering of the sails of their bark, and the gathering in of the ropes, there will still remain a place in the mental vision for the picture of a raw Scottish lad coming up to a great City in which he had but one friend, and, possessing nothing beyond the rudiments of an education, seeking his way to a position in the world of Science and of Art such as it is the lot of few to attain, and, without any indebtedness to the goddess Fortune, reaching it by dint of industry, vigour and determination.

THE number of persons who visited the Royal Botanic Gardens at Kew during 1910 was over three and a half millions, the largest number on record. It seems a very large number until we recollect the enormous population which lives within ten miles of the gardens, and think of the great number of persons who visit London during the spring and summer months to see the sights. Undoubtedly one of the most beautiful of these is the garden at Kew, whether it is seen in its spring or its summer dress. But the garden has a scientific as well as an æsthetic attraction, for a great deal of important scientific and economic work is done there. Apart from growing things, the dried collections and the wonderful set of drawings of tropical vegetation by Miss North are alone worth the easy pilgrimage, for the objection which used to be made against Kew that it was inaccessible no longer holds good. With the help of underground railways and electric tramways it can be reached *tuto cito et jucunde*. It is worth while to add that when a foreign visitor, or one of our overseas countrymen, asks about the Botanic Gardens the Londoner would do well to direct the inquirer to Kew rather than to the gardens of the Royal Botanic Society in Regent's Park. That society does much good work, but it is hampered in many ways, not least being lack of funds, and its gardens, interesting as they are, compare favourably with the great botanic gardens in other countries. Kew, on the other hand, is not unworthy of such a comparison.

The Lettsomian Lectures

ON

A REVIEW OF THE OPERATIONS FOR STONE IN THE MALE BLADDER.

DELIVERED BEFORE THE MEDICAL SOCIETY OF LONDON.

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—It is known that operations for the removal of vesical calculi have been performed for over two thousand years, and we are indebted to Celsus for a clear description of the method then adopted, which, with but little variation, kept the field for over fifteen hundred years, and was at times practised as lately as two hundred years ago. This operation seems originally to have been regarded as beyond the scope of the practitioner of that time, for we find that those who took the Hippocratic oath bound themselves not to perform this operation; the disciple, taking the oath, said, "I will not cut persons labouring under the stone, but will leave this to be done by men who are practitioners of this work." No wonder, then, that the operation fell into the hands of quacks and irregular practitioners, but in justice to them we must remember that the first step of putting the operation on a sound foundation was taken by a man who was in no sort of way qualified as a practitioner of medicine. When we remember that this operation has not only been brought before societies of learned men, but before princes, parliaments, and men in high position, there is sufficient of interest to warrant our giving it some attention. We may safely conclude that a person suffering from a vesical calculus in those distant days had to put up with the pain and distress until his condition was desperate. There was no early diagnosis of stone then—indeed, the stone was detected not by the sound, but by introducing the fingers into the rectum and feeling it through the anterior wall. The next step was to recognize that it could be pressed forward against the perineum, then, when this was done, it was but one step farther to suggest that the intermediate parts should be cut with a knife and the stone extracted. Such were the steps by which the first simple operation was arrived at. It is possible also that the sloughing of the perineum, due to the presence of a stone impacted in the deep urethra, thus allowing it to come away, may have suggested the division of the soft parts as a means for its extraction. This operation, from its having been described by Celsus, has been called the *Lithotomia Celsiana*, or, from the use made of the fingers in pressing down and holding the stone, it has been called cutting on the gripe, and when in later ages more complicated operations were invented and many instruments used, this was named the apparatus minor, or lesser apparatus, from its being performed with no other instrument than a knife and a hook. Such an operation as this, requiring no knowledge of anatomy for its performance, could be undertaken by quacks, whose only desire was to extract the stone, and who were indifferent as to any complications which might arise afterwards. Apart from these, however, it was performed by regular practitioners, and for many centuries was in considerable favour. Celsus describes the operation as one which,

when all others fail, must be performed on those afflicted with the stone; an operation which, since it is full of danger, must never be rashly performed, nor at all times and seasons, nor in all ages, nor in all degrees of the malady; but only in the spring in boys from 9 to 14 years of age, and when the disease is so desperate that it can neither be cured nor even alleviated by medicine, but when the person must die in a little while.

Such, then, were the conditions justifying the operation. It is difficult to understand why the operation should not have been performed on boys under 9 years of age, as it could have been carried out as well before that age as after. In the adult there were difficulties, arising from the size and depth of the perineum, which may have rendered it more dangerous than in boys. The operation