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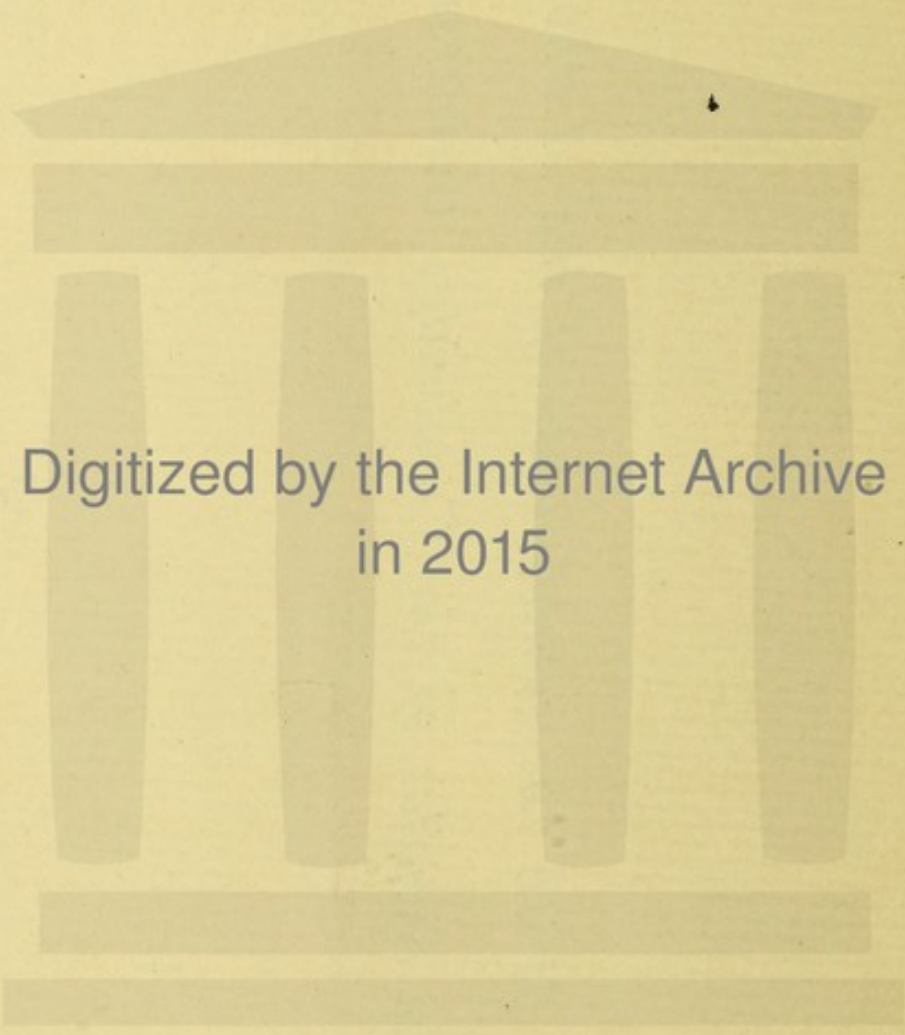
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THE HISTORY OF THE STUDY OF  
ANATOMY IN CAMBRIDGE

A LECTURE

DELIVERED JANUARY 29, 1891,

ON THE OPENING OF THE NEW ANATOMICAL  
LECTURE ROOM



BY

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THE HISTORY OF THE STUDY OF

ANATOMY IN CAMBRIDGE

BY

J. H. BURNHAM

OF THE UNIVERSITY OF CAMBRIDGE

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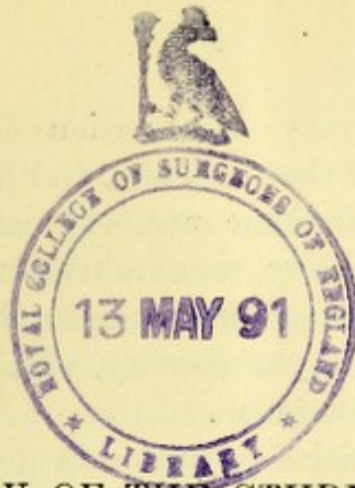
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## THE HISTORY OF THE STUDY OF ANATOMY IN CAMBRIDGE.

IN the lives both of individuals and of institutions there are certain events which mark out the subdivision of their history into epochs, and which are on that account naturally suggestive of retrospection.

The circumstances under which we meet here to-day are eminently of this character. The liberality of the Senate of the University has provided the Anatomical Department with this magnificent residence, and, as we formally take possession of our new laboratories, it will be profitable to look backward and review the position which the science, for whose cultivation these buildings are provided, has hitherto taken among the studies of this University.

The attempt to trace the early history of any subject of study is beset with difficulties. The organisation of a mediæval *studium generale* on the one hand, and on the other that of a well-equipped modern university with its suite of laboratories, each fitted for one particular branch of research, present differences comparable with those existing between a protozoon and a vertebrate: and as in the evolution of the organism it is seldom easy to identify the stage at which a given mass of protoplasm assumes a specific function and foreshadows the development of a separate organ; so there is the same kind of difficulty in determining the exact point of time at which the teaching of any one branch was differentiated from that of the generalised mass of knowledge comprehended of old under the title of Philosophy.

The original university organisation of Cambridge was founded on the model of that of Paris, and from the time that a distinct Faculty of Medicine was set apart, which was at a very early stage of its history, there must have been some kind of teaching—doubtless of an unsystematic character—by some of the resident readers in the Faculty, which professed to deal with the physical nature of man.

We learn from a petition presented in the last year of King Henry V. that a "Scole of Fisyk" existed in 1421 at each of the Universities, whose graduates had passed a "trewe and streyte examinacion," and claimed an exclusive right to practise. Their request being granted, it was ordained, among other provisions, that no woman should use the practice of physic "undur peyne of long emprisonement and paynge XL li to the kyng."

The medical course prescribed for Inceptors in Medicine in the earliest extant statutes, those written in the Old Proctors' Book, about 1398, consisted in attendance on the reading of certain text-books: viz. *librum Johannicii*<sup>1</sup>, *librum Philareti de pulsibus*<sup>2</sup>, *librum Theophili de urinis, et quemlibet librum Isaac*<sup>3</sup>, viz. *librum urinarum Isaac, librum de dietis particularibus, librum februm Isaac, librum Viatici. Item audiat semel antidotarium Nicholai*<sup>4</sup>; *item audiat bis libros commentatos, viz. librum Tegni*<sup>5</sup> *Galieni, librum prognosticorum, librum aphorismorum, librum de regimine acutorum; et quod legerit cursorie ad minus unum librum de theorica et alium de practica.*

<sup>1</sup> This is the "Ysagoge ad Galieni" written by a Christian Arabian physician, Honein (حنين) ben Ishak Abu Zaid, in the 9th century. MS. copies of this work are in the libraries of Caius (no. 86) and Corpus Christi (ccclxiv).

<sup>2</sup> Philaretus and Theophilus are the two names of a Greek physician. Copies of these treatises are in the same MS. with the last in Corpus and Caius libraries.

<sup>3</sup> Isaac was the adopted son of Solomon, King of the Arabians. Copies of his *Viaticum* are in several libraries in Cambridge. MS. 95 in Caius library contains this and *de febribus*. MS. 111 contains the *liber urinarum*.

<sup>4</sup> Nicholaus was provost of Salernum. A MS. copy of his *Antidotarium* is in Caius library, no. 373.

<sup>5</sup> This is the low Latin name of the *Τέχνη Ιατρική* of Galen. Copies of Commentaries are among the MS. in the libraries of Pembroke, Caius and Corpus Colleges. A MS. of the *liber de regimine acutorum* is in no. 86, in Caius library.

The amount of reading involved in this curriculum is equal in bulk to that in one part of Foster's *Physiology*, and was to occupy three years. The statute for graduation provides :

“Item non permittatur aliquis legere cursorie in medicina nisi prius audierit medicinam per triennium postquam cessavit in artibus et hoc si in artibus rexerit et qui non per quinque annos ita quod audierit totum corpus medicinæ, et quod magister suus ipsum præsentet idoneum coram cancellario seu procuratoribus assidentibus in virtute juramenti præstiti et pro eo deponat de scientia. Item quod nullus admittatur ad legendum cursorie in medicina qui in artibus non rexerit nisi prius per septennium philosophiam audierit et medicinam per alios quinque annos.”

There is a separate statute giving the requirements necessary for those wishing to practise Medicine and Surgery, and another regulating the clothing of Bachelors of Medicine “quod baccalaurei in medicina legentes in capis cursorie legere de cætero non teneantur dummodo tabardum decens et talare induant in legendo.”

The study of Anatomy in Europe only dates back to the year 1315, when Mondino of Bologna made public demonstrations on two bodies, and brought out the first European work on the subject. But the credit of establishing Anatomy as a practical part of the medical curriculum belongs to Berengario de Carpi, who was Professor from 1502 to 1527. Tiraboschi tells us that he dissected 100 bodies, and that he attracted to his lectures the foremost students of his time.

His contemporary, at first in Bologna but afterwards in Padua, was the famous Achillini (d. 1526), author of a commentary on the work of Mondino, who was so distinguished as a disputant that it became a proverb in Padua concerning a good disputant that he must either be the devil or Achillini. He was succeeded by Montanus, who, though less eminent, yet maintained the character which Achillini had won for Padua as the principal school of medicine in Europe.

About the year 1539 a young Cambridge graduate settled in Padua as Professor of Greek language and literature. John Key or Caius was a native of Norwich, who had studied at Gonville Hall, and had become proficient in the new Hellenic



learning, to which the labours of the great Erasmus of Queens' College had given an impetus in Cambridge.

While residing in Padua, Caius was for eight months a fellow-lodger with the Belgian anatomist Vesalius, and it is reasonable to suppose that this companionship was the means of turning the attention of Caius to the science which Vesalius studied with such enthusiasm. The young Belgian was then 24 years of age, five years younger than his English companion, but even then he had made for himself the reputation of being the most distinguished anatomist of his time. Caius devoted himself to medicine and anatomy in the class of Montanus and graduated as M.D. in the succeeding year, returning to England in 1541.

In the Harveian Oration for 1761 Sir George Baker claims for Caius the credit of introducing the study of practical anatomy into England. There is no reason to doubt the accuracy of this ascription, as I can find no evidence of anatomical teaching before this date<sup>1</sup>.

Caius began to lecture on anatomy in London, and much public interest was stirred in the subject. An Italian engraver in London, Thomas Gemini, brought out copper-plate reproductions of von Calcar's drawings in illustration of Vesalius' *Anatomy* in 1545, the earliest English work on the subject. Engraving had however been pressed into the service of anatomy at an earlier date by Johann de Ketham, who in 1495 published at Venice the first anatomical woodcuts in a folio work entitled *Fasciculus Medicinæ*.

No other work on anatomy published in England was then available to the British student; but three years after, in 1548, Vicary of St Bartholomew's brought out "The Englishman's Treasure, or the true Anatomy of Man's Body." Subsequently, in 1565 John Halle published his "very fruitfull and necessarily briefe worke of Anatomie more utile and profitable than any heretofore in the Englyshe tongue published."

Although these are the outcome of the awakening interest in Anatomy consequent on the teaching of Caius, yet both

<sup>1</sup> See "Commentarius de Joanne Caio Anatomiae conditore apud nostrates," published as appendix to his Harveian Oration.

these works are very miserable compilations, and bear no traces of having been written by authors who had any practical knowledge of anatomy.

In 1559 Caius became Master of the College which since has borne his name, but even before that date he had set himself to make specific provision for the introduction and maintenance of Practical Anatomy as one of the studies of the College. In the statutes which he drafted and which are dated 4th Sept. 1557, there is one paragraph (no. 42) which expressly provides for the maintenance of anatomical teaching:

“Præterea expendi volumus in Anatomiam singulis annis brumali tempore a studiosis medicinæ nostri collegii vel ab eorum aliquo conficiendam et in sepulturam honestam dissecti corporis apud S. Michaellem viginti sex solidos et octo denarios, observato ut præsidens socii scholares omnes et pensionarii præsentés in Collegio comitentur ad sepulturam emortuum et dissectum corpus tanta reverentia et ordine quanta si esset corpus dignioris personæ, propter commoditatem inde perceptam, Proviso quod si plura corpora velint eodem tempore (possunt autem quod velint licentia principis in archivis reservata) eisdem sumptibus dissecentur et inhumentur. Ne autem irreverenter et inhumaniter tractent humanum corpus medicinæ studiosi curabit custos aut eo absente præsidens.”

Certain dubious points in the Statutes having been submitted to Archbishop Parker in 1574, he writes,.....  
“Quod si unum aut plura corpora dissecentur et aperiantur sumptus funeris et aliorum onerum xxvi<sup>s</sup> viii<sup>d</sup> pro una vice in illo anno non excedet.”

The entries in the Burial Register of St Michael's Church show that this statute was no dead letter, and we have contemporary testimony as to the carrying out of Caius' wishes. These facilities for anatomical study gave to Gonville and Caius College that reputation as a foundation friendly to medical study which it has since maintained. It is not to be thought, however, that anatomy was studied only in Caius College; there are evidences of its having been pursued elsewhere; for other Colleges had medical fellows, and even to a late date had skeletons in their libraries.

Caius lectured on anatomy, both in Cambridge and in London, and published several editions of the works of Galen and Hippocrates with comments. He also wrote *de Canibus Britannicis*, published by Seres in 1570, and a treatise *De Rariorum Animalium et Stirpium Historia*.

His lectures on the subject roused the interest of the Corporation of Barber-Surgeons, which had been formed by the union of the Barbers' Company with the Guild of Surgeons in 1540 by Act of Parliament. In 1555 they resolved to set apart two of their number annually to give instruction in anatomy to the younger members of the body. It is worthy of note that among the lecturers who discharged this duty between 1563 and 1663 some of the most eminent were Cambridge men, such as Meverell of Christ's (1637), Prujean of Caius (1638—1646), and Goddard of St Catharine Hall (1646).

The Corporation of Surgeons kept up a connection with Cambridge in the seventeenth century by the maintenance here of scholars from time to time, to whom they allowed 40 shillings annually for maintenance and 20 shillings for the purchase of books. None of their scholars, however, attained to any position of note in anatomical science.

Among the medical students who were attracted to Gonville and Caius College one of the earliest and most distinguished was William Harvey, who joined the College in 1594, being then in his sixteenth year. Having graduated as a Bachelor of Arts, he proceeded to Padua in order to profit by the instruction given in that University, which still maintained its reputation as the chief medical school of Europe. It is extremely probable that Harvey had begun his anatomy in Cambridge, for he seems to have at once attracted the notice of the veteran professor, Fabricius ab Aquapendente, and a special note commending his proficiency was inscribed on his diploma<sup>1</sup>.

This is not the time to recount the labours or to sound the praises of the earliest and greatest of British physiologists; suffice it to say that his writings have given the texts to the successive Harveian orators at the College of Physicians. It was in his course of Lumleian lectures delivered in 1615 that he first

<sup>1</sup> See Munk's *Roll of the College of Physicians*, vol. i. p. 125.

announced his views on the circulation of the blood, but his classical work *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* was not published until 1628 (at Frankfurt).

Harvey was not a physiologist only, he was also a descriptive anatomist of no mean ability. In the MS. fragment of his lectures preserved in the British Museum and described by Sir George Paget, there is evidence of the care with which he pursued his anatomical studies and the fulness with which he taught. (See Paget's "Harveian Oration," 1857.)

The revised Statutes for the University passed in the reign of Edward VI. show how much more definite the views of the University had become as to the position of Anatomy in medical teaching: "Medicinæ chirurgiæque studiosus sex annos rem medicam discet ejus lectionis auditor assiduus. Anatomias duas videat bis disputet semel respondeat antequam baccalaureus fiat. Et duas Anatomias faciet tres ad minimum curationes se fecisse probet antequam admittatur ad praxin chirurgiæ."

"Baccalaureus Medicinæ disputabit bis totiesque respondebit. Anatomias tres aut ad minimum duas videbit antequam admittatur ad doctoratum medicinæ."

The Statutes of the 1st and of the 12th year of Queen Elizabeth repeat these, nearly in the same words. The only important change is the separation of the *Medicinæ studiosi* from the students in Surgery; the former of whom had to see, the latter to make the dissections. There is also an alteration of the last clause of the last Statute, which reads "et tunc post quinquennium a gradu baccalaureatus suscepto admitti poterit ad doctoratum in medicina."

In these early days the students were scattered, as they are now, through the different Colleges. One of the Injunctions made by the Visitors of 1550 began, "Singuli in ullo Collegio ad studium medicina traducti sunt ordine suo in Medicina disputare teneantur." Again in the Ordinances of the same reign we read of "lectores in medicina vel publica in scholis vel in Collegiis et qui ad Medicinam Statutis Collegiorum traducti sunt."

The Regius Professorship of Physic had been founded in the reign of Henry VIII. in 1540, but was apparently not filled until Queen Mary's reign in 1554, when Dr J. Blyth of King's College was appointed to the office. One of the Injunctions made in Queen Elizabeth's reign was to the effect that the Regius Professor should make one "Anatomy" each year. "Regius in medicina lector unam anatomiam singulis annis faciet si auditores illius hoc requirant et anatomix impensas persolvere velint."

By a decree of 1562 the Regius Professor was to be fined if he did not attend to his duties, the fine to be collected by the Vice-Chancellor.

In spite of this provision and penalty the Regius Professors seem to have neglected their duties in this respect; for in January 28, 1627, attention seems to have been directed to the neglect of anatomy under the Regius Professorship of Dr Collins of St John's, and a Grace was passed, making provision for more efficient university teaching: "Cum statutis cautum sit ut medicinæ baccalaureus tres anatomias videat, medicinæ studiosus duas, regiusque in medicina lector unam quotannis faciat, modo auditores impensas persolvant verum per aliquot jam retro lustra quo parceretur exiguo sumptui cessatum prorsus fuerit ab anatomiis faciendis in præclarissimæ facultatis medicæ chirurgiæque ingens apud nos detrimentum inque statutorum et studiosorum fraudem non ferendam. Placeat vobis ut communi hac vestra concessione (in libris procuratorum inserenda pro statuto ad quinquennium subsequens duraturo) provisum de cætero atque ordinatum sit ad impensas unius saltem anatomix quotannis suppeditandis videlicet ut procuratores a singulis qui gratiam hic aliquam in medicina aut chirurgia obtinent ejusce rei respectu exigant tredecim solidos et quatuor denarios a singulis vero admittendis ad respondendum quaestioni vel ad incipiendum in artibus eodem intuitu exigant unicam tantum drachmam atque istas summas pro receptorum ratione cistæ communi fideliter persolvant in crastino diei cinerum atque magnorum comitorum. Procancellarius vero a singulis sociis collegiorum non doctoribus quos medicæ professionis privilegio gaudere constabit mense junio quotannis exigat decem solidos

solvendos per magistrum collegii aut bursarium ejusdem sub virtute juramenti ad petitionem procancellarii per bedellum atque applicandos eidem communi cistæ in computo. Idem denique procancellarius lectorem in medicina regium ineunte termino post Christi Natales moneat ut se ad legendum paret locumque ipsi cum postulaverit opportunum et dies tres aut quatuor assignet anatomix faciendæ et in crastino finitarum lectionum suarum anatomicarum persolvat ipsi e cista communi impensas omnes tam pro instrumentis quam pro mercede eorum quorum opera usus est in cadavere advehendo dissecando, sepeliendove ceteraque quæ par est in anatomia fieri peragendo Proviso semper quod si intra hoc quinquennium prælectiones istae anatomix ex aliquo defectu omittantur etiam et solutiones omnes supradictæ in eundem annum pariter omittentur."

This provision stirred up the flagging interest of the Regius Professor, and in the succeeding April there was an "Anatomy" as we learn from a letter of Dr Mede of Christ's College, dated March 15, 1627-8: "We had an anatomy lecture upon a boy of some 18 years old, Monday, Tuesday, Wednesday, twice a day the last two dayes. I was once there, but saw it so ill accommodated that I came no more; for it was in the regent house upon a table, when onely halfe a skore doctors could come to see anything, standing close by the table, and so hindering others seeing, which was the chiefe; for I can read as good as they could heare, and with more ease. It will be next time I hope better, for our new doctor<sup>1</sup> will have one every yeare. We talke heare that the body was begged before any was condemned, which if true was very absurd." (Heywood, vol. II. p. 364.)

The room wherein this dissection took place was that which we now know as the Catalogue Room of the Library.

A similar Grace with regard to the expenses of the Anatomy was re-passed on Nov. 28, 1646, during the professorship of Francis Glisson.

During the twenty years from 1570 to 1590 thirty men graduated as M.D., two as M.B., and twenty-six obtained the licence to practise medicine, two the licence to practise surgery. In the succeeding twenty years the numbers under these four

<sup>1</sup> R. Winterton, M.D., of King's College.

heads were—M.D. twenty-nine, M.B. none, licence in medicine, twenty-three and licence in surgery one. In the thirty years following (1610–1640) they were sixty-one and eighteen for the degrees of M.D. and M.B. respectively, and fifty-four licensed to practise. In the eighteen years 1640–1658 fifty-eight obtained the doctor's degree and thirty-five the bachelor's, while thirty-one were licensed to practise.

That others besides the Regius Professor practised Anatomy we learn from another of Mede's letters dated 16th April, 1631, preserved among the Harleian MSS. He writes, "Going on Wednesday from Jesus Colledge pensionary with Dr Ward to his Colledge through the closes and gardens and espying a garden dore open I entred and saw there a hideous sight of the skull and all other bones of a man with ligaments and tendons hanging and drying in the sun by strings upon trees, etc., I asked what it meant. They told me it was the pedler they anatomised this Lent and that when his bones were dry they were to be sett together againe as they did naturally and so reserved in a chest or coffin for their use who desired such an inspection. It was the garden of one Seale a surgeon and a cheife in the dissection. There I learned my former error and the cause thereof viz. that the dissection was at Jesus Colledge but it was in a garden at the Castle and the ground of it being at Jesus Colledge was the hanging of the bones in a garden so neare thir pensionary."

Among Harvey's contemporaries there were several who took high rank among the anatomists of their day. Bulleine, one of the pioneers of English surgery, had graduated two years before Harvey's birth<sup>1</sup>. Helkiah Crooke of St John's College, who graduated in 1599, published in 1616 a folio work on

<sup>1</sup> Bulleine though the most distinguished surgeon of his day was not much of an anatomist. The work by which he is best known is "A little dialogue betwene two men, the one called Sorenes the other Chyrurgi." Cautioning surgeons against excess of timidity he says "soft Chyrurgians maketh fowle sores. On the other syde, he maie not plaie the partes of a Butcher to cutte, rende or teare the bodie of manne kynde. For allthough it be fraile, sore and weake, yet it is the pleasure of God to cal it his Temple his instrument and dwelyng place and the Philosopher dooe call it ORBICULUS, that is a little world."

Descriptive Anatomy entitled *Μικροκοσμογραφία*. It is singular that, although a contemporary of Harvey's, he does not refer to his discovery, even in the second edition of his book published in 1631.

Roger Drake of Pembroke College, who graduated in 1627, took however a vigorous interest in the new teaching. He was a man of profound learning and deep piety; and of him Annesley in preaching his funeral sermon declared that "his writings will be esteemed while there are books in the world, for the stream of piety and learning that runs through them." His chief medical work is his reply to the attack of Primrose upon Harvey, "*Vindiciæ contra animadversiones Primerosii*, 1641."

Another distinguished Cambridge ally of Harvey's was Sir George Ent of Sidney Sussex College, "that great light and ornament of his College to whose incomparable pen Dr Harvey owes half his glory, and to whose divine art both Natural Philosophy and Anatomy owe the hints at least of the best parts of their new discoveries." He lectured on Anatomy at the College of Physicians in 1665, and had King Charles II. as one of his audience. The king knighted him in the Harveian Museum immediately after the lecture.

Hitherto students in medicine from England had to go abroad to finish their studies, but now the fame of "*haec celeberrima academia*," seems to have attracted to Cambridge men who had graduated in Medicine elsewhere, and a Grace was passed on Jan. 28, 1624, to enable those who had taken their degrees as Doctors in Medicine in Universities "*in partibus transmarinis*" to incorporate in Cambridge.

Among the other contemporary Cambridge worthies of the anatomical world Winston of Clare College deserves notice. He was three years senior to Harvey, and graduated here as M.D. in 1608. He lectured on Anatomy at Gresham College in London, and after his death his lectures were published in 1659. They were reprinted under the title of the "*Compleat Anatomist*" in 1664. The lectures show a full appreciation of Harvey's discoveries.

Francis Glisson of Caius, two years younger than Harvey,



follows him very closely in point of eminence. It was one of his books which Haller characterised as *egregius liber ut solent hujus viri esse*; and the great Dutch physician Boerhaave refers to him as "*vir iste, qui omnium Anatomicorum exactissimus fuit.*" He graduated as M.D. in 1634 and was appointed Regius Professor of Physic two years later. This office Glisson held from 1636 until 1677. In 1654 he published his *Anatomia Hepatis*, subsequently reprinted at Amsterdam and at the Hague<sup>1</sup>. The *Tractatus de Rachitide* had been published before this in 1658, and his work on the stomach and intestines in 1677. In 1672 he wrote a philosophical treatise *de Substantiæ Natura Energetica, seu de Vita Naturæ ejusque primis facultatibus*. All his works were subsequently collected and published by Peter van der Aa at Leyden in 1711.

Glisson was a man of erudition and of a philosophic mind. His admirer Walter Charlton, no mean judge, puts him alongside of Bacon, and says of him that he had "the felicity to improve whatever he had borrowed and to raise illustrious Theories from obscure hints." He deserves the credit of having given the first accurate description of the lacteals of the stomach, and he noted the vascular area of the chick.

William Briggs, of Corpus Christi College, another distinguished Cambridge anatomist, is best known by his monograph on the eye "*Ophthalmographia sive oculi ejusque partium descriptio Anatomica,*" published at Cambridge in 1675. To the later edition of 1686 is appended his "Theory of Vision," which he contributed to the Royal Society in 1682. He was a friend of Newton's, and taught him whatever of anatomy Newton knew. Sir Isaac prefixed a most complimentary preface to the 1686 edition, in which he speaks in the highest terms of the accuracy and minuteness of Briggs' anatomical researches.

There is yet another Cambridge name which is perpetuated in anatomical literature, that of Clopton Havers, of St Catharine Hall, who studied Anatomy here in 1684, but left without

<sup>1</sup> Boerhaave in speaking of this work says "*nobilis ille Britannus et Anatomie Professor structuram hepatis descripsit nitide in nobilissimo illo et incomparabili Tractatu de Hepate.*"

graduating. His five discourses, read before the Royal Society, and reprinted in 1691 under the title of "Osteologia nova," include the classical description of the Haversian canals in bones, and of the Haversian bodies in joints<sup>1</sup>.

Another classic anatomist of this period was Thomas Wharton, of Pembroke College, born in 1614<sup>2</sup>. Having studied anatomy both in Cambridge and London, he published in 1656 a remarkable work, *Adenographia*, wherein he describes, among other structures, the ducts of the submaxillary glands to which his name has been attached. In later days a newer Cambridge investigator, Langley, has given us our best and most detailed observations on the structure of these glands.

Among the scientific contemporaries of these great men were others, equally distinguished in other branches of natural science. William Croone, of Emmanuel, who graduated as M.D. in 1662, afterwards Lecturer on Anatomy in Surgeons' Hall and the founder of the Croonian Lectures, was one of the earliest of Cambridge embryologists, and contributed a paper "on the conformation of a chick in the egg" to the *Philosophical Transactions* for 1671. His better-known memoir *De Ratione motûs musculorum*, was published in London in 1676.

Another distinguished naturalist of that period was his friend Martin Lister, of St John's College, whose contributions to the knowledge of the mollusca were many and valuable.

Needham, of Trinity College, was a still earlier embryologist, as his work *De Formatione Fœtu* was published in 1667.

The fame of Glisson attracted to Cambridge a young Oxford student, George Jolyffe, who in 1651 had discovered that there were, throughout the body, vessels of a kind similar to those which Aselli of Cremona had described as existing in the wall of the digestive canal and abdomen. Jolyffe joined Clare Hall and graduated in Cambridge in 1651, and shares with Bartholin and Rudbeck the credit of the discovery of the lymphatic system.

<sup>1</sup> "Palmar omnibus præripuit clarissimus ille Medicus Britannicus Clopton Havers." Haller's *Boerhaave*, p. 266.

<sup>2</sup> "Eminentissimus ille anatomicus, gravissimæ auctoritatis in Anatomia et bonæ fidei, laudisque optimæ, non magnus ratiocinator, sed unice fidens cultro anatomico." *ibid.*

Even after Glisson's death the anatomical school of Cambridge had not lost its attractions. During the Professorship of Dr Brady, Master of Caius, who had been Glisson's deputy and was ultimately his successor, two other migrants from Oxford were attracted to our University for the pursuit of anatomical study. One of these, Edward Tyson, who joined Corpus Christi College in 1680, was one of the most painstaking of early Comparative Anatomists. He published, in the year of his incorporation, a work on "The Anatomy of the Porpoise," with a Discourse concerning Anatomy; and nineteen years afterwards he issued his remarkable work, "Ourang Outang sive Homo Sylvestris, or the Anatomy of a Pigmie compared with that of a mōnkey, an ape and a man," which was one of the most valuable contributions to comparative anatomy in its century. His tombstone states of him that he was for many years Anatomical Lecturer at the College of Surgeons.

Professor Brady was a zealous official, and petitioned the king for greater stringency in the conditions of graduation in Physic. This was conceded, Physic and Law being put on the same footing by king's letter dated April 8, 1681.

The other accession to our school by incorporation was Humphry Ridley, who joined Pembroke College in 1688, and whose work on the "Anatomy of the Brain," published in 1695, was certainly the best on its subject at that date.

Another student of Anatomy in Cambridge was James Drake, of Caius, who graduated as M.D. in 1682. On leaving Cambridge, Drake had given up anatomy and commenced authorship as a play-writer, but his first essay in that department, *The Sham Lawyer*—although performed at Drury Lane, proved unsuccessful. Turning then to history and politics he became a noted Tory pamphleteer, and narrowly escaped prosecution and the pillory through a fortunate error in the drawing out of the indictment against him. Finally he returned to the less exciting task of writing a treatise on anatomy, *Anthropologia Nova, or a New System of Anatomy*, which was published by Smith and Walford in 1707, and which in the succeeding twenty years went through three editions.

Early in the eighteenth century there was a general move-

ment in all the Universities in the direction of providing more systematic teaching in Anatomy. The necessity of affording more efficient medical aid to our soldiers, and the example of foreign, especially the Dutch Universities, stirred up those who were interested in medical education in this direction. In the year 1705 Dr Elliott applied to the Town Council of Edinburgh to be allowed to give instruction in Anatomy, and it is recorded in a Minute of the Council dated August 29 in that year that they granted his request, but he was not then definitely named University Professor, and that title is not used until some time later.

As through the instrumentality of Caius, the University of Cambridge had taken a foremost place in introducing Anatomy as an academic study, so now of their own motion the University took action in founding a Professorship in this science, and by a Grace passed in June 1707 they instituted this new office, "*Cum Georgius Rolfe varias anatomias in hac academia perfecerat summa cum laude in usum studiosæ juventutis optimum placeat vobis ut professoris Anatomici titulum propter singularem ejus in ista facultate peritiam honoris ergo consequatur.*"

As hitherto the accommodation of the lecturers in Anatomy had been unsatisfactory<sup>1</sup>, so at this period of new departure it

<sup>1</sup> Dissections before this time were not always performed in the Regent House; but in 1673 at any rate they took place in the Physic School, now the first floor of the south building of the Library. In a rare and curious pamphlet, "*A Poem attempting something upon the rarities of Cambridge*" published by Nicolson in 1673, there occurs this verse:

On the left hand the Physick Schools: an Art  
 The usefulest Heaven ever did unto the world impart.  
 There 'tis the brave discoverers do scan  
 The little world, the world of man.  
 See how the Sun, the Heart  
 Doth life and vigour to each limb impart.  
 How in small rivolets the Blood doth pass  
 And secretly doth visit all the Mass  
 The strange Composure, and the wondrous Art  
     The Symetry of every part  
     While in this little space they find  
 All the great wonders of the greater world combined  
     Just as we see  
 Cambridge, of all the Learned world, is the Epitome.

became necessary that steps should be taken to provide the newly-appointed professor with a proper laboratory. Accordingly in October 1716 the following Grace was passed, "Cum ad honorem academix et medicæ artis incrementum pertineat ut lectiones chemicæ et anatomicæ in loco publico habeantur. Placeat vobis ut typographium novum academix alioquin infructuosum ad usum Johannis Waller S. T. B. professoris chemiæ et Georgii Rolfe professoris anatomicæ destinetur et hi professores eorumque successores gratia venerabilis hujus senatus constituti lectiones suas eo in loco habeant celebrentque utque insuper eidem Johanni Waller dictum typographium ita concinnare liceat ut operationes chemicæ rite et commode inibi præstari poterint."

This first Anatomy house stood at the corner of Queens' Lane in Silver Street, and was the new part of the Printing-house built in 1689: the old Printing-house beside it having continued to be used for purposes of the press. The round lecture room with its hanging skeleton is figured in Ackermann: and the private room adjoining was shared by the Professor of Anatomy with the Professor of Modern History. Here the anatomical work of the University Professor was performed for over a century.

Sir George Paget informs me that the first dissection in which he was engaged was carried on in the private room adjoining the lecture room, which had then been given over to the History Professor. The body cost him £15. 14s. and came from the Hulks.

In 1832 the dodecagonal museum and adjoining rooms were built on the site of the old Botanical Garden, and the Anatomy school was moved thither. The first dissecting room in this new building was a small middle room since broken up by a staircase. On the removal of the Botanical museum to another building, Anatomy was moved to the space vacated by it in the back room on the ground-floor. This proved too small to meet the growing requirements of the school; and in 1861 the building was modified; the large upper room, our late bone room, became then the new dissecting room. The class having outgrown this room, we had our temporary iron building erected

four years ago, from which we to-day emerge into the magnificent building in which the Anatomical Department is at last worthily housed.

The University of Dublin followed Cambridge by founding a Professorship of Anatomy in 1711, but there was no separate chair of Anatomy in Oxford until 1854. There had been however a titular chair created in 1624 under the title of Tomlin's Professor of Anatomy, but it was merely an additional endowment for the Regius Professor of Physic, not a separate office. The first professor in this subject in Oxford was appointed, in accordance with the Ordinances of the University Commission, in 1860.

The foundation of the chair and the provision of an Anatomy house were not productive of any increased interest in the subject. The zeal of the first professor seems to have flagged, and his negligence was taken notice of by the Senate; who, at a Congregation on the 16th December, 1722, passed the following Grace, "*Cum Georgius Rolph Anatomiae Professor a suo munere diutius se subduxerit placeat vobis ut nisi ad idem exequandum comparuerit ante ultimam diem termini sequentis munus ipso facto vacat.*"

The warning, however, was without effect; and, six years afterwards, the long-suffering Senate passed a Grace declaring the chair vacant.

April 17, 1728, "Whereas Mr George Rolfe who by favour of this Senate obtained the Professorship of Anatomy in this University, has been several years absent from his office: and though sent to by Mr Vice-Chancellor's order has taken no notice, and continues still in neglect; may it please you that his Professorship be declared vacant and that another by you be chosen to succeed him in his office and title."

The second professor, John Morgan, was appointed in 1728 and held office until his death in 1737. I have no record of his work but we have indirect evidence that Anatomy was diligently studied, for during his term of office the resurrectionist was busy in the neighbouring churchyards. Masters, in his History of Corpus Christi College (p. 196), tells us that "the practice of digging up human bodies in the Churchyards of this

town and the neighbouring Villages, and the carrying them into Colleges to be dissected which became more common than usual about this time (the Mastership of Dr Mawson, 1724) although to the no small offence of all serious people, was now proceeded against and the disturbance which this scandalous practice caused between the scholars and the inhabitants was prevented." This was by an Ordinance which was ultimately passed during Mawson's Vice-Chancellorship, December 10th, 1731, "*Cum sepulcorum cadavera e cœmeteriis sæpius furtim surrepta fuerint ad gravem plurimorum offensionem, Placeat vobis ut quisquis in posterum e cœmeterio cadaver aliquod surripuerit vel ita surreptum celaverit infra limites academice postquam legitime convictus fuerit coram procancellario si scholaris sit nondum graduatus suspendatur a gradu capessendo per biennium ultra consuetum tempus si vero sit graduatus gradu suo privetur sin scholarium gaudeat privilegio in perpetuum privilegium suum amittat.*"

The prohibition does not seem to have been effectual, for on the 2nd April, 1732, a body exhumed from a neighbouring churchyard was traced into Emmanuel College, and the pursuers obtained a warrant from a magistrate, Mr Pern, to search for it; although this, in the opinion of one of the highest legal authorities of the time, was illegal. However the body was too carefully concealed to be found by the searchers<sup>1</sup>.

An effort was made to obtain an Act for the better enabling the Faculty of Physic to take for dissection the bodies of persons who had been executed for felony and other crimes, but owing to the opposition which it encountered the Bill was dropped.

Some years afterwards a private arrangement was made whereby two bodies were sent up from London to Cambridge for the professor's public demonstrations each year. These were supplemented by others, obtained privately from other sources. None of the Cambridge resurrection men seem to have been caught in the act; but those of Oxford were not so

<sup>1</sup> The history of the more recent Anatomy riot, on Dec. 2, 1833, when a disorderly crowd attacked and broke into the Anatomy House will be found in Cooper's *Annals of Cambridge*, Vol. iv. p. 579, and in the "*Cambridge Chronicle*" of that week.

fortunate. Joseph Bowen, who was convicted on May 4, 1717, of exhuming a body for transport to Oxford was fined 40s. and whipped from Newgate to Smithfield Bars.

Morgan was succeeded by George Cuthbert, Fellow of Trinity, who held office for one year only, and was followed by Robert Bankes, of King's College, a Fellow of the College of Physicians, who filled the chair until his death in 1746. There was in that year a contest for the office; Gibson, a Fellow of Jesus, succeeded in obtaining it by 55 votes; the unsuccessful candidates being Hutchinson, of St John's, and Scotsman, of Caius, who received 43 and 42 votes respectively. Gibson held the professorship until 1753.

This first half century of the professorship was a period singularly barren in regard to progress or discovery. I can find no traces of any research, or of any teaching worthy of the name. There seems to have been no museum, and if we may judge from the references in contemporary pamphlet literature, the endowment of the science seems to have extinguished the spirit of interest in it, which had been so productive in the preceding century. In "A Letter from a Physician in Town to his Friend in the Country," published by Miller in 1753, the author finds fault with the College of Physicians for giving special privileges to men from the universities: "Medicine is not regularly taught either in Oxford or Cambridge. The professors do not always reside, and seldom teach physic." And he satirically adds: "I would by no means be thought to intimate that a physician bred at Oxford or Cambridge must be inferior to one who has studied at other Universities. There are geniuses who surmount every disadvantage."

The ease with which degrees were to be obtained by those who resided at the Universities is referred to in another pamphlet, *Pharmacopolæ justificati*, published by Roberts in 1724, in which the author says that the student "need not fear being denyd a degree in physick from the University, for I think I may affirm that there are very few or no instances of persons stopped for insufficiency in that study."

Gibson's successor, Charles Collignon, Fellow of Trinity, was in some respects a remarkable man. He has left behind



a sample of his teaching, having published in 1756 a syllabus of his course, entitled *Compendium Anatomico-Medicum eorum quæ in Scholis apud Cantabrigienses mense Martio quotannis explicat demonstratque Charles Collignon, M.D.* His course consisted of twenty-eight lectures, but he says that they were not always delivered in the same order. He did not teach or lecture except in the Lent term. This professor also published in 1763 his introductory lecture, under the title *Tyrocinium Anatomicum*. His style is of the stilted rhetorical character so common at this period: thus he speaks of the nervous system as "a kind of boundless ocean—a deep unfathomable abyss. The nerves are those (almost tyrannical) instruments of sensation, without which we can have no bodily perceptions, and by means of which we can suffer such variety of pain." He tells us that in his lectures he combined with the Anatomy "a mixture of Physiology which, properly interspersed, greatly relieves the nauseous satiety of bare descriptions." In spite of this, if the *Tyrocinium* be a fair sample, his lectures must have been uncommonly dull for his class, which probably was a very small one.

Leaving the beaten track of Anatomy, Collignon published a heavy tractate, entitled *Medicina Politica*, in 1765. In the previous year, he had brought out a popular treatise, entitled, *An Inquiry into the Structure of the Human Body, relative to its Supposed Influence on the Morals of Mankind*. He also published an equally uninteresting work, *Moral and Medical Dialogues*, in which his characters, Hortensius, Sophronius, Cleanthes, Philalethes, and Ariston, discourse of nature, habit, etc.

During Collignon's professorship a strange and gruesome incident occurred in the history of our school. Near the end of the Lent term of lectures in 1768, the professor invited two friends to see an interesting dissection which he had prepared to illustrate his lecture for March 26th. The body was one which had been procured by a resurrectionist who had brought it from London on the previous day. The friends accompanied him to the room, and during the dissection one of them uncovered the face of the dead man, and recognised it as that of Laurence Sterne, whom he had known in his lifetime. Poor

Tristram Shandy had died of phthisis in an obscure lodging, and had been followed to his grave by two friends. His place of interment was St George's Burial-Place at Tyburn, a favourite spot for the operation of the resurrectionists, and it had probably been disinterred that night, brought to Cambridge, and sold to Collignon. Malone records that he had the story directly from the lips of the gentleman who recognised him; and at a later date it is recorded that the Rev. Thos. Greene stated that he saw the skeleton of Sterne in Cambridge. I am informed by Mr J. W. Clark that the story was current when his father was appointed professor in 1817. What the ultimate fate of the unfortunate satirist's bones has been I cannot discover. I have been unable to identify any skull in the collection as that of the author of *Tristram Shandy*, who, having so tragically ended his sentimental journey of life, returned after death to his old university. It is a singular coincidence that of the two great Irish satirists of that period, the skull of Swift should have temporarily sojourned on the shelves of the museum in Dublin, and that of Sterne in the collection at Cambridge.

On the death of Collignon, Busick Harwood of Christ's, and afterwards of Emmanuel College, was elected to the chair, which he held until 1814. Shortly after his election he commenced the publication of a large work on Comparative Anatomy, but, not receiving sufficient encouragement, one part only was published, that on the organ of smell. It is a matter of regret that the project fell through, for the part of the work issued shows originality and erudition, and is beautifully illustrated. It was translated into German, and published under the editorship of Wiedemann. To Harwood we owe the foundation of our anatomical museum, as he prepared a series of specimens to illustrate his lectures, and the University purchased these at his death.

The gossipy chronicler, Gunning, tells many amusing incidents of Harwood's domestic life. He tells us that in his day Cambridge was but a poor school for medicine. Harwood had been in practice in India for some years before coming to Cambridge and was a man of some means. He lectured on Com-

parative Anatomy, "and it was no unusual thing to see the turbot on which Mr Orange, his demonstrator, had exercised his skill one day, carved by the professor on the following." Harwood received the honour of knighthood; and on his death in 1814 was buried in the midst of the grass plot between the Lodge and the Dining Hall of Downing College.

Haviland, of St John's, succeeded Harwood, and held the chair for three years; and, being elected into the Regius Professorship of Physic, he was succeeded by Dr Clark.

Dr Clark entered upon his office in 1817, and held the professorship for forty-nine years. He is best known to science as the translator of Van der Hoeven's *Zoology*, and he has earned the gratitude of the University by his untiring labours in the formation of a creditable museum. Conscious that the teaching of anatomy, more especially of comparative anatomy, in which, rather than in human, he was particularly interested, could not be carried on without a collection, Professor Clark added largely to the nucleus of Harwood's Museum. He procured from Italy a number of anatomical models in wax, purchased a number of specimens from Brookes's Museum, and the whole of the collection made by Professor Macartney, of Dublin.

The Macartney collection deserves a special word in passing, but I refrain from a fuller reference at present, as I hope shortly to publish a biographical notice of that distinguished Anatomist. Professor Macartney had, while lecturing on Comparative Anatomy at St Bartholomew's in the early days of the century, prepared a series of illustrative specimens, which Sir Charles Bell, Brodie, and Home pronounced to be the most beautiful dissections they had ever seen. During his twenty-one years' service as professor in Dublin, he added to this museum until his specimens numbered over 2,000. When elected to the Dublin professorship he found a museum of fewer than 100 specimens, a lecture class of 15, and a dissecting roll of three students. He raised the class to be the largest in the kingdom, and attracted to it men from all parts; but he met the fate of a reformer, and was in the end forced to resign. The authorities in Dublin having refused to buy his museum, he offered it to Dr Clark, who most willingly induced the Uni-

versity to secure it, Cambridge giving him for it an annuity of £100 a year for ten years. Clark's museum consisted of 1,307 specimens, and with this accession of 2,000 it became one of the best selected and richest collections in Europe. In 1837 Clark wrote to Macartney to tell him how much admired the collection was by visitors. He says that Owen and Buckland having come to Cambridge to examine the fossils in the Woodwardian Museum, were so much taken with Macartney's specimens that they spent most of their time in the Museum of Anatomy. "In short, your museum is the chief lion of Cambridge."

In the provision of a permanent home for the Museum of Comparative Anatomy Professor Clark took an active part and most generously helped the University by timely pecuniary aid.

To him and to his son, our present distinguished Superintendent of Museums, we owe the large and well-arranged collection illustrative of Comparative Anatomy: which is, for teaching purposes, second to no museum in Europe.

Hitherto there had been only one professorship in subjects relating to animal life and organization; but in the beginning of the second half of this century rapid changes were in progress in biological science in general and in the Cambridge School in particular. On the one hand, the growth of knowledge and of interest in Biology was rapid and unprecedented; and on the other, the more purely medical side of the Cambridge School of Natural Science, so long dormant, began to show signs of reviving life, owing chiefly to the labours and influence of two men—Sir George Paget and Sir George Humphry.

The new interest in Biology and the kindred subjects showed itself in the foundation, in 1851, of the Natural Sciences Tripos whereby these sciences were recognised as branches of general education in the University; and the Professor of Anatomy was made an *ex officio* examiner in this tripos. At first this tripos did not admit to the B.A. degree; but this was altered in 1861 when the Natural Sciences Tripos was put on the same footing as the older Mathematical and Classical Triposes.

In consequence of these developments the duties of the

chair were divided, even during Dr Clark's Professorship (about 1852), Dr Humphry taking the lectures in human anatomy and the Professor delivering a course in comparative anatomy. When the professorship became vacant in 1866 the subject of anatomy was divided, Professor Humphry being elected into the Chair of Human Anatomy and Professor Newton into the newly-founded Chair of Zoology and Comparative Anatomy.

The Professor of Human Anatomy examined for the Natural Sciences Tripos in the first year of his office; and, mainly through his instrumentality, in 1876 Human Anatomy became recognised as a separate branch of science in the examination. There were of course prejudices to be overcome, and public opinion had to be educated out of the narrow view that Human Anatomy was a mere technical art useful only in the training of medical practitioners. But by his wise advocacy and untiring efforts to promote a more intelligent view in the University, the Professor placed his science in its proper position as the most important branch of Animal Morphology: it being that one special case of an animal whose structure we can examine even to the minutest particulars and whose details are all of philosophical as well as of practical importance. The Anatomy of the human body illustrates in the best possible manner the general laws of the organization of Vertebrate Animals. The experience of the past fifteen years has fully vindicated the action of Professor Humphry in this respect.

The elevation of Human Anatomy to its proper position as a branch of general education has had its reflex effect on the study itself. It is to us no longer a dry catalogue of disjointed facts, a series of tables of names and relations. We realize that there is a meaning in every fact: it may not be as yet discernible, but we have learned enough to know that, by patient study, the obscurities in the history of the organization of the human body will be unravelled; and there is no branch of science which holds out greater inducements to the student or greater promise of discovery than Human Anatomy.

Of the progress of the department since 1866 there is no need for me to speak. The labours of him whom our gracious Sovereign has recently delighted to honour are fresh in our

memories, and we all most heartily unite in wishing that he may be spared for many years to participate in the prosperity of our University Medical School, whose present vigour and activity are so largely due to him. In many branches of anatomy the researches of Humphry have become classical. His work *On the Human Skeleton* was an epoch-making monograph in British Anatomy; and his various works on *Myology* are all of the highest importance to comparative anatomists. It was therefore a well-merited tribute to his position as the foremost of British anatomists that he was chosen as the first president of the Anatomical Society of Great Britain and Ireland.

It will be unnecessary to make more than a passing allusion to those more recent advances in organization which have taken place in our school. The differentiation attendant on increase and specialization of function has eventuated in another professorial 'mitosis' and fission; and now Physiology is separated from Anatomy, and is under the presidency of the most renowned of British physiologists, Michael Foster. I must make a claim for the share of Anatomy in many of the researches of our unequalled staff of teachers in Physiology. The labours of Gaskell on the organization of the central and peripheral nervous system, of Lea on the structure of the pancreas, of Langley on the salivary glands—all are solid advances in Anatomy.

On the staff of our anatomical department we have the good fortune to include Dr Hill, the Master of Downing College, whose researches on the central nervous system are important contributions to Morphology, and in whom I have a colleague upon whose ready help and sympathy I can always depend.

And now in entering upon our new place of abode, with the increase of advantage in room, in light, in appliances, it behoves us to realize our responsibilities as the inheritors of the traditions of the past.

It is not given to every one to add as our forerunners have done to the sum of anatomical knowledge, but it is the duty of all to be learners. Let us make the practical side of the science particularly our aim, and let it be the characteristic of our school in the future as it has been in the past, that whatever

is taught or investigated shall be thoroughly done. The characteristics of Cambridge science in the past have been exactness and thoroughness; and in the University of Bacon, of Newton, and of Darwin we must see to it that our work is carried on with zeal, that our methods are characterised by precision, and our results recorded with accuracy.

The examples of the great men who have worked here, often under manifold disadvantages, should stir us up to further effort. The domain of human anatomy is wide, and much of it yet remains to be sought out; but all the easy work is done, and research in the future requires pains and patience. May our new anatomy buildings be the centre of renewed activity, and may the work done here be worthy of our ancient University and our still more ancient science.