

The Hunterian oration, delivered at the Royal College of Surgeons, on the 14th of February, 1846 / by W. Lawrence.

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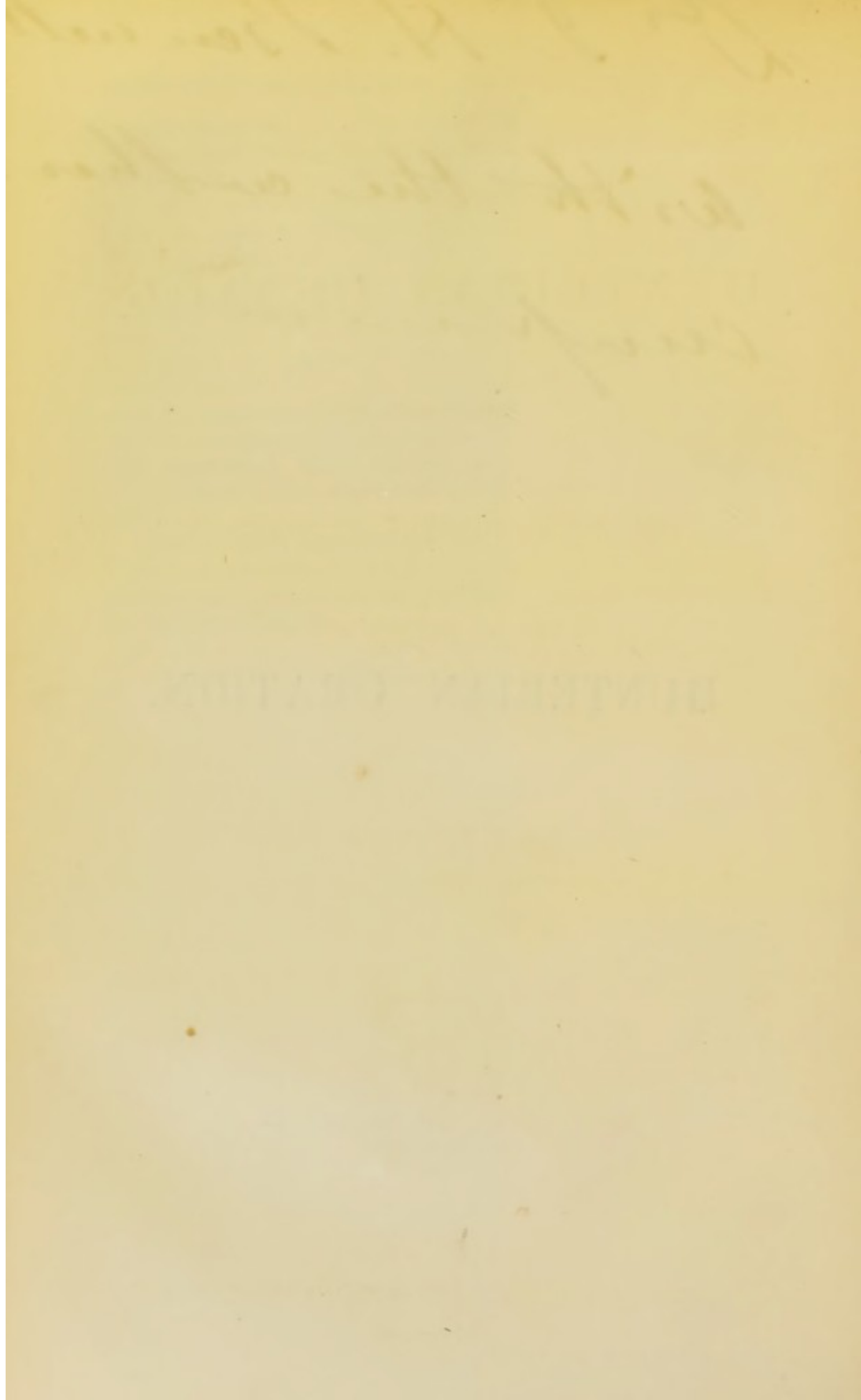
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Dr. J. H. Bennett

with the author
compliments.

HUNTERIAN ORATION.



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THE
HUNTERIAN ORATION,

DELIVERED AT

THE ROYAL COLLEGE OF SURGEONS,

ON THE 14TH OF FEBRUARY, 1846.

BY

W. LAWRENCE, F.R.S.,

SURGEON EXTRAORDINARY TO THE QUEEN.



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A D V E R T I S E M E N T.

ALTHOUGH I did not volunteer to deliver the Hunterian Oration, but undertook the task, declined by other members of the council, at the request of some of my colleagues, neither those gentlemen nor any other members of the body knew beforehand the subjects or arguments of the address, for which, therefore, I am solely responsible. I regret extremely that passages of this oration should have given offence to any of my professional brethren. I had not expected that they could excite such feelings, inasmuch as my remarks, to which no suspicion of individual application can attach, were directed only to what have been always considered fair subjects of inquiry and discussion, namely, the constitution and proceedings of public bodies, and the acts of volun-

tary associations formed for the purpose of accomplishing public objects. No institution has been exposed to more rigorous and unsparing scrutiny than the Royal College of Surgeons of England; and no observations on that body, of whatever character, would have given me the slightest annoyance. I had not, therefore, anticipated that my arguments or expressions could be offensive to any portion of an audience, none of whom could be supposed unfriendly to that freedom of discussion on public questions, which is one of the best means for exposing error and establishing truth. If I had entertained such a supposition, I would have endeavoured to express differently the opinions which I have always held, in common, I believe, with a great part of the profession, and which I have stated on other occasions without any exception being taken to them; and I now offer my sincere apology to any gentleman, whom I may have thus unintentionally offended. Indeed, I hope and expect that, although detached passages might be so represented and understood as to bear an offensive construction, the following address, when viewed as a whole, will not be found to afford any just cause of offence.

Objection or complaint would come with an ill grace from members of the Apothecaries' Company, after the

freedom of remark in which they have indulged. That body, in its collective and public character, has sent forth a "Statement," and an "Address," in both of which it is represented, and argued at some length, that the Colleges of Physicians and Surgeons could not be safely entrusted to direct the education and conduct the examinations of general practitioners, because it would be their interest to lower the standard of education and qualifications for that branch of the profession: because, in other words, they might be expected to sacrifice their public duty as examiners, to their supposed interest as practitioners. No imputations of that character will be found in the following pages.

WM. LAWRENCE.

Whitehall Place,

March 10, 1846.



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HUNTERIAN ORATION.

MR. PRESIDENT AND GENTLEMEN,—

It is the glory of this country to have produced three of the greatest, if not the three greatest, men in the annals of medicine—WILLIAM HARVEY, JOHN HUNTER, EDWARD JENNER.

HARVEY made the most important single physiological discovery, that of the circulation; thus affording a clue to what had been previously an inextricable maze of multiplied and intricate movements. Until the true motion of the blood was known, there could have been no science of physiology. Hence, he has been justly termed

“*Physiologiæ lumen; Angliæ immortale decus,*”—

The light of physiology; the immortal glory of England.

HALLER, a most competent judge on such a point, and not given to extravagance of encomium, calls him, “*Novum artis lumen; cujus nomen ab ipso retro Hip-*

pocrate secundum est.”—A new light of our art, whose name stands next in rank to that of HIPPOCRATES.

HUNTER was the first to cultivate the extensive field of general anatomy, though that expression was not used in his time, and does not, I believe, occur in his writings. With the daring, that could only have been prompted by the consciousness of intellectual power, he undertook, single-handed, to explore the structure of animals, through the whole extent of animated creation, including, in his researches, plants also, as living, though not sentient, beings, and therefore forming a link in the great chain of organic existences. He investigated every organ, in all stages of its development, both in the individual and in the ascending scale of being, from the simplest to the most complicated forms, in order to discover the general laws of organization and life. He gave a new form to surgery, by allying it to physiology; and thus he laid the foundation of rational pathology, or, as he called it, physiology of disease. All that he did bears the unequivocal mark of inventive genius,—that stamp of sterling value, which is not to be effaced by lapse of time, fluctuations of doctrine, or caprices of opinion.

It fell to the lot of JENNER, the favourite pupil of HUNTER, to make the most important practical discovery in medicine, that of vaccination. Hence he has been hailed by the unanimous voice of all countries, as one of the greatest benefactors to mankind.

HARVEY was a fellow of the College of Physicians; HUNTER and JENNER were surgeons. The latter, although commonly known as Dr. JENNER, was educated

as a surgeon, and practised surgery for many years. He subsequently received the degree of Doctor of Medicine from the University of St. Andrews; this being one of the cases in which a diploma confers honour, not on the recipient, but on the learned body, which is permitted to grace its annals by the inscription of so illustrious a name.

JENNER completed his surgical education under the roof of Mr. HUNTER, who kept up a constant correspondence in after life with his pupil, employing him in physiological experiments, and pointing out to him subjects for investigation. We are probably indebted for the discovery of vaccination, to the love of science and the active spirit of research, awakened and kept alive in the mind of the intelligent student by the example and precepts of the great master.

It well becomes us, gentlemen, to take every proper opportunity of doing honour to the memory of these great men; for they have exalted us. Their genius, their labours, and their public services, shed a lustre on our common profession, raising its intellectual character and the social rank of its members; while their names are conspicuous in that roll of master-minds, the proud inheritance of our land and our race, whose influence and whose fame, extending over the whole globe, are destined to last as long as genius shall be held in reverence, and science itself shall endure.

The College of Physicians long ago instituted the Harveian oration in commemoration of the illustrious men, whose names adorn their annals. Following this

example, DR. BAILLIE, the nephew, and SIR EVERARD HUME, the brother-in-law of MR. HUNTER, with a liberality worthy of their near connexion and intimate friend, presented to this college a handsome sum, for the establishment of an annual oration, to be delivered by a member of the council, in honour of MR. HUNTER and of others, who have deserved well of surgery. Such an oration has been regularly delivered in compliance with the conditions of the endowment, on the anniversary of MR. HUNTER'S birth-day, with two or three exceptions. A late biographer of MR. HUNTER observes, that "it may be worthy of consideration, whether it would not be better that these orations should occur less frequently." "It is (he says) a hopeless task, to seek for something new every year on so limited a subject." The council have long felt that the Hunterian Orations would excite greater interest if they took place less often; not that the subject is limited, for it affords an ample range of topics in its various branches and connexions,—scientific, literary, historical, personal, and collegiate,—but that the choice of orators is confined, being restricted to the council. Hence they have thought it would be better that the meeting should be biennial, or perhaps preferably triennial. In conformity with this view, and with the previous sanction of the representative of one of the founders, the representative of the other being out of the kingdom, no oration was delivered last year, and probably there would have been none on this day. The college authorities, however, deemed it absolutely

necessary, in order to avoid misconstruction, that the meeting should, at all events, be held to-day, whatever course may be determined on for the future.

A short explanation is here necessary.

Heretofore medical men have been contented to cultivate knowledge of their profession, to practise it diligently, and to prosper by minding their own business. This simple plan does not seem to suit what is called the spirit of the age, which, at all events, is not a quiet spirit. Hence our profession, during the past year, and indeed for a longer period, instead of enjoying the tranquillity so favourable to its successful cultivation, and harmonising so well with the nature of its practical ministrations, has been vexed and disturbed by a clamour for what is called medical reform, by noisy meetings, and angry discussions. Hopes and fears were raised to the highest pitch, by the actual introduction into the House of Commons of successive projects, intended, no doubt, to improve, but certainly calculated to change the organisation of the profession, by introducing into its government strange and startling novelties. The violent partisans of change seem to have considered that this college would be a serious impediment to their schemes, and they have spared no pains to remove or lessen the obstacle, not disdaining the unworthy arts of misrepresentation, falsehood, and abuse. Thus they asserted plainly, a twelvemonth ago, that the oration was not then delivered, because the council were afraid to meet the members of the college; and they did not hesitate to state, that the council would not dare to assemble the members again in

this theatre. I stand here, gentlemen, to proclaim and to prove the falsehood of that assertion—to give it the flattest contradiction. Weak, indeed, must the council be, and unworthy of their position, if they could be frightened by the well-known artifices and machinery of meetings, resolutions, and petitions; if they could be alarmed by the empty noise and common pointless abuse of grievance-mongers and agitators. Indeed, sir, they have never deemed so unworthily of the members as to suspect them of intending to profane this sanctuary of science, by vulgar broils, fit only for the hustings or the tavern, to interrupt, by disgraceful tumult, a meeting held for the almost sacred purpose of doing honour to him, who has honoured us and our profession; whose genius and whose talents have exalted over the whole world the scientific character of our country.

Why should the council fear to meet the members of the college here; in this noble building, raised and supported by their public-spirited exertions, and judicious employment of the college funds, in order to render it worthy of its precious contents, of the profession, and the country?—in this temple of knowledge, resorted to by votaries from all lands, as well as by our own countrymen, for instruction in those sciences, which are the groundwork of the healing art?—in this building, containing a museum to which there is nothing parallel in the world? brought to its present state of variety, richness, preservation, and order, by their unceasing exertions and vigilance?—in this building, in which they have accumulated by far the best medical library in England?—in this place, where the chief business of

the College, that of examination for the diploma, is so conducted, as to have gained the approbation and confidence of the great body of the profession, while the candidates themselves acknowledge its fairness, and it has almost escaped abuse even from the systematic calumniators of the institution? During the turmoil excited by the proposals for this pretended reform, it has become apparent that the nature and extent of the powers possessed by the College, and the manner in which its duties have been discharged, are not known to the public. It seems, indeed, that these matters are imperfectly understood in the profession, unless we should suppose that agitators and reformers, carried away in the eager pursuit of their visionary schemes, are unable to restrain their statements and declamations within the bounds of truth and justice.

The College owes its existence to a charter granted by GEORGE III. in 1800. This charter directs the formation of a council, and court of examiners; authorising the latter to examine such persons as may present themselves, and to give them, if found duly qualified, a diploma certifying the fact. Such is the constitution of the College; such the entire extent of power and duty confided to it. The custody of the Hunterian collection has since been added.

In the year 1799, the museum formed by MR. HUNTER was given to the Company of Surgeons, in trust, under the conditions of keeping it in good preservation, making a catalogue of its contents, opening it four hours in the forenoon, two days in every week, to Fellows of the College of Physicians, to members of

the Company, or persons properly introduced by them ; and providing for an annual course of 24 lectures on comparative anatomy.

To ensure the due performance of these conditions, and to provide for the safe custody of the invaluable treasure, a board of trustees was appointed, thirty in number, sixteen being holders of high offices in the state, by virtue of those offices, and fourteen, persons distinguished by scientific character and social position, nominated at first by the Lords of the Treasury, and then elected from time to time by the general body. The trustees meet at stated periods, to inspect the museum, to observe its state and management, and to see that the conditions of the grant are properly fulfilled.

After the dissolution of the Barber-Surgeon's Company, in 1745, three years only before Mr. HUNTER came to London, the Company of Surgeons took up their official residence in the Old Bailey, where the present Sessions House stands. An important part of their duty consisted in receiving, under a special Act of Parliament now repealed, and anatomising the bodies of those executed for murder. The bodies thus anatomised were exposed to public view in the theatre of the then-called Surgeons' Hall.

In 1796, the Company of Surgeons removed from the neighbourhood of Newgate to a house in Lincoln's-Inn-Fields, being then rather low in finances, and not much higher in reputation. Having become dissolved under circumstances, which it is not necessary to specify, it was reconstructed by a new charter, in 1800,

under the name of the Royal College of Surgeons of London. The scientific character of the institution, the efficiency of the examinations, and the estimation in which the diploma is held, have gradually and steadily increased from that time, and have never stood higher than at the present moment.

The diploma is not required as a legal authorisation to practise surgery; but public opinion demands that they, who presume to take care of the limbs and lives of Her Majesty's subjects, shall possess at least this test of their fitness for so important a trust. Hence, though not legally, it is virtually necessary to the holding of any public surgical appointment, and to respectability of position in the surgical profession. The comparative numbers of diplomas granted at various periods, will illustrate this point. They were, in the two years previous to the removal of the Company, 212; in the two years subsequent to the date of the charter, (1800,) 289; in the two years subsequent to the additional charter granted by her present Majesty, by which the style of the College was changed to that of the Royal College of Surgeons of England, 821.

Let it be always remembered, that they who apply for our diploma, do so voluntarily; that they offer allegiance to the College, and submission to its laws and ordinances, of their own free will, and for their own purposes, entering into a solemn obligation to maintain, to the utmost of their power, the dignity and welfare of the college. They are not compelled by law to come here, as they are to the Company of Apothecaries; there is no other necessity than that arising

from the high opinion entertained of the College by the profession, and the confidence reposed in it by the public.

The mind of JOHN HUNTER was so entirely engrossed by the pursuit of knowledge, that he was almost a stranger to the desires and cares which actuate ordinary persons. He was indifferent to wealth, except as a means of aiding his favourite pursuits, on which he expended all that he could get. Hence he died poor, leaving his family unprovided for, except in the glorious inheritance of a name that will never perish, and in that matchless collection; which is the clearest evidence of his genius and his labours, and the fittest monument to his memory. He directed by his will, that his museum should be offered to the British government on reasonable terms; in case of their refusing it, that it should be sold, in one lot, to some foreign power, or otherwise disposed of as his executors might direct. So imperfectly was this creation of genius appreciated at that time, that the offer to the government was received very coldly, and six years elapsed before it was finally accepted. The state of political affairs may account for this in some degree. When it was mentioned to Mr. PITT, then Prime Minister, he said—"What! buy preparations; I have not money to buy gunpowder." We may excuse this answer from the great statesman, whose whole soul was engaged in the mighty task of rousing and maintaining the spirit of his countrymen, and wielding the energies of Britain in her tremendous contest for life or death with a powerful and inveterate foe. It is not so easy to ex-

plain some other incidents of the negotiation. A noble lord, who took an interest in the affair, chiefly in reference to the family, writes thus to a person holding the highest station in the scientific world :—

“ I do not pretend to be able to form any adequate idea of the value and importance of the collection to science ; it is quite out of my line of observation. But I have always understood that you scientific leaders concur in thinking it highly curious, and well calculated to do service in the school both of medicine and natural philosophy in general.”

His correspondent, the President of the Royal Society, an intimate friend of HUNTER, himself fond of natural history, and in daily intercourse with all the scientific characters of the day, replies—

“ Had I thought my friend John Hunter’s collection an object of importance to the general study of natural history, or indeed to any branch of science except that of medicine, I hope that two years would not have elapsed without my taking an active part in recommending to the public the measure of purchasing it. I was consulted, in the first instance, by the gentlemen concerned, who, if I rightly understood them, agreed with me in thinking that the history of diseases was the only interesting and valuable part, and the natural history was not of consequence sufficient to be brought forward as an object of public purchase. Concluding that the history of diseases arranged itself naturally under the protection of the College of Surgeons, and knowing that the corporate mansion of that learned body was roomy enough to receive the collec-

tion; being well aware that the matters of abstract medicine did not come within the province of the Royal Society; knowing that the apartments of that body were scarce able to contain the property they already possess; and thinking the [British] Museum, to which, from the nature of its institution, students could not have a convenient access, an improper deposit, I declined, with the full approbation, as I thought, of the parties concerned, taking any lead in the matter."

An offer of the collection was made, in the first instance, to the College of Physicians, and declined. We must not forget, that although members of this learned body had successfully cultivated and taught anatomy in former times, they had in a great measure abandoned the pursuit for many years; and further, that although the College is rich in historical recollections, and in the talents and learning of its fellows, its finances were and are low, and would not have borne the expense consequent on accepting what this college has found to be a very costly present. Thus the collection may almost be said to have gone begging. It was refused by the College of Physicians; it was declined by the President of the Royal Society, on the part of that learned body and of the British Museum; when it was joyfully accepted by this College, to whom the public is probably indebted for having retained in the country an intellectual treasure, created by the genius of one of her most gifted sons.

In accepting this magnificent gift, the College of Surgeons have ever been sensible of the responsibility they incurred, not only to the British Parliament, in

reference to the mere terms and conditions of the donation, but to the entire medical profession, and to men of science in all countries ;—to all interested in the great subjects of organization and life, and in the progress of the healing art, of which these are the foundation. It has been their constant aim to manage the collection in the spirit of its great founder ; to do what they feel certain that he would have done, had longer life been granted to him ;—that is, to fill up deficiencies, to complete, in all its details, the great scheme he had conceived, that of exhibiting, in consecutive series, all animal structures and organs, in every state, from their simplest to the most complicated forms, as the first step towards understanding the phenomena, the processes, and the nature of life, as an essential preliminary to the investigation and rational treatment of disease ; to enlarge the collection in all its departments, keeping it on a level with the progress of advancing knowledge, and thus rendering it a national repository, worthy of the country which gave birth to its author.

The Hunterian collection, delivered by the executors of MR. HUNTER, consisted of 10,563 specimens ; those subsequently added by the College amount to 12,347 ; so that more than half of the present museum has been collected by the College, and is, therefore, collegiate property.

For eight of these additional specimens, being objects of peculiar rarity and value, the college paid £1,200. £4,000 were expended in purchasing the entire collection of SIR A. COOPER, and large selections from those

of MESSRS. BROOKES, HEAVISIDE, HOWSHIP, LANGSTAFF, LISTON, and WALKER.

The parliamentary grant for the purchase of the Hunterian collection was £15,000. For the erection of the building to receive it, and the theatre, there were two other grants, amounting together to £27,000, in addition to which the college contributed £23,000 out of their own funds.

As the museum, augmented by the College to the amount just stated, had long outgrown the accommodations afforded by this first building, it became necessary, in 1835, to provide much larger space for its arrangement and display, as well as for the accommodation of the rapidly increasing library. This involved the taking in additional premises, and indeed nearly rebuilding the College, at an expense of £40,000.

The premises required for the successive enlargements of the College have cost £12,000.

The mere cost of maintaining and increasing the museum, without including the lectures and other incidental expenses, has been, up to the present time, more than £70,000; and the annual charge, at this moment, is little short of £3,000.

The council were bound to form a catalogue of the collection. This they could have done, so as fully to satisfy the condition of the parliamentary grant, without much trouble or expense. Putting aside all considerations of that kind, they determined at once that the treasures confided to their care should be described in a manner worthy of the founder, and of the College. This was an arduous undertaking, requiring the employ-

ment of several persons, and extending over some years. It was, however, a sacred duty to the memory and character of MR. HUNTER, whose services in the cause of science, although appreciated by a chosen few,* were but imperfectly understood at the time of his death, even in his own country, and hardly known at all beyond the limits of England† He had published but little during his life. Incessantly engaged in new researches, calculated to extend the boundaries of science, he intended to publish, at some future time, a great work, that should embody all his labours, anatomical, physiological, pathological, and practical.‡ Intent, too, like other collectors, on adding to his store, he had always deferred, to a future period, the serious and less agreeable task of description. Thus, there was no catalogue of the collection at the time of his death.

The physiological series in the galleries of the great museum presents an abridged result of MR. HUNTER's anatomical and physiological labours, and an epitome of his doctrines; while it exhibits a great portion of the anatomical facts, on which a natural arrangement of animals must be founded.

To draw up, not a mere list of these preparations, but such an account of them as should exhibit the powerful light they throw on the great subjects of general anatomy and physiology, as well as on zoology;—such, in short, as should do full justice to the genius and industry of the author, required a rare combination

* See Note A.

† See Note B.

‡ See Note C.

of endowments ; a knowledge of general anatomy, not inferior to that of the founder ; a perfect acquaintance with natural history ; a full comprehension of the Hunterian views and doctrines, with the power, if I may so say, of identification with HUNTER, that is, of seeing objects as they appeared to him. The College was fortunate enough to find these qualifications in one of its own members, and a gentleman in its own establishment.

The death of CUVIER left an immense void in the world of science ; but, “*uno avulso non defuit alter, aureus.*” The mantle of the great naturalist and philosopher has descended on the conservator of the museum, MR. OWEN ; it beseems him not less than it did the original possessor. Long may he bear it with the same propriety and dignity, as at present, for the benefit of science, the credit of the College, and the honour of our country !

The labours of Mr. OWEN on the physiological series are comprised in the five quarto volumes now before me, which occupied him for nearly eight years.

They contain introductions to each division of the series written by the founder, being taken from a manuscript fortunately preserved, and intended to form part of a projected catalogue. Each preparation is fully and clearly described, so as not only to identify the specimen, but to give a view of the subject. Wherever it was practicable, the descriptions and illustrative remarks are drawn from the Hunterian manuscripts and published writings.

The species, which furnished the preparation, is de-

terminated in almost every instance, being mentioned under both the popular and the scientific name; the latter drawn from the best modern authorities, with the convenient aid of synonymes. The determination of the species, without which the scientific character of the catalogue would have been much lessened, involved long and laborious investigations, for a large portion of the specimens required to be identified in this respect. Mr. OWEN states, in the preface to the first volume, that he had then dissected more than 200 animals in reference to this object alone.

The catalogue is illustrated by 77 engravings from the collection of highly finished and beautiful drawings left by the founder. They were executed by an artist who resided with Mr. HUNTER for that purpose many years, and are interesting, not only for their intrinsic merits, but as showing that the indefatigable author of the collection had far surpassed all his contemporaries, and had anticipated many of the most important discoveries of his successors.

We cannot doubt that the catalogue, in its present form, is nearly such as Mr. HUNTER would have made it, while its accomplished author has brought it into harmony with the existing state of science, without sacrificing the character of originality stamped on all the works of HUNTER. In some respects it is more instructive than it could have been if formed during the life of the founder; the College having added 1,998 specimens to the 3,745 left by him, and a great portion of these are introduced into the catalogue. Mr. HUNTER, too, could not have

spared time for the minute description of individual specimens, nor for the collection of the various illustrative matter introduced by Mr. OWEN.

The catalogue of the osteology is a quarto volume, framed by Mr. CLIFT, in which the same pains have been bestowed in determining the species, and in giving the synonymes.

The Hunterian specimens in this department are 963, the additions 2,119. The numbers are so much increased since 1831, the date of this work, that a new catalogue has become necessary. Our indefatigable conservator is at present occupied with this subject, the council intending that the new work shall be so drawn up, as to constitute in some degree a general account of comparative osteology.

Mr. TAYLOR, a member of the College, and thoroughly versed in chemistry, more particularly in the animal department, voluntarily undertook, from his love of science, the task of analyzing the calculi and concretions and describing them. The catalogue drawn up by him has been printed in two portions, and is illustrated by 17 coloured engravings, containing a great number of accurate and beautiful figures. This catalogue is, in a great measure, a general account of the subject; containing, not only a description of the external characters of the substances, with many other circumstances of their history, but also the results of the chemical analysis, to which they have all been subjected. The specimens in the Hunterian collection were 536; the collegiate additions are 884.

A catalogue of the Hunterian Pathological Speci-

mens, both dry and in spirits, sufficient to indicate their nature and general object, was published by the council in 1830, in two parts. This department, which will be the most interesting portion of the collection to many of our members, has received numerous and most valuable additions of late years, raising the entire number to 5,216, of which 1,709 are Hunterian, 3,507 collegiate. Hence it is fortunate that the formation of a full and illustrative catalogue has been deferred to the present time. The execution of the work has been entrusted to Mr. PAGET, the warden of the collegiate establishment of St. Bartholomew's, and teacher of general anatomy and physiology in that college; than whom it would not have been possible to find one better qualified for the task by talents, industry, varied and extensive acquirements, with that clearness of head which gives the powers of ready comprehension, lucid arrangement, concise and appropriate description. There will be a full and accurate account of each specimen, with an indication of the points it may be calculated to illustrate. The histories of the cases are detailed in every instance in which such records have been procurable. The particulars relating to the Hunterian specimens are derived from detailed accounts drawn up by Mr. HUNTER; while other histories and illustrations have been introduced from his printed works, from those of other writers, and, in short, from every available source. A large proportion of the additional specimens will be illustrated in the same way. This mode of framing the pathological catalogue adds, indeed, to its length, but increases incalculably its

scientific value. The great pile of closely written manuscript now on the table, is the pathological catalogue completed, and ready for the press. It will probably form three quarto volumes of good size; and, if I mistake not, will be found, when complete, especially in conjunction with the collection it is intended to illustrate, to contain a more valuable body of information in pathology than can be found in any other quarter.

Both MR. TAYLOR and MR. PAGET have devoted at least four years to the labours above described.

MR. HUNTER had made a large collection of fossil organic remains; from which circumstance, as well as from some incidental remarks, it is clear that his sagacious mind had not failed to appreciate the important bearing of these often mutilated and apparently worthless fragments, on various questions in general anatomy and the history of the globe. The council have made great additions to this part of the collection, raising the number of specimens from 1,215 to 2,415.

These vestiges of a former world throw light on the laws of organization, and particularly on the great question of uniformity of type, and are therefore necessary in a collection of general anatomy. They can be studied with every advantage in the College museum, where they are placed in juxtaposition with the most nearly allied existing species.

These fossils could not have been described when the collection first came into the possession of the College, because the branch of science devoted to their illustration and explanation, did not then exist. A flood of light has since been thrown on the subject by

the combined labours of many inquirers, among whom, CUVIER and OWEN hold the foremost rank for patient industry, close observation, and sagacious reasoning, guided and enlightened by an intimate acquaintance with the higher departments of general anatomy and physiology.

The volume I hold in my hand is a descriptive and illustrated catalogue of the fossil organic remains of mammalia and birds, from the pen of the conservator, containing all the information that could be introduced into such a work and adorned by numerous figures of the rarest fossil specimens, not before represented.

If the College museum be, as I believe, superior to any other in extent and variety, in the order and condition of its contents, it far surpasses all in the excellence of its descriptive catalogues, as well as in the facilities of access and information afforded to visitors. Let me observe on the latter point, that the museum is opened four days in the week, instead of the two days required by the conditions; and that, under special circumstances, visitors are often admitted on the two other days. The average weekly number of visitors is upwards of 120.

The members cannot but feel an honest pride in reflecting, that this great assemblage of scientific materials, intended to establish the principles of the healing art, together with the elaborate and instructive catalogues in which they are described, are entirely owing to the labours of English surgeons. The whole has been produced by members of this College, excepting a

few microscopical specimens purchased from the representatives of the late Dr. TODD, of Brighton.

Among the accessions, which the museum is constantly receiving, there are occasionally objects of peculiar rarity and interest, worthy of separate publication. Two volumes of this kind, from the pen of the conservator, have already been published by the council. One of these* gives a minute and accurate account, illustrated by numerous figures, of the animal which constructs and inhabits the beautiful shell of the Pearly Nautilus (the *Nautilus Pompilius* of naturalists). The creature, previously almost unknown, is of the highest interest, not only from its zoological affinities, but as being, according to Mr. OWEN, "the living, and perhaps sole living, archetype of a vast tribe of organized beings whose fossilized remains testify their existence at a remote period, and in a different state of things."

The other† minutely describes the bony remains of

* Memoir of the Pearly Nautilus (*Nautilus Pompilius*, LINN.) with illustrations of its external form and internal structure; by R. OWEN, F.R.S. 4to. 1832.

† Description of the skeleton of an extinct gigantic sloth, (*Myodon Robustus*, OWEN,) with observations on the osteology, natural affinities, and probable habits of the megatherioid quadrupeds in general, by R. OWEN, F.R.S. 4to. 1832.

The numerous accurate and beautiful figures in both these works express with perfect fidelity all the details of the objects they are designed to illustrate; while the text of both is a model of clear description and sound reasoning, enlightened by an intimate acquaintance with all the collateral branches of knowledge, as well as with the labours of all other inquirers, and conveyed in the happiest style.

an enormous animal, an inhabitant of a former world, found not far below the surface in the great basin watered by the Rio de la Plata, and discusses the zoological affinities of the extinct creature. The gigantic skeleton, having been dug up from the fluviatile deposit in which it had been entombed since the last revolution of the earth's surface, and then conveyed from the province of Buenos Ayres to England, is now seen on the floor of the great museum, almost as perfect as if the animal had recently perished.

The materials of a third volume are prepared.

In order to render the museum useful in the higher branches of education, and to encourage those who may be inclined to perfect themselves in general anatomy, the council some years ago instituted student-ships. They are three in number, with salaries of £100 per annum, and are held for three years. The appointments are bestowed as the reward of merit, the test being a strict oral and practical examination. The students work daily at the College, under the direction of the conservators, and have every opportunity of profiting by the scientific labours constantly in progress. This plan has been so much approved by the heads of the army and navy medical departments, and by the East India Company, that they have placed at the disposal of the council, for the benefit of the College students, an appointment in each service, once in three years, so that there is a provision for one student every year.

The assistant conservator, MR. JOHN QUEKETT, formerly a student of the College, and admirably fitted,

by thorough knowledge of the subject, for his present duties, which he discharges with exemplary zeal and modesty, possesses singular dexterity in unravelling minute structure, and particularly in the art of injecting. He has thus prepared and preserved in a state fit for microscopic exhibition, specimens displaying the ultimate organization and vascular arrangements of all the principal organs and tissues, human and comparative. By direction of the council, he gives to such members of the College as may choose to attend, weekly demonstrations of these interesting subjects, on which much labour has been bestowed of late years, with the effect of throwing important light on the construction and development of organized beings.

I have attended the demonstrations several times ; less often than I could have wished, as they have always afforded me instruction and pleasure.

The council could not fail to perceive, many years ago, that a library was a desirable, if not an essential, appendage to the College Museum. Without a good collection of works in natural history, human and comparative anatomy, including those, in which the subjects are treated incidentally, the College catalogues could not have attained their present state of perfection ; and great difficulty would have been experienced in the important point of determining species. The council, however, soon resolved to form a medical library, on the most comprehensive plan, to contain all the best French, Italian, and German works, as well as those in our own, the Latin, and Greek languages. It embraces all departments of medicine, and the auxiliary branches

of knowledge, and includes a great number of the most costly books, particularly in natural history. The collection, now amounting to 20,000 volumes, and far surpassing any other in the country, is kept complete by the regular addition of new works, and is opened for the use of members, and of others properly introduced, from ten o'clock to four daily, with every facility for study.

The books have cost the College at least £10,000 ; and the annual expense of the library is not less than £600. The average weekly number of visitors is about 150.

I have thus, gentlemen, endeavoured to set before you faithfully the course which the council have taken in administering the affairs of the College. Bear in mind, that the charter gives no other power, and imposes no other duty, than that of the examinations ; and that the conditions of the Hunterian trust require little more than preservation of the collection in good order. Then observe the present enlarged state and excellent condition of the museum, on which the College has expended, at various times, and in various ways, at least £200,000 ; observe, also, those admirable descriptive catalogues, which increase its value tenfold as an instrument of instruction ; contemplate the library, the studentships, and the microscopical demonstrations ; reflect on the talent called forth, fostered, and encouraged by the College, in an OWEN, himself a host, who, by his labours in this College during nearly twenty years, has achieved a reputation second to none in Europe ; in a TAYLOR, a QUEKETT, and a PAGET ;

consider that the diploma of the College is in the highest reputation, and that British surgery, of which this College is the head and fountain, has acquired an acknowledged pre-eminence for soundness of scientific principles and practical skill. Then answer the question, which I put to you fearlessly, whether the council has been contented with merely fulfilling its duties in a cold and literal manner, or whether, casting aside the letter of the bond, it has embraced its true spirit, and construed liberally the presumed intentions of the Crown and Legislature—faithful to its high mission, as set forth in the preamble to the charter, viz. the due promotion and encouragement of the art and science of surgery; whether it has manifested earnestness and zeal worthy of the honourable profession, to which we belong, and of the great man who adorned and dignified it, to whom we shall ever look up with reverence as its presiding genius.

If you should believe, gentlemen, as I do, that the Royal College of Surgeons of England has been faithful to its great trust, that its present organisation and mode of action, by virtue of which the governing body consists of those surgeons, who may be supposed to be best qualified by professional position and age for the conduct of business, are well calculated to secure, and have in fact secured, the objects of the institution, you will think with me, that it deserves the support and encouragement of the government. You will, therefore, be as much surprised as I have been, that the design should have been entertained, of incorporating another body, armed with higher powers than this Col-

lege ever possessed, to examine in anatomy and surgery,—nay more, in medicine also; thus combining the attributes, and usurping the functions, of the two existing Colleges. That this scheme should be now abandoned, is far less remarkable, than that it should have ever received the slightest encouragement from a secretary of state. Having once been countenanced in so high a quarter, it may be resumed, or the deserted offspring of the minister may be fortunate enough to receive a father's care from some legislator who has no progeny of his own.

It thus becomes necessary to offer a few remarks on the proposal for establishing, by charter, a Royal College of general practitioners and for endowing it, by Act of Parliament, with extensive powers. Observe and reflect on the title—"A Royal College of General Practitioners."

What is a college? Is it not an institution for the advancement of learning, or the cultivation of science? May it not be represented, in another view, as a community of learned men, associated for those noble objects?

What is the import of the epithet royal? Is it a word without meaning, a mere expletive, intended to round the title, and give it a better sound? or, is it not designed to impart the highest and most respected sanction to the institution thus designated? to convey to the public the assurance, from a quarter that cannot deceive, that it is adequate to its intended object, and therefore deserving of entire confidence?

Who, then, are the learned and scientific persons in-

tended to compose this Royal College, or, at least, to constitute its governing body ; what are the branches of knowledge they propose to cultivate ?

I shall show you presently, that the apothecaries of London are the parties ; while the proposed range of exertions, which they are willing to undertake, is no less than the entire extent of medical science and practice.

They, who aspire to so high a mission, will be expected to produce their credentials, to show that they possess the scientific qualifications necessary for so arduous an undertaking. Satisfactory evidence on this point would be afforded by their contributions to the transactions of learned societies, such, for example, as those of the Medical and Chirurgical Society, which embrace a period of about 30 years ; by books on medical subjects, published during the same period ; by their labours in teaching anatomy, physiology, medicine, surgery, materia medica ; by evidences of practical talent in the offices of physicians and surgeons to hospitals or other public institutions.

If the design of forming a new Royal College should be again brought forward, some member of the legislature would probably move for a return, embracing these and other particulars, thus affording the opportunity which the members of the intended institution would of course eagerly embrace, of showing to all the world the extent of their qualifications and competency.

The Colleges of Physicians and Surgeons have been established for the purpose of advancing their respective

departments. How the latter has fulfilled its duty, I have attempted to show you in some detail. It is not my place to speak of the elder College, which does not require my feeble support. We all know how the members of this venerable institution have contributed in past times to the improvement of medicine; how many zealous cultivators of science are numbered in its ranks in the present day. No one can doubt its fitness to preside over the province of the physician, to direct medical education, and to examine in medicine. Where, then, is the necessity, where is the room, for a third college, not of physicians nor of surgeons, but of practitioners?

In the meantime, what has become of the apothecaries? Medical practitioners have been hitherto distinguished as physicians, surgeons, and apothecaries. This threefold division, which has arisen naturally in the progress of society, meets the wants of the various classes of the community, and is recognised by the law, whose authorised interpreters, knowing tolerably well what is meant by a physician, surgeon, or apothecary, would be sorely puzzled when called on to deal with a general practitioner. Is the race of apothecaries extinct, and is their occupation gone? Are we to seek in future for their organic remains as vestiges of the state of the medical world previously to its last revolution? Do these gentlemen, who tacitly discard the name, mean to abandon the practice of the apothecary, that is, the preparation, compounding, dispensing, and sale of medicines? Nothing is farther from their intention.

The Act of Parliament of 1815, relating to the

medical profession, is called the Apothecaries' Act. Its object was to regulate the practice of apothecaries, and it owed its origin to an association of gentlemen, calling themselves the Associated Apothecaries of England. If I mistake not, the association still exists under the same name. The general practitioners of 1845 are merely our old friends the apothecaries under a new denomination, having taken the liberty to change their name without the necessary previous formalities of the royal consent, and registration in the Herald's College. The nature of the occupation remaining the same, why should the name be changed? such an alteration is only calculated to mislead. Surely the old and familiar term of apothecary, recognised by usage and law, is preferable to the vague and new-fangled name of general practitioner.

The general body of medical men throughout the country, with few exceptions, combine all parts of medical practice. They are physicians, surgeons, accoucheurs, apothecaries. They might with propriety be called general practitioners. Many of them possess thorough knowledge of their profession, gained in the great school of experience, and are competent to all the duties and emergencies, both of medical and surgical practice. In London, the three branches of the profession are, in great measure, pursued distinctly. Here, therefore, the member of the third division, properly designated as an apothecary, has a range of duties and practice different from those of the physician and surgeon—not less important nor less useful. If a third College were called into existence, its governing body and its ex-

amining court more particularly, must be formed of the London members, that is, of apothecaries, properly so called. Country practitioners could not leave their occupations for such purposes, and might probably prefer remaining as they now are, Members or Fellows of the Royal College of Surgeons of England, to enrolling themselves in the new College.

The object of the Apothecaries Act was laudable—that of insuring higher professional qualifications in the general body of medical practitioners. The error, unavoidable under the circumstances, was in the constitution of the examining body. The College of Physicians, who ought to have undertaken it, declined the duty, which therefore lapsed to the Company of Apothecaries, a city guild, not organised for scientific purposes, but for trade in drugs and medicines, which they conduct with skill and success. They have performed the duty of examination, confided to them by the legislature, zealously, and to the best of their ability. We cannot, however, shut our eyes to the obvious truth, that, for the interests of medical science, they should be relieved from a burthen which ought never to have been thrown upon a body so constituted. Indeed, during the past year, the company, with a very creditable modesty, expressed a readiness to resign the examinations. Every facility should be afforded them for completing an act that would meet with general approbation. I may here observe, that in the first and best of the schemes submitted to the legislature in the past session, it was proposed to repeal the Apothecaries' Act, and thus to relieve the company from the

duty of examination. This provision was warmly approved of by all except the parties immediately interested.

I am sorry to observe that they are not prepared to die unconditionally, but wish to bequeath their power to the new College. In this way they would become their own heirs; for the examiners of the worshipful company belong to that division of the profession out of which the new council and examining body are to be formed; they are among the parties who aspire to constitute the new College, and would in all probability be members of the new examining board. The proposed change, then, would be a mere shuffle of the cards, the taking of a fresh hand out of the same pack. The new examining body, constructed of the same materials, would be neither better nor worse than the old one. If it had been formed, it might have taken for its motto, "*Alter et idem nascitur.*"

Is it pretended that a new royal college is necessary to examine medical candidates in pharmacy? This would, indeed, be using a club to knock down flies. In the College of Physicians there are teachers of *materia medica*; there are professors of that department in the several schools of London; there are the members of the Pharmaceutical Society specially instituted for cultivating that branch of knowledge.

To the institution of the new College, except that it would deservedly expose us to the derision of our neighbours, I would not object under one or two conditions. Put the new College in the same position as the College of Surgeons; establish it by

charter, but not by act of parliament ; let the College of Physicians examine in medicine, materia medica, and pharmacy ; the College of Surgeons in anatomy and surgery ; and the apothecaries, who feel themselves equally competent in all branches, take in the whole range of medical science and practice. Let the candidate have a free choice of being examined by the two existing Colleges, or by the new body. Let there be no compulsion. It would be an unwarrantable interference with the liberty of the subject to compel a person, whether he will or no, to belong to this new College.

Having reflected on this matter in all its bearings, I find the conclusion irresistible, that, if the proposed new College should be established, it would either disgrace the profession by its weakness, and want of power to command confidence and respect ; or, if it should prove to be of stronger constitution than an examination of the materials from which it must be constructed would lead us to expect, it would introduce among us the jealousies, discord and divisions, which are the natural results of conflicting authorities and divided allegiance.

England has numbered among her physicians, HARVEY and SYDENHAM ; WILLIS, GLISSON, LOWER, and WHARTON ; RATCLIFFE, MEAD, PRINGLE, BAKER, WARREN, HEBERDEN, and BAILLIE ; among her surgeons, CHESELDEN, POTT, W. HUNTER, J. HUNTER, JENNER, BLIZARD, HOME, CLINE, COOPER, ABERNETHY.

Let us invoke the memory of the mighty dead ; let us appeal to the services and merits of existing institutions, to the high scientific character and social posi-

tion which the profession has attained in this country, as a protection against the infliction of this new College, under whatever disguise it may be attempted to conceal the distasteful reality.

Dî meliora piis ; erroremque hostibus illum.

I willingly turn away from a subject so little inviting to the more agreeable theme of MR. HUNTER's life and character, his pursuits and public services. His family, small landed proprietors, cultivating their own estate, not conspicuous for wealth or rank, is rendered famous by the talents of its members. It is remarkable for having produced three men, who, at one and the same time, attained in the British metropolis the highest eminence in the same profession ; JOHN HUNTER, his elder brother, WILLIAM HUNTER, and Dr. BAILLIE. These illustrious persons were ardent in the pursuit of knowledge : their zeal, their success, and their justly earned fame roused the minds of their cotemporaries, exciting a spirit of research which characterized the period, hence, sometimes spoken of as the age of the HUNTERS.

JOHN HUNTER, the youngest of ten sons, lost his father at an early age. Disliking the restraints and pursuits of school, he was allowed by an indulgent mother to amuse himself with country sports, and lead an idle life. He was averse to the study of languages, and continued so ever after. Five years after he came to London, he was entered as a gentleman commoner at St. Mary's Hall, Oxford, probably with a view to his becoming a physician. Speaking of this in after life, he said, "They wanted to make an old woman of me,

and to stuff me with Latin and Greek ;” but, he added, that he absolutely rejected all those schemes.

His want of learning has been lamented. It is difficult to satisfy some people ; they wish to combine incompatible circumstances. They who are not content with what HUNTER was and what he did, should reflect on some obvious truths ; for example, that there are but 24 hours in a day, and 365 days in a year. MR. HUNTER commonly worked nearly 20 hours out of the 24. How could he have studied classics and polite literature, without giving up some of his own peculiar labours ? would it have been possible to have coerced him into such studies, which he always disliked ? to turn aside his powerfully original mind from that career which he entered with an enthusiasm and vigour never surpassed ? Ordinary rules are not applicable to such cases ; genius like HUNTER’S is a law and rule to itself. I would refer those who think that his style might have been improved, to his volume on the animal economy. For clearness of arrangement and statement, propriety of expression, and correct reasoning these papers could not easily be surpassed, while for weight of matter they have seldom been equalled. They may well remind us of the just remark made by one of the most sensible writers of antiquity, that he who knows a subject thoroughly, will hardly fail to treat it clearly and eloquently.

Cui lecta potenter erit res,
Nec facundia deseret hunc, nec lucidus ordo.

JOHN HUNTER had attained the age of twenty without having received the usual education, easily as that

may be procured in Scotland, the country of his birth ; without having shown any signs of particular talent or mental activity ; or having formed any plan for his future course of life. That he fixed on the medical profession seems to have been a merely accidental circumstance. The success of WILLIAM HUNTER, then at the height of his reputation, gave him the idea of entering the same profession. He proposed, therefore, to his brother to allow him to come to London, expressing a hope that he might be able to give assistance in the dissecting room. His proposal met with a kind reception, and he accordingly set out for London with a friend on horseback, the usual mode of performing the journey at that time. Under his brother's roof he found himself in his proper element. The mind, which had recoiled with a kind of disgust from the study of languages, and the dry routine of scholastic pursuits, was immediately roused and attracted by the congenial objects which presented themselves on all sides. The dissecting-room, the museum, the conversations and instructions of his brother, and of the enlightened men whom he had gathered round him, awakened faculties hitherto dormant. As if conscious of his own great destiny, he stood forward at once, and entered on that course of research and discovery, which he continued with unabated ardour to the day of his death ; that is, for a period of forty-five years.

MR. HUNTER began his professional pursuits under the guidance of his brother ; but he soon struck out a path for himself, and followed it to an intellectual height that has never been attained before nor since.

Here he reigns alone like the Jupiter of the heathen mythology, "*Cui nullum viget simile aut secundum,*" and they who aspire to the "*proximi honores,*" must be content to be placed far below the monarch of the surgical Olympus.

From this commanding eminence he surveyed the whole expanse of organized creation; examining it both in detail and in the mass. He investigated each system and organ in all animals that he could procure, tracing them from the simplest forms of organisation and life, through all successive gradations, to man, the highest organism. Hence he deduces the essential nature, and distinguishes the accidental circumstances of every function. The results of this inquiry, unparalleled for its extent and accuracy, are exhibited in the physiological series of preparations contained in the galleries of the great museum, under the arrangement devised and executed by himself; which is so simple, so clear, so pregnant with instruction, that in the subsequent progress of natural science no improvement has been suggested. After surveying the details of organisation, MR. HUNTER would be prepared to view animals in the aggregate; to group them according to their affinities, to distinguish them by their diversities of structure; in short, to arrange them in natural order. That he had dissected at least 500 species, including specimens from all the different classes of the animal kingdom, is shown by MR. OWEN; the evidence being preparations in the collection, manuscript notes of dissections and drawings. It may be doubted whether an equal amount of labour applicable

to zoology can be shown by similar proofs to have been performed by any other naturalist.*

To his anatomical labours, MR. HUNTER added close and constant observation of disease, and experimental researches on most parts of the animal economy, both in the healthy and diseased state. These apparently multifarious labours were combined into one general result—a body of physiological doctrine, applicable to the elucidation and treatment of disease. For,—remember,—surgery was the point from which MR. HUNTER started—the improvement of surgical science and practice was the ultimate object of all his labours. Here we see the enthusiasm kindled and kept alive by a single grand pursuit; the workings of a great mind, raised to the highest pitch of power by the concentration of effort on one object, and that of the most noble and elevating character, pursued with untiring energy for nearly half a century.

If it be the attribute of genius to collect, combine, enlarge, and animate; to impart the energy, without which judgment is cold, and knowledge is inert, MR. HUNTER was pre-eminently a man of genius. He was impelled by an insatiable thirst for knowledge, which was in him rather a passion than a mere attribute of the intellect; hence he derived an energy, before which difficulties and obstacles disappeared, which, in the bold language of a great statesman, would have led him to trample on impossibilities; an industry, which no labours could exhaust. Thus he brought

* See note D.

around him in profusion the rough materials of knowledge, of which he made the most skilful use, his faculties of reflection being no less extraordinary than those by which he accumulated facts. He was a profound and original thinker, spending hours together in patient meditation, surveying the subjects of his researches in every light, considering them in their mutual relations, trying them by all the tests of analogy and contrast. His collections, his experimental researches, his writings, all bear the unequivocal stamp of thought. This characteristic trait could not not fail to be seized by SIR JOSHUA REYNOLDS, who has painted HUNTER in that attitude of meditation, which is well known to have been habitual with him.

Some of MR. HUNTER's biographers have thought it a part of their duty to record and enlarge upon his failings.

Like all other great men, he was candid and open, exhibiting what LORD BACON calls, "that fair round dealing, which is the honour of man's nature." He disliked artifice and indirect courses, and could not bear deceit or meanness. He may sometimes have expressed honest indignation at unworthy conduct more plainly than the conventional forms of society would warrant.

It is acknowledged that he was warm in his friendships, of generous disposition, willing to afford, not only professional advice, but more substantial assistance, when it was in his power, to those in distressed circumstances. This disposition is seen in the following characteristic note written to his brother:—

“ DEAR BROTHER,

“ The bearer is very desirous of having your opinion. I do not know his case. He has no money, and you do not want any, so that you are well met.

“ Ever your's,

“ JOHN HUNTER.”

Ever alive to the importance and dignity of the profession, when pursued in a proper spirit, he, perhaps, did not take sufficient pains to conceal his low opinion of those who either showed indifference to the progress of science, or fell short in their exertions of what he thought the proper standard. It must have been under some temporary irritation of this kind that he exclaimed to a friend—“ I know that I am but a pigmy in knowledge ; but I feel myself a giant in comparison with these men.”

Let me observe, that the unfavourable statements above alluded to, proceed from hearsay, not direct knowledge ; and that, in those who enjoyed the advantage of intimate personal intercourse with him, he inspired sentiments of the warmest affection and esteem ;—I might use the stronger term of veneration. This was particularly the case with his faithful assistant, MR. CLIFT, who has devoted his whole life, with an enthusiasm equally rare and disinterested, first to the zealous service, and then to the memory and fame of the great man, whom he was proud to have had for a master. As the constant companion of MR. HUNTER in all his scientific labours, both day and night, during the latter part of his life, he had greater opportunities of observ-

ing his habits and character than any other individual. His testimony is particularly valuable as that of a witness, who combines with talent and shrewdness perfect simplicity and candour, and an inviolable love of truth. He has been kind enough to communicate to me part of a letter, which he addressed to MR. PALMER, the editor of MR. HUNTER'S collected works, in reference to some disparaging statements made in the biographical account prefixed to the first volume, and he has since favoured me with a few other particulars, which it is desirable to preserve, as proceeding from the direct personal knowledge of one whose statements deserve implicit confidence.*

To those, if there should be any, who may be still inclined to commemorate the failings of MR. HUNTER, to rake up and preserve anecdotes of dubious authority, unfavourable to his character, I would reply as LORD PETERBOROUGH did to a person depreciating the DUKE OF MARLBOROUGH, who had been his political rival—"He was so great a man, that I could never see his faults."

That MR. HUNTER'S views in general anatomy and physiology were far in advance of those entertained by his cotemporaries, or his successors, will appear by comparing them with the state of the science recorded in the great work of HALLER, or with most of the subsequent publications on the same subject.

His originality is equally conspicuous in surgery, which he entirely revolutionised. It was the boast of

* See Note E.

AUGUSTUS, that he found Rome built of brick, and left it built of marble—"Invenit lateritiam, reliquit marmoream." HUNTER found surgery a mere mechanic art, hardly emancipated from its connexion with the occupation of the barber. He left it a beautiful science, equal to any in attractive interest, and inferior to none in its capability of alleviating human suffering. Surgery—did I say—every part of medical science has felt the vivifying influence of the physiological principles emanating from the bold and inventive genius of HUNTER.

CHESELDEN and POTT, who gave him his early lessons in surgery, were the two greatest English names in that department. The former is only known as an operator, and particularly for his skill in lithotomy. Low, indeed, must the state of our art have been, when CHESELDEN was almost the only man in England to whom that operation could be safely entrusted.

Under POTT, the reputation and efficiency of English surgery had advanced considerably. He had received a good education, and was a respectable scholar. He had strong natural talents, clear judgment, and good sense. To an acquaintance with the labours of those who had preceded him, he added patient observation of disease, quickness of perception, and happiness of expression. We still read with pleasure and instruction his faithful delineations of many diseases, enriched with the results of his own experience, and conveyed in clear and elegant language. He discarded the rough and cruel proceedings of an ignorant age, and the complicated applications, by which the resto-

rative efforts of nature were too often interrupted or retarded, and he substituted mild and simple treatment. Thus he has been always respected, both here and in other countries, as a great improver of surgery.

RICHTER, Professor of Surgery in the University of Göttingen, was in high reputation among his own countrymen. He published elements of surgery in several volumes, containing some good descriptions of disease, and some useful precepts of treatment, but disfigured by puerilities and absurdities that could hardly be credited, and deriving no light from physiology, although that science, as then understood, had been ably expounded in the learned and luminous pages of his colleague HALLER.

JEAN LOUIS PETIT, and DESSAULT, in France, may be classed as surgeons in the same rank with POTT.

BOYER and DUPUYTREN carry the subject further, in the same general direction and mode of treatment, the progress being such as would arise from more correct knowledge of anatomy, and from the great opportunities which Paris affords of studying the changes of structure induced by disease. There is no trace in their works of the Hunterian physiology. Indeed, MR. HUNTER is only mentioned by French surgical writers for the purpose of contesting his claim to the new operation for aneurism. They cannot expect that we should estimate the merits of their countryman more highly than they did themselves. The proposal of ANEL attracted no attention, and the matter was neglected, until MR. HUNTER's method, the offspring of his physiological reflections, was made known to the public by SIR E. HOME, not by its author. It was then

universally hailed as an interesting and important discovery, and is now spoken of as the Hunterian method everywhere except in France.

We could well spare the works of any surgeon except HUNTER: they would hardly be missed. But if his researches and his writings were obliterated, and their influence withdrawn, the very life-blood of surgery would be lost; it would be a body from which the vital principle had departed.

It was a great characteristic of MR. HUNTER, to aim at perfection in all that he undertook, exemplifying the remark, "*altius ibunt, qui ad summa nituntur.*" He was not even impelled by that feeling, which has animated so many noble minds; which has led to so many useful labours, and so many great exploits,—the love of fame. He did not want

The spur that the clear spirit doth raise
(That last infirmity of noble minds,)
To scorn delights, and live laborious days.

Instead of hastening before the public to gain or increase reputation, he withheld his researches, in order to make them complete in every point. Much of what he published during his life was produced at the solicitation of friends, whose requests he sometimes declined, relating to matters which, although interesting in a detached form, were with him subordinate parts of a great undertaking.* Thus, in closely examining after his death, his collection, the drawings executed under his inspection, and his manuscripts, it is evident that he had anticipated some of the most important modern

* See Note F.

discoveries in the higher departments of general anatomy and physiology.*

Here we see the strongest evidence of a superior mind, raised by the conception of a great idea above the cares and interests of the moment, and occupied only with the thought of realising a scientific labour for the benefit of after ages.

Thus the actuating motive with JOHN HUNTER was the pure and simple love of truth. His ruling passion was the desire to penetrate and unveil all the mysteries of organization and life; to divulge and explain them for the advancement of medical science, for the instruction and benefit of the human race. We can fancy him, meditating on the objects of his constant researches, directing his ardent glance into every part of the animal economy, and struck with surprise and admiration at the wonders thus revealed to him; determined, if possible, to find out the great secret of life; feeling certain that the scene of beauty and harmony thus disclosed must be regulated and maintained by some powerful principle, analogous, perhaps, to the animating spirit, supposed by the poet to direct the mighty and orderly movements of the universe, and described in the noble lines, in which he ventures to deduce the production of animal life from the same great source.

Principio cœlum ac terras, camposque liquentes
 Lucentemque globum lunæ, Titaniaque astra,
 Spiritus intus alit; totamque, infusa per artus,
 Mens agitat molem, et magno se corpori miscet.
 Inde hominum, pecudumque genus, vitæque volantum,
 Et quæ marmoreo fert monstra sub æquore pontus.

* See note G.

In the midst of life we are in death. On the 16th October, 1793, MR. HUNTER rose at break of day, as was his custom, and repaired to his dissecting room, where he was joined by some zealous and industrious students, such as he liked to have around him, and to employ as assistants.

Having completed, to his satisfaction, a difficult piece of minute dissection, he was in high spirits. Going down to breakfast, he repeated gaily some lines of a Scotch song,—a thing very unusual with him. It was, says his faithful friend MR. CLIFT, and tears filled his eyes as he spoke, the melody of the dying swan. He left home at his usual hour, in excellent health, and after paying some professional visits, went to a meeting of governors at St. George's. He was seized in the board-room of the hospital, and, being conveyed into an adjoining apartment, fell dead into the arms of one of his colleagues.

It was the same day, and nearly the same hour, that the unfortunate Queen of France was murdered on the scaffold.

The lovers of science were struck with consternation. The loss seemed irrecoverable. But the great genius lives again in the ample stores of knowledge left behind him; in his numerous writings; in the great repository of his labours, which is the pride and ornament of this College; published, explained, enlarged, illustrated, since his death, and thus rendered more accessible and more available for the extension and diffusion of science, than they had been during his life. The luminary of anatomy and physiology was not extinct; it had descended below the horizon, but it rises

again with greater brilliance, to shed the diffusive radiance of genius and intelligence over ages yet unborn.

So sinks the day-star in the ocean bed,
But yet anon repairs his drooping head,
And tricks his beams, and with new-spangled ore,
Flames in the forehead of the morning sky.

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NOTES.

THE "observations on certain parts of the animal economy," including papers from the Philosophical Transactions and other sources, occupy the fourth volume of MR. PALMER'S edition of the collected works of JOHN HUNTER. PROFESSOR OWEN has contributed a very interesting preface, and numerous instructive notes. From the former, which should be carefully perused by all who wish to estimate justly the extent and importance of MR. HUNTER'S labours, and the originality of his views on general anatomy and physiology, and in natural history, as well as his relative merits in comparison with those who have cultivated the same branches of knowledge either before or since his time, I have made a few extracts, in the following notes, to substantiate some of the statements in the Oration. Further and more detailed illustrations of the same points will be found throughout the elaborate "Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England." 5 vols. 4to. by PROFESSOR OWEN.

NOTE A.

"The museum of HUNTER is the chief, but not the sole depository of the dissections by which he established the general principles to which we have alluded.

" HUNTER had passed his thirtieth year before he had collected a single preparation for himself. All that he had made before that time were added to his brother's collection, which is now the ornament of the University of Glasgow. In commencing his independent labours in anatomy, he conceived the idea of a collection, in which the illustrations of the human organisation should form a part only of a general display of all the types and modifications of animal structure, and practically he was the first who reduced the scattered facts of comparative anatomy to a connected system.

" When HUNTER had brought his museum to an approximate degree of perfection,* he then set apart certain days, in which he exhibited and displayed to some chosen minds which could respond to the conceptions of his own, his great scheme, embracing the demonstration of all the leading modifications of every organ of the animal body, and of the different stages which each organ undergoes in its development, to fulfil the functions it is required to perform in the highest organisms.

" Amongst the enlightened men who enjoyed the inestimable advantage of listening to the explanations which the founder of the collection gave of his own labours, and of their scope and tendency, were CAMPER, POLI, SCARPA, and the now venerable BLUMENBACH.

" CAMPER, as a contemporary, and in some respects a rival of HUNTER, may have been less influenced in the general tenor and success of his investigations in comparative anatomy, by this circumstance, than the last-named and younger naturalists and physiologists.

" We cannot but suppose that the spectacle of the organisation of so many rare marine animals, beautifully displayed by so consummate a practical anatomist as HUNTER, must have had a lasting influence on the mind of POLI; and it is not, perhaps, assuming too much to trace to this source the taste for anatomy and the stimulus to the indefatigable and minute dissections of the Mediterranean mollusca, and the magnificent illustrations of their organisation, which have justly immortalized their author.

* In the year 1787. See HOME's Lectures on Comparative Anatomy, vol. I. p. 7; and vol. i. p. 107, of the present edition of HUNTER's works.

“In contemplating the gradational and connected series of the organs of animals, which BLUMENBACH must have witnessed for the first time in the museum of HUNTER, that learned and accomplished physiologist was doubtless led vividly to appreciate the cumulative force with which comparative anatomy urges the onward progress of physiological science, when all its scattered facts are concentrated into one orderly system. In his subsequent publications of the first systematic treatise of comparative anatomy the erudition of BLUMENBACH supplied many of those links in the series of animal structures which HUNTER derived from nature’s original sources.

“In estimating, therefore, the share which HUNTER had in advancing comparative anatomy and physiology, his annual demonstrations of his collection to such individuals as we have instanced must not be overlooked. We may admit that while so vast a proportion of the stores of his experience lay buried in unpublished manuscripts, his true station in the temple of science could hardly be discerned ; but independently of these manuscripts, we cannot hesitate in allowing that his published works, full of profound and original views, combined with the spectacle of his wonderful dissections, must have effected more than had been done by any previous author towards raising the science of comparative anatomy in the scale of human knowledge.

“Now, however, we have to estimate the scientific character of HUNTER from more extended grounds.

“Enjoying the same privilege of consulting his museum, which the contemporaries of HUNTER so highly esteemed, we also possess the advantage of studying it with the aid of those explanations of its scope and nature, which its great founder had left with a view to ulterior publication.

“Thanks to the devotion of the last of HUNTER’s pupils to the memory of his great master, the evidences of HUNTER’s discoveries and labours, as recorded in his collections, are in a better state of preservation at this moment than they were nearly fifty years ago, when they first fell to the care and charge of MR. CLIFT.

“And here I embrace with pleasure the opportunity of expressing my grateful thanks to that gentleman for the kind aid which I

have on every needful occasion received from him during the impression of the present work, and of recording my deep sense of the advantages which I have derived from a long intercourse with one whom I shall ever regard as the best of friends and worthiest of men.

“It is to the zeal and industry which induced MR. CLIFT to transcribe portions of the Hunterian manuscripts, at a period when he little suspected their ultimate fate, that we owe our additional knowledge of the philosophical views which HUNTER entertained of the application of anatomical facts and of the general principles which he had deduced from them. As such of these extracts from the Hunterian manuscripts as have been quoted in the present work have already been printed in the catalogues of the Hunterian collections published under the auspices of the council of the Royal College of Surgeons, it is competent for any one to judge of the grounds on which I have endeavoured to show that HUNTER, as a comparative anatomist merits a higher and altogether different station in science than has been awarded to him by CUVIER.

“Instead of viewing HUNTER as one who had merely contributed a secondary proportion of detached facts to the general but unarranged stock of materials in comparative anatomy, it appears to me that he made a new epoch in its history, and that the historian of the natural sciences has just and sufficient grounds for regarding HUNTER as the first of the moderns who treated of the organs of the animal body under their most general relations, and who pointed out the anatomical conditions which were characteristic of great groups or classes of animals; as one, in short, throughout whose works we meet with general propositions in comparative anatomy, the like of which exist not in the writings of any of his cotemporaries or predecessors, save in those of ARISTOTLE.”
HUNTER'S works; vol. iv., Preface, p. 37—40.

NOTE B.

"CUVIER, for example, in his review of the progress of science, in the latter half of the eighteenth century, a period which may be regarded as a second revival of comparative anatomy and physiology, places HUNTER in an inferior category of contributors to those sciences. After eulogising the share which the erudite HALLER took in demonstrating the importance of comparative anatomy to the advancement of physiology, and the corresponding effects which the labours of DAUBENTON and PALLAS produced in establishing sounder ideas of the classification of animals, the historian of the natural sciences goes on to state :

" 'JOHN HUNTER in England, the two MONROS in Scotland, CAMPER in Holland, and VICQ D'AZYR in France, were the first who followed their footsteps. CAMPER," he observes, "cast, so to say, a passing glance of the eye of genius on a number of interesting objects, yet almost all his labours were but sketches. VICQ D'AZYR, with more assiduity, was arrested by a premature death in the midst of a brilliant career; but their works inspired a general interest, which has ever since been upon the increase.'

"With reference to the nature or influence of the labours of HUNTER, CUVIER is silent; he limits himself to an indication in a marginal note of the Treatise on the Teeth, and 'les autres ecrits de Hunter insérés en partie dans les *Transactions Philosophiques*.'*

"This was meting out but scanty justice to the author of the Treatise on the Blood, and of the observations on the Animal Economy, which abound with so many general propositions in comparative anatomy and physiology. If, however, this opinion of CUVIER be excusable under the circumstances under which it was written, it would be unpardonable not to appeal against it upon the evidence of the higher claims of HUNTER, afforded by the present edition of his works, and by those manuscripts which have already

* Histoire des Progrès des Sciences Naturelles depuis 1789, tom. i. p. 302.

appeared in the catalogue of his physiological collection, published by the Royal College of Surgeons. Had these manuscripts, explanatory of the design of the Hunterian collection, been published before CUVIER wrote the work from which we have just quoted, that astonishing result of HUNTER'S labours might perhaps have claimed a passing notice from one whose statements all Europe now receives, and all posterity will regard, with confidence and respect.

“ ‘*Les autres écrits,*’ the ‘other writings’ of HUNTER to which CUVIER alludes, are indeed devoted rather to the development of general principles in physiology, than to the detail of the anatomical observations upon which he founded them. Many of the facts ascertained in the course of his higher and more comprehensive inquiries, and incidentally alluded to in the narration, are, however, fully as interesting and important as those which other anatomists have sometimes thought worthy of being made the subjects of express monographs.”—P. 5, 6.

NOTE C.

“ In the year 1786, when HUNTER published a collection of his detached memoirs, in the first edition of the *Animal Economy*, he observes, with reference to the subject of digestion,—‘I cannot at present spare sufficient time to give my opinions at large on this subject, with all the experiments and observations I have made upon it; but, as soon as I have leisure, I shall lay them before the public.’ And again, in describing the organ of hearing in fishes, he premises that he reserves a more complete investigation of this part of natural history ‘for a larger work on the structure of animals, which I one day hope to have it in my power to publish;’ and he states, that ever since the year 1760, his researches have been continued in every part of the *Animal Economy*. Hence,

instead of regarding the uncommon structures which he discovered in his dissections of different animals as individual peculiarities, he was enabled to advance beyond the anatomists of his own times, and view them from the same eminence to which subsequent induction has raised the observers of the present day ; and referring to the series of preparations in his museum, he boldly states, with reference to the structure of the organ of hearing in fish, that it is 'only a link in the chain of varieties displayed in the formation of this organ of sense in different animals, descending from the most perfect to the most imperfect in a regular progression.'

"The importance of these views, and the nature and amount of the knowledge which they indicated, could not be appreciated by the contemporaries of HUNTER, in the absence of a detailed exposition of the evidence on which they were founded. It is no wonder, therefore, that we find his earlier eulogists sometimes founding his claims to scientific eminence on insecure grounds ; some, for example, lauding him as the author of a theory of the organising energy, which may be traced to the time of ARISTOTLE ; or as the originator of the doctrine of the vitality of the blood, which is supported with so much eloquence by HARVEY and his immediate successors ; while others, taking more definite grounds, have often unfortunately selected as his discoveries precisely those subjects of HUNTER's special researches, in which he had but revived and extended the ideas of his predecessors. Of this we have a striking example in the introductory observations on the character of HUNTER, contained in SIR EVERARD HOME's Lectures on Comparative Anatomy, Vol. I., p. 6, in which the independent function of the vesiculæ seminales, and the determination of the organ of hearing in fishes are adduced as Hunterian discoveries.

"The true originators of these, and of other ideas and facts, which HUNTER may have regarded as his discoveries, and which he doubtless did discover, so far as independent and original research constitutes a claim to that honour, I have been careful to point out in every case where my reading has led me to detect, in an older author, a clear anticipation of HUNTER.

"It cannot be doubted, however, that the ascription to HUNTER by his friends and admirers, of facts and opinions to which he had

no title as the original discoverer, must have contributed to lower his character in the estimation of continental anatomists, whose acquaintance with the vast accumulation of facts in comparative anatomy, due to the labours of the numerous cultivators of that science in the sixteenth and seventeenth centuries, easily enabled them to detect the weakness of such claims, without perhaps their possessing such a knowledge of HUNTER's labours as to justly appreciate their scope and tendency, and to view them, as they deserve to be viewed, in the light of a first great attempt to arrange, in one concatenated system, the diversified facts in comparative anatomy."—P. 3—5.

NOTE D.

"Had HUNTER published *seriatim* his notes of the structures of the animals which he dissected, these contributions to comparative anatomy would not only have vied with the labours of DAUBENTON, as recorded in the *Histoire Naturelle* of BUFFON, or with the comparative dissections of VICQ D'AZYR, which are inserted in the early volumes of the *Encyclopédie Methodique*, and in the *Mémoires de l'Académie Royale de France*, but they would have exceeded them both together.

"It would be tedious to enumerate, name by name, the different species of animals, whose organization was investigated and recorded by HUNTER. M. CLIFT has evidence* that he left written descriptions from autopsy, of the anatomy of the following mammalia :—

Of Quadrumana,	.	.	.	21 Species.
Carnivora,	.	.	.	51 „
Rodentia,	.	.	.	20 „

* See "Evidence before the Medical Committee of the House of Commons."

Edentata,	.	.	.	5 Species.
Ruminantia,	.	.	.	15 „
Pachydermata,	.	.	.	10 „
Cetacea,	.	.	.	6 „
Marsupiata,	.	.	.	10 „
Of Birds,	.	.	.	84 Species.
Reptiles,	.	.	.	25 „
Fishes,	.	.	.	19 „
Of Insects,	.	.	.	29 Species.

“ Of other invertebrate animals, as mollusca, red-blooded worms, and radiata, upwards of twenty. From the titles of manuscripts, therefore, it appears that HUNTER possessed, at the time of his decease, original records of the dissections of 315 different species of animals.

“ In addition to these, HUNTER's preparations testify that he had dissected twenty-three species of mammalia, sixteen species of birds, fourteen species of reptiles, forty species of fishes, forty-two different mollusca, and about sixty species of articulate and radiate animals—all species of animals, of whose anatomy we have no evidence that he left written descriptions. So that, by adding these undescribed dissections to those of which we derive the evidence from the list of the manuscripts, and of which described dissections his anatomical collection, in like manner, contains evidence in the dissected and preserved organs, there is proof that HUNTER anatomised at least 500 different species of animals, exclusive of repeated dissections of different individuals of the same species, besides the dissections of plants to a considerable amount.

“ With respect to the rarer and less known invertebrate animals, HUNTER was not content with merely recording their structure, and displaying its leading peculiarities in preparations; but he caused most elaborate and accurate drawings to be made from the recent dissections; for which purpose he retained in his family many years an accomplished draughtsman, MR. WILLIAM BELL, better known as the author of two papers in the Philosophical

Transactions, descriptive of the Sumatran rhinoceros and the Ecan Bonna, (*Platax arthriticus*, Cuv.) Several examples of these beautiful designs have already been published by the Council of the Royal College of Surgeons in the illustrated catalogue of the Hunterian museum: they relate to the anatomy of the Sepia and Solen, of the Ascidia and Salpa; they illustrate the circulation of the blood in the Crustacea and Anellida; and the figure which MR. HUNTER has given of the circulation in the Chloëia Capillata, a red-blooded worm, far surpasses in beauty and detail any of those with which CUVIER illustrates the memoir,* dedicated to what he regarded to his latest breath as one of his most interesting discoveries.

“HUNTER had also minutely investigated the anatomy of the Cirripeds;† but of his dissections of these, as of many other animals, it is to be lamented that the preparations and drawings are now the sole evidences. The illustrations of the anatomy of the Echinodermata, both of the spiny species, and of the unarmed Holothuria, have never been surpassed either as to minuteness or accuracy; and, excepting the disputed article of the nervous system, little is added in the elaborate and well-known monograph of TIEDEMANN to the anatomy of the Holothuria as it is displayed by HUNTER.‡

“Now the anatomical labours of DAUBENTON were confined to that class of animals whose structure most nearly resembles man; he describes the position, and length, and breadth, and number of parts with most praiseworthy zoological precision, but never appears to raise his thoughts to the relations of the structures he detected with the habits of the species, or their adaptation to function. Hence he has been said to have made more discoveries of which he was unconscious than any other cultivator of comparative anatomy.

“VICQ D’AZYR, on the contrary, adorns his descriptions with many beautiful and philosophical views, but he did not carry his

* Bulletin de la Soc. Philomath., 1791, p. 146.

† See Physiological Catalogue of the Hunterian Collection, vol. i. p. 255.

‡ Ibid. p. 251, pl. III.

scalpel beyond the vertebrate series; whilst HUNTER explored every modification of animal structure, from man down to the polype.

“ If HUNTER surpassed his cotemporaries in the value and amount of the materials which he collected in comparative anatomy, he rises far above them in the application of his facts.

“ By a profound and unremitting meditation on the diversities of structure presented to his view, he derived more accurate notions than were current amongst his cotemporaries, of the parts essential to the performance of the different functions; and every idea or doubt thus suggested, he tested by the most varied, ingenious, and accurate experiments.”—P. vi.—ix.

“ These writings fully attest the enlarged views which HUNTER entertained of comparative anatomy, and of its application, not only to the establishment of sound theories of the functions and relative influences of the different organic systems in the animal body, but also of a natural distribution of different animals into classes according to their affinities. It is in this respect that he has more especially surpassed those of his countrymen who have immediately succeeded him in the same field of inquiry, and whose labours in comparative anatomy have not been productive of adequate results, chiefly from being restricted to the narrower channel of their physiological application.”—P. xxxvii.

NOTE E.

The following particulars, for which I am indebted to MR. CLIFT, are taken, partly from a letter with which he favoured me, and partly from the copy of a letter which he sent to MR. PALMER. MR. C. came to London very young, on his own and MR. HUNTER's birthday, (Feb. 14, 1792). His own first interview with the brother-in-law of MR. HUNTER was rather curious—

“ On my first introduction the following day to MR. HOME,

(afterwards SIR EVERARD, then an inmate in MR. HUNTER's house,) while his hair was being powdered;—being asked by him ‘whether I was afraid of a ghost,’ (there being at that time plenty of dead bodies in the dissecting-rooms up stairs,) I replied, ‘I don't know, sir, I never saw one; I was never afraid of any of my school-fellows, though bigger boys than me.’ This highly tickled his fancy, and he laughed heartily at my *innocence*.”

He says of MR. HUNTER—

“His history, if I could have put it forth in a manner to do what I consider justice to him, would have been my greatest delight, because I felt in my own mind, that from causes of all kinds, justice had never been done. No one had stated what might have been truly said of him, in his favour. If God ever made a truly honest man, in every sense of the word, it was, in my firm belief, JOHN HUNTER.”

MR. CLIFT observes, in his letter to MR. PALMER,

“This I may say at once from observation, and from all I have ever heard, MR. HUNTER was not a vulgar-minded and swearing brute, as some of your informants good-naturedly hint;—perhaps to keep themselves in countenance, and much needed at that period,—the breaking out of the French revolution; and I firmly believe he never committed the stupid impiety attributed to him, oftener than when such untoward circumstances took place with him as I know would have made many a parson swear internally, if not audibly. On the contrary, he was generally, though cheerfully, taciturn;—many a morning's labour passing over with scarcely a word of discourse: but, shrewd and witty in his remarks, when he condescended to unbend and let himself out, as he sometimes did when resting himself, and standing upright, from his dissection, after stooping for hours, as if nailed to the object: relating a professional anecdote very humorously, concisely, and with much point, (on the deceptions of schoolboys in dread of Black-Monday, &c., &c.) But I never perceived the slightest inclination to ill-natured remark, swearing, slang, pun, scurrility, obscenity, or balderdash, for which some of his pupils, cotemporaries and successors, were rather notorious.

“All these things were, to the best of my belief, foreign to the

natural disposition and character of MR. HUNTER; and, as far as my power of observation at that period enabled me to judge, (and I was then 18,) and I had daily and nightly opportunities beyond almost any other branch of his family, during the last eighteen months of his life, I only observed that he was mild and kind in his manner; sufficiently, but not servilely, courteous to every body, and I believe made no distinction between high and low, great or small; spoke as kindly and familiarly to his gardener or myself as to his equals or superiors; easily pleased when any about him shewed an inclination to please; and I believe every one (*except one or two*) always did their best to effect that.

“MR. WM. BELL, who resided so many years (14) with him, and knew him so intimately, did not think of him according to the adage, ‘that no man is a hero to his valet;’ but, on the contrary, he absolutely idolized MR. HUNTER, and believed him to be in every thing next to the Almighty for knowledge. This anecdote I had from the very best authority, which need not be doubted, because it was told to me by one who knew them both most intimately, and thought the praise a little hyperbolical. But it proves satisfactorily to me, that he was not such a man, exactly, as some of your correspondents or informants would insinuate. Nor can I believe him to have been capable of the gross rudeness imputed to him, respecting MRS. HUNTER’S party.* I do not believe it, because MRS. HUNTER’S Wednesday evening parties never interfered, or could interfere, with his studies. He always went up stairs for a short time to shake their mutual friends by the hand, and returned to me and to his labour of thought without further interruption for the remainder of the evening and great part of the night.”

Some further light is thrown on the latter subject by the following extract of a letter, sent to MR. CLIFT by a lady, now deceased, who was on the most intimate terms with MR. HUNTER’S family. In reference to the ‘Life’ in MR. PALMER’S edition, she says—

“ ‘It certainly contains some decided inaccuracies, and many

* Life, prefixed to MR. PALMER’S Edition of the Work, p. 41.

statements which I do not believe to be correct ; but, by those who are intimately acquainted with the circumstances, how rarely is biography found to be free from such defects ; more especially when an attempt is made to record anecdotes and speeches !

“ ‘ I most completely agree with you in believing that the gross rudeness attributed to MR. HUNTER, upon finding a party assembled in MRS. HUNTER’s drawing-room, is totally unfounded. It is true, we know, that he did not always like those parties, or show himself much at them ; but I think he was totally incapable of the conduct which this writer attributes to him ; and it is certain that these soirées were regularly continued, even during the very last season of MR. HUNTER’s life.’

“ How MR. HUNTER devoted his time is, I believe, pretty generally understood. That he divided his day, by an hour’s sleep after dinner, generally from half-past four till half-past five ; then to Earl’s Court, Kensington, to superintend the progress of any experiment going on, either vegetable or animal ; birds, beasts, or bees ; growth of plants and trees. He usually attended the meetings of the Royal Society on Thursday evenings—few else ; but always afterwards wrote till three, or more commonly four, in the morning. Up again first, generally by six—dissected till nine—breakfast-bell—patients from half-past nine till twelve—hospital, and out-door patients, till four or later—dinner—sleep—study ;—a very regular cycle. At night, if not at the moment, when necessary, he always registered, if not himself, by an amanuensis, his observations on what he had been dissecting. All these observations were kept so distinct as to be capable of being transferred to their proper place without difficulty or confusion. He certainly had the *organ of order*, though he knew neither GALL nor SPURZHEIM. There were, I should calculate, nearly, if not quite, a hundred volumes of folio MS. in forrel binding, of course not all equally filled. We always wrote on the left hand page only ; the right hand page was left for additional notes and additions from more recent observations and dissections.

“ Besides these folios, there were a very large number of smaller cases and memoirs in quarto, stitched. I think you will find on inquiry, about twenty folio volumes of these dissections, cases, and

memoranda written out fair, now in the museum of the College, which I had almost without fore-seeing their value, in my young days, made transcripts of, before I could have imagined that such a thing as a cremation (as DR. SHAW called the burning of the old useless and moth-eaten specimens at the British Museum,) could ever have entered into any christian man's head."

Mr. HUNTER's genius, industry, and singular talent for physiological research shine forth most conspicuously in his labours on animal heat. The thorough knowledge which he had acquired of this important subject has not protected him from an extraordinary misrepresentation. 'HUNTER's experiments were made with a view to discover if it were possible to restore to life animals which had been frozen. This was for some time a favourite inquiry, and he used to speculate on the possibility of freezing human beings, and thawing them to life two or three centuries after, a project which, if he could realize, he expected would make his fortune. Whilst his friends LYNN and BENJAMIN WEST, therefore were warming themselves with a bout of skating on the Serpentine, HUNTER staid at home freezing his fingers in pursuit of this his philosopher's stone.' Life, p. 57, note.

If such an absurdity requires any notice at all, Mr. CLIFT has furnished a suitable comment in his letter to Mr. PALMER.

"‘I have as much faith in the freezing and revivifying story, as if your informant had assured you that Mr. HUNTER had seriously proposed to borrow LUNARDI's balloon for the purpose of sawing off (*amputating*) the horns of the moon, and bringing them to earth for retail, and the proposed ruin of all joint stock *gas* companies that were to be. I very much regret that you should have thus allowed yourself to be led into the bathos of absurdity.’

In 1767, Mr. HUNTER ruptured his tendo Achillis, and reasoning physiologically on the occurrence, he adopted a simple and effectual treatment, without confinement. He also investigated the union of tendons in animals, dividing the tendo Achillis by the subcutaneous section, which he was probably the first to practise. SIR E. HOME states, that the accident happened in dancing.* MR.

* Another strange mistake is made by SIR E. HOME in the life of his brother-in-law, prefixed to the Treatise on the Blood. He gives the 14th of July instead of the 14th of February, as his birthday.

CLIFT says "Not dancing. He probably never danced or learned to dance ; but as I have heard it related and apparently with more probability, it was in getting up from the dissecting-table after being cramped by long sitting, and rising on tiptoes to stretch himself. This, I think, was Mr. HUNTER's version of the accident, and I heard the same account from ROBERT HAYNES, his servant."

NOTE F.

MR. HUNTER expressly mentions, that his observations on the digestion of the stomach after death, were drawn up at the request of SIR JOHN PRINGLE, then President of the Royal Society. His account of the anatomy of whales, probably owed its origin to a similar request.

It is justly observed by Mr. OWEN that

"HUNTER had higher aims than the reputation of a mere collector of facts in comparative anatomy, and this he not only felt but had expressed in an early part of his career. In a manuscript copied by Mr. CLIFT, relating to a dissection of a turtle, he says, 'the late SIR JOHN PRINGLE, knowing of this dissection, often desired me to collect all my dissections of this animal, and send them to the Royal Society ; but the publishing of a description of a single animal, more especially a common one, has never been my wish.'

"Howsoever we may regret this feeling, which has undoubtedly deprived the world of the results of much inestimable labour, and has operated in various ways disadvantageously to HUNTER's own reputation, yet it indicates the expanded views of the man who entertained it." Preface, p. 6.

NOTE G.

The figures, executed by MR. W. BELL, under the direction of MR. HUNTER, in illustration of the circulation in the crustacea and red-blooded worms are alluded to in note D.

MR. OWEN observes, further, that "HUNTER's printed works, preparations, manuscripts, and drawings, contain proofs of his discovery of the circulation of the blood in insects, and of the peculiar, diffused, irregular, and extended venous receptacles in these and the crustaceous animals, in the latter of which their existence remains unnoticed, even in the latest works on the subject." *

"The researches of CUVIER led him to conceive that there was a generally diffused, but passive, or non-circulated condition of the blood, coexisting in insects with the distribution of the breathing organs through the whole body. HUNTER, on the contrary, while he appreciated that condition of the circulating system in insects, which related to their peculiar respiration, viz., that the venous blood was diffused apparently through the cellular membrane, in the interstices of the fat, air-cells, and muscles, and that the veins in insects might be called in some measure the cellular membrane of the parts; yet he well knew the relations of these diffused receptacles of the venous blood to the dorsal heart, and the circulatory movement which was impressed upon the vital fluid by that organ. It is this remarkable error of CUVIER, with reference to the circulation in insects, that has given to the direct observations of the blood's motion by means of the microscope, in the hands of CARUS, BOWERBANK, and other excellent observers, the character of a new discovery."†

MR. OWEN observes that "HUNTER's writings on the nervous system bear but a small proportion to the amount of his anatomical investigations on this subject, especially as they are manifested in the philosophical series of preparations in the gallery of his collection, in which the nervous system is traced through its progressive

* Preface, p. 22.

† Ibid. p. 23.

stages of complication, from the simple filaments of the entozoon and echinoderm, to the aggregated masses which distinguish the organism of man.”*

He had expressly mentioned, and displayed in preparations made for the purpose, the fibrous structure of the brain; and he had arrived at important generalizations respecting the comparative anatomy of the nervous system in several classes of the animal kingdom.†

In his account of the nerves of the organ of smelling, MR. HUNTER has shown, by his remarks on the difference of function depending on differences of origin and distribution, that he had perceived the important truths which have been more fully developed by the anatomical labours and experimental researches of succeeding inquirers, more particularly by the late SIR C. BELL.

The most remarkable evidence, however, of that sagacity, which led MR. HUNTER, by combining and comparing particular observations, to ascend by induction to the most general propositions, and thus to anticipate the comprehensive laws of organisation and development, which have only been brought to light slowly, by the labours of other inquirers, many years after his death, is afforded by his remarks on monsters, and on the incubation of the chick.

“With respect to the cause or origin of monsters, HUNTER referred it to a condition of the original germ, or, as he expresses it,—‘Each part of each species seems to have its monstrous form originally impressed upon it.’ In the introductory observations to his extensive collection of malformed fœtuses and parts, he assigns the grounds for his hypothesis, and at the same time enunciates one of the most remarkable laws of aberrant formations. ‘I should imagine,’ he writes, ‘that monsters were formed monsters from their very first formation; for this reason, that all supernumerary parts are joined by their similar parts, viz. a head to a head,’ &c. &c.—*Hunterian MSS.*

“In proof of the important general principles, at a knowledge of which HUNTER had arrived, I have elsewhere quoted this pas-

* Preface, p. 16.

† Ibid. pp. 16—18.

sage, together with the following remarkable one from HUNTER's descriptions of his drawings illustrative of the development of the chick. "If we were capable of following the increase of the number of the parts of the most perfect animal, as they first formed in succession, from the very first, to its state of full perfection, we should probably be able to compare it with some one of the incomplete animals themselves, of every order of animals in the creation, being at no stage different from some of those inferior orders; or, in other words, if we were to take a series of animals from the more imperfect to the perfect, we should probably find an imperfect animal corresponding with some stage of the most perfect."—*Hunterian MSS.*

"We may, I think, perceive, from the evident difficulty with which MR. HUNTER expresses the idea, that his mind was oppressed with both its novelty and vastness. Men's thoughts require to be familiarised with propositions of such generality before their exact limits and full application can be appreciated."—P. 25, 26.

All, however, that MR. HUNTER had done, highly as we prize it, was in his view preparatory to a great design he had long entertained—that of a comprehensive work, intended to embody the results of all his labours and observations, his entire views on the structure and functions of animals, and the nature of disease. It was to have embraced the description of his museum, an account of all organs, and their mutual connexions, and his general views of animal life. He would here have recorded all the facts which he had observed, tracing their mutual connexions by reasoning, and ascending from individual observations to general laws. By displaying the affinities of animals, he would have laid the basis of a natural arrangement of the animal kingdom. In describing the pathological part of his collection, which contains many interesting results of his experimental researches, he would have presented his views on the nature of disease, and probably on the important subject of treatment. Unfortunately he died at an age when a person of his naturally robust frame might have been expected to live long enough for the completion of this project, considering that the necessary materials had been already in great measure collected.

The new operation for aneurism, always regarded as a most valuable improvement, and particularly interesting as a practical result deduced from physiological reasoning, was not published by its author, but by his brother-in-law. Although MR. HUNTER had performed it as early as 1785, MR. HOME's account of the matter in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," did not appear till 1793.

MR. HUNTER had been working all his life on the subjects treated in his book, on the blood and inflammation; but he did not begin to prepare it for the press till the year before his death; and only part of it was printed when he died. After finishing this work, it was his intention to give a course of lectures on practical surgery, for which he had been collecting materials during many years.* It was not until the same year that he presented to the Royal Society his observations on the economy of bees, which had occupied his attention a great number of years. His active mind had embraced also the history of the wasp, the hornet, and the solitary bees,† which he was prepared to describe from his own observations.

It would have been of inestimable advantage to science that the same great mind, which had brought together stores of knowledge more extensive and varied than had ever been accumulated by a single individual, should have performed the not less important task of examining, describing, and arranging them, of exhibiting their mutual relations, of deducing from them the general laws of organisation and life, and applying them to elucidate the nature, and establish the treatment of injury and disease. Since this was otherwise ordained, it is satisfactory to reflect that, in the collection, which is entire as it was left by the founder, in the great mass of his manuscripts still preserved, in the notes of his lectures and his published works, we possess nearly all that MR. HUNTER had actually accomplished.

* Life prefixed to the treatise on the blood, p. 36.

† Ibid. p. 37.

