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BY

THOMAS JOSEPH PETTIGREW,

F. R. S. F. S. A. F. L. S.

Member of the Royal College of Surgeons; Surgeon to the Asylum for Female Orphans, &c.; late Lecturer on Anatomy, Physiology, Pathology, and the Principles and Practice of Surgery; Doctor of Philosophy of the University of Gottingen, &c. &c. &c.

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FREDERIC RUYSCH, M.D. F.R.S.

“Utilium sagax rerum.”—HOR.

THE name of FREDERIC RUYSCH is celebrated in the annals of anatomy and medicine. His father, Henry Ruysch, was secretary of the States General of Holland. Frederic was born at the Hague, March 23, 1638. Having studied at Leyden, and being destined for the medical profession, he devoted himself with uncommon assiduity to the study of anatomy. He took his Doctor's degree in 1664, returned to the Hague, married, and entered into practice. Shortly after this, Holland was visited by the plague: it raged with the greatest fury, and young Ruysch was selected by the States to take the charge of the cases that occurred at the Hague. He performed the painful and onerous duties connected with such a position, to the entire satisfaction of his fellow-citizens.

His first work, “*Dilucidatio Valvularum in Vasis Lymphaticis*,” was published in 1665, and again in 1687; and this work contained an account of the controversy in which he had, at the instance of Sylvius and Van Horne, been engaged with Louis de Bils, relative to his proposed method of preserving bodies from putrefaction, and which inquiry produced certain discoveries in the lymphatic system. Ruysch lays claim to being the discoverer and demonstrator of the valves belonging to this system of vessels; but he admits that they might have been seen previously by other anatomists. The publication of this work tended to increase the reputation he had already acquired; and he was, in the succeeding year, invited to the chair of anatomy at Amsterdam. He now determined to devote his life principally to this essential branch of medical study; and human and comparative anatomy were alike the objects of his profound attention. His minute dissertations have never been surpassed, nor his ability in the various modes of making anatomical preparations. His injections have been surprisingly minute, and have served to display the most elaborate

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structure of the human body. His success in the injection of the blood-vessels was such as fairly to warrant the epithet "marvellous," which has been applied to them. The extreme branches were so well filled as to give to the dead body "the freshness of youth, and to imitate sleep rather than death."* Reginald de Graaf was the first to employ the syringe to aid researches into the anatomical structure of human bodies; and to him and Swammerdam are generally attributed the adoption of coloured injection into the vessels; and to Ruysch, Swammerdam is said to have imparted his knowledge upon quitting the paths of medicine and philosophy for the mysteries and superstition of Bonrignon. An instance of the success of Ruysch in the preparation of bodies by injection, is recorded in the case of Admiral Berkeley, who was killed in an action between the English and Dutch fleets on the 11th of June, 1666. The body of the admiral was rapidly advancing to putrefaction, and was therefore, by order of the States General, submitted to Ruysch for injection, to prevent further corruption. In this he succeeded so well, that it came out of his hands so improved and so fresh, that it was transmitted to England, and the operator rewarded handsomely for the exercise of his ingenious talent. A museum formed with such ability could not fail to be exceedingly attractive, and it was visited by the learned from all parts of the world. The czar Peter, in his journey through Holland in 1698, spent many days in the museum of Ruysch, partook of his frugal fare, and in 1717 arranged for the purchase of the collection for the sum of 30,000 florins, and consigned it to Petersburg. The czar is reported to have been so delighted with the preparations, that he could not withhold from kissing a dead infant which appeared to smile upon him.

In 1691, Ruysch published in 4to., "*Observationum Anatomico-Chirurgicarum Centuria*;" to which he added, a catalogue of the rarities contained in his collection. In 1710, the "*Thesaurus Anatomicus*," 2 tom. 4to.; also the "*Thesaurus Animalium*;" and between the years 1717 and 1723, his "*Adversaria Anatomico-Medico-Chirurgica*." The "*Epistola*

* "Tous les cadavres qu'il a injectés avoient le lustre, l'éclat, et la fraîcheur de la jeunesse: on les auroit pris pour des personnes vivantes profondément endormies, et à considérer les membres articulés, on les auroit cru prêts à marcher. Enfin on pourroit presque dire que Ruysch avoit découvert le secret de ressusciter les morts. Ses momies étoient un spectacle de vie, au lieu que celles des Egyptiens n'offroient que l'image de la mort. L'homme sembloit continuer de vivre dans les unes et continuer de mourir dans les autres."—Eloy, *Dict. Hist.*

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Anatomicæ" were published in several parts at different times. The whole of his works have been collected, and published in 5 vols. 4to. as, "Opera Omnia Anatomico-Medico-Chirurgica," in 1721 and 1735. The latter is the best edition.

The minute dissections of Ruysch, and the length of time devoted by him to their display, doubtless rendered him incapable of devoting much time to reading, and probably led him to claim the discovery of many parts previously noticed by other observers. This brought him into many disputes, so that no name, as a controversialist in anatomical matters, is more familiar than that of Ruysch. His merits must, however, be admitted, for his researches into the course and communications of the bronchial arteries, the vascularity of the brain, the structure of the tunica arachnoidea, and the formation of the glandular system. His discoveries as to the structure of parts of the eye and ear also entitle him to regard. He was appointed Professor of Physic in 1685, and he filled the chair for forty-three years; when, from a fall in his chamber, he fractured his thigh-bone, and became disabled for farther exertion. He was highly esteemed abroad, and was elected a Fellow of the Royal Society of London; and he was the successor of the immortal Sir Isaac Newton in the Academy of Sciences of Paris. He was also a Member of the Academy of Petersburg. He died of fever, February 22d, 1731, having reached the advanced age of ninety-three years.

Ruysch possessed the confidence of the ministers of his country. He was their forensic physician, and he also presided over the establishment for midwifery. He paid much attention to botany, and dissected plants with the same precision as bodies belonging to the animal kingdom. He filled the botanical chair; and he put forth, at the age of ninety, "*Curæ renovatæ, seu Thesaurus Anatomicus post curas posteriores novus*," which relates particularly to these researches. At eighty years of age he had the hardiness to commence the formation of another museum, and succeeded in accomplishing his object, and he even made a catalogue of the collection.

Posterity has not been remiss in assigning to Ruysch the merit due to him for his laborious anatomical researches, nor niggardly in bestowing praise upon the excellence and beauty of his preparations. According to all accounts, no collection ever contained such specimens: and some varieties in the mode of their preparation, from those usually adopted by anatomists, must have been employed. Reproach, deserved reproach, hangs upon the memory of this physician, for having allowed his secret to be buried with him in the grave. His son, Henry Ruysch, also a physician, and the assistant of his father in the formation of his museum,

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died four years previously to his father, and all means of procuring information upon the subject was lost. From recent researches it would appear probable that the preservative agent employed by Ruysch was arsenic, which so powerfully resists animal decomposition. The extraordinary effect of this otherwise destructive mineral substance has been remarkably shewn in a late case of trial for poisoning, in which it was found, that from the administration of arsenic, the stomach and bowels of the individual to whom it had been wickedly given, were so preserved, as to lead to the detection and conviction of the murderer. Mr. William Pettigrew has been in the habit, in the course of his dissections, of injecting into different parts of the human body a weak solution of arsenic, the effect of which is to resist putrefaction, and render haste unnecessary in the pursuit of anatomical inquiry. He has found a limb, at the expiration of two months, as well fitted for the purposes of dissection, as at the time usually selected after decease.

Upon the death of Ruysch, his museum was publicly sold, and the King of Poland devoted 20,000 florins to the purchase of a part, which was at Wittenburg in the time of Haller.



Portrait of Samuel Johnson
1774

10. 28. 1774

ALBERT DE HALLER, M.D. F.R.S.

“*Artis Medicæ decus.*”

HIPPOCRATES has been styled the “Prince of Physicians.” Haller may justly be called the “Prince of Physiologists.” No individual, either of ancient or modern times, has equalled him in the extent of his erudition, and the magnitude of his labours. He united to considerable learning and genius, the most laborious industry and patience of observation, and he has thrown numerous lights on the science of physiology, reducing to demonstration that which was before merely conjectural, and placing the foundations of the science on its only true basis—an attentive examination into the intimate structure of the human body, and an observation of the various phenomena “by which we live and move and have our being.” There is a limit, however, to all human knowledge, beyond which it is impossible to pass. Of this Haller was most fully sensible. He well knew how ignorant we are, and ever must be, of FIRST CAUSES. The effects of these are apparent to our senses, but their nature and origin are hidden from our view: there is, indeed, an agency beyond all that the scalpel can trace or the microscope detect—truths which reason can never discover, nor the most exalted intelligence adequately comprehend. The Psalmist tells us, “Such knowledge is too wonderful for me: it is high, I cannot attain unto it.”

ALBERT DE HALLER was born at Berne on the 18th of October, 1708. He was the son of Nicholas de Haller, an Advocate and Chancellor of the County of Baden, a descendant of an ancient patrician family of the city of Berne: and his mother was the daughter of one of the members of the sovereign council of that republic. In early life Albert de Haller displayed much activity of mind and determined perseverance, and gave promise of great genius. It is reported, that when only four years of age he made short exhortations to the domestics of his father’s house, on texts of scripture, at the customary family prayers, for Haller’s parents were distinguished for their piety. At nine he had composed for his own use a Chaldaic Grammar.

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a Hebrew and Greek Lexicon, and a Historical Dictionary containing upwards of 2000 articles extracted from the Dictionaries of Moreri and Bayle. At this time he was called upon to present a piece of writing in the Latin language, to pass to the upper school. Haller presented one in Greek. Such efforts at so premature an age justly excited the fears of his father, who apprehended that his son's eagerness to learn every thing might prove destructive of profound acquirements. He therefore placed him under the tuition of a preceptor: but he was ill adapted to the developement of such a mind as Haller's: a man more distinguished by the persecutions to which he had been subjected on the score of his religious opinions, than by any high mental attainments. He was stern and severe; but these qualities did not destroy the ardour of his pupil, or create a disgust for study. They produced another effect—they excited a desire of revenge, which was exhibited in some Latin verses directed against the teacher, whom he never could see without, it is said, feeling a kind of involuntary terror. At thirteen years of age, Haller lost his father and also his fortune. He had been destined for the church, but now, left to his own choice, he selected medicine. He was placed at a public school, where he gained great distinction for his classical knowledge. He also manifested a taste for poetry, and composed several poems. At fifteen he had written tragedies and comedies, and also an epic poem of 4000 verses, in which he attempted an imitation of Virgil; and upon the house in which he resided being on fire, at the hazard of his life he rescued from the flames those efforts which he then regarded as the most precious of his possessions in the world. One year, however, served to dissipate this illusion, and he committed the papers to the same destructive element from which he had preserved them, and directed his attention to the study of philosophy. He studied under Camerarius and Duvernoy at Tubingen, afterwards at Leyden under Boerhaave in the year 1725. Here he associated with Albinus and Ruysch, and other great men, until his health being impaired, probably by intense application, he was compelled to travel, and went into Lower Germany. Upon his return he took the degree of Doctor of Medicine, and chose for the subject of his thesis a discourse on a pretended discovery of a salivary duct by Coschwitz, which Haller and Duvernoy had shewn by dissections, both of the human and brute species, to have no existence. He visited England in 1727, and became acquainted with Sir Hans Sloane, Cheselden, Douglas, Pringle, &c. After paying a visit to France,* where for a short time he studied under Winslow,

* His stay in Paris was short, owing to an information having been lodged against him for dissecting human bodies, upon which subject the prejudices of the French people were at this time very strong.

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Le Dran and Louis Petit, he went to Basle, and attended to mathematics with the celebrated Bernouilli, and here he commenced the study of botany, and laid the plan of his work on the Plants of Switzerland. He returned to Berne in 1730, being then only twenty-two years of age. His poetical genius again manifested itself—but in descriptions of nature, in reflections on mathematics, morals, and all the feelings which exalt and dignify the human character. These were published, and soon translated into French, and gained for their author a deserved celebrity. His devotion to the Muses formed no impediment to the cultivation of philosophy—to severer and more important pursuits. The works he has published sufficiently demonstrate the labour that must have been exercised in anatomical and physiological studies, the observation of disease, &c. These, sufficient in themselves to engage the whole time of any man of ordinary powers, were insufficient for the grasp of Haller's genius—he revelled in the whole domain of literature and science, and there is scarcely a subject within the range of letters in which he has not exhibited some extent of knowledge. No vicissitude of fortune, no change of circumstances, could for a moment divert his mind from the pursuit of learning. Blessed with a most powerfully retentive memory,* he had also the faculty of order; he methodized his acquisitions, and the beneficial results he gave to mankind. To extend his acquaintance with botany, he made several excursions, ascending the highest mountains of Jura and the Alps; he visited also the marshes, and he surveyed the vineyards, in the more temperate parts of his native country.

In 1734 the republic of Berne established a public amphitheatre, and Haller was appointed to teach anatomy. He was also appointed to a hospital, and had the arrangement of the public library and the cabinet of medals. His abilities were soon, however, to be exercised in a wider field. George II. called him to Göttingen, where he was made Professor of Anatomy, Surgery and Botany. He accordingly left his native country, accompanied by his wife, whose tastes are said to have corresponded to those of her husband, with whom she lived in great happiness, and gave to him three children. Haller's health was infirm: travelling with a family was in those days difficult and troublesome, and by an accident in the overturning of the carriage, his wife sustained so severe an injury that she died almost at the instant of her arrival at Göttingen. In a melancholy and dejected state of mind, therefore, did Haller enter upon the performance of

* Of his extraordinary memory an instance has been related of his having enumerated all the sovereigns mentioned in De Guignes's History of China, together with the principal events that occurred during each reign.

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his new duties : removed from all his relations and immediate connexions, he sought relief in the objects of his studies, and proved the truth of an observation made by the celebrated Madame de Stael, that “*Le meilleur moyen de calmer les troubles de l'esprit n'est pas de combattre l'objet qui les cause, mais de lui présenter d'autres, qui le detournent et l'éloignent insensiblement de celui là.*” He soon acquired great popularity. His attention to his pupils* was unwearied, yet he found time for the composition of those numerous works by which he has been so well known to, and admired by, posterity. Physiology obtained of him the greatest share of his time—and what pursuit so well entitled to such distinction? Anatomy demonstrates the substance, shape, condition and connexion, and relative dependence, of the several parts which enter into the formation of an animal body. Physiology teaches us the adaptation of this structure and those properties to the functions the several parts have to perform, and traces also the influences upon which they depend for their just and proper action. In the prosecution of physiological research, a reference to comparative anatomy is absolutely essential, for by this study many important discoveries have been made, as to the manner in which some of the operations of the animal economy are effected. To merely enumerate the various objects embraced by physiological science, to detail those alone which depend upon an inquiry into the laws of union between the mind and the body, and their mutual influence upon each other, would incur a detail too extensive for this brief memoir, and it can only therefore be remarked, that Haller regarded this science in its most extensive sense, pursued it with the utmost zeal, and gave to the world the first work deserving of the name of a system upon this subject. His experiments are all detailed with great fidelity and simplicity, and his reasonings upon them distinguish the philosopher. Before his time, little beyond speculative hypothesis had been entertained: he gave to physiology the certainty of a physical science, by connecting all the operations of the human frame with the peculiar condition of the structure of the parts upon which their functions were to be dependent. His first work was put forth under the modest title of an “*Essay*,” which, after thirty years' consideration and emendation, was published as “*Elementa Physiologiae Corporis Humani.*” The value of this work is so universally admitted, that it is unnecessary to say one word upon its merits: it will ever remain a monument of the industry, research, and genius of its author, and never be consulted by the student, or inquirer into nature, without profit and satisfaction. The numerous errors he corrected, the opinions he pro-

* Of the number were Zinn, Zimmerman, and Caldani.

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mulgated, and the discoveries he announced, involved him, as may readily be conceived, in various controversies. In all of these he conducted himself with the calmness, and dignity, and firmness becoming a great natural philosopher. He defended his opinions with distinguished ability and candour. They had chiefly been based upon experiments made on living animals, and had reference to his doctrines upon Irritability and Sensibility.

To a mind like that of Haller's, deeply impressed with the truths of religion and the doctrines of Christianity, it is reasonable to suppose that the performance of these experiments gave rise to much remorse and distress. This is apparent in various parts of his writings, where may be found constant apologies for seeming cruelty, on the ground of their benefit to mankind. Upon the subject of the performance of experiments upon living animals, much has of late been said; and from one extreme we are almost likely to run into the opposite, as in most cases.* Happily, however, for physiology, its greatest lights are to be derived from the observation of pathological phenomena, or those appearances which present themselves under disease of parts or disordered function. Science and humanity are in this instance therefore not opposed to or inconsistent with each other. Haller possessed a great faculty of order, and this in the study of botany was found to be of the most essential importance. He, however, looked upon the establishment of an order in no other light than that of an auxiliary to the attainment of real knowledge of the subject. His object was to discover the most natural mode of the arrangement of plants, and his system will therefore be found to partake of the characters of those of Linnaeus, Jussieu, and Tournefort, from all of whom he derived assistance. The system of Linnaeus was founded upon the sexual character of the plants, that of Jussieu upon the situation of parts. Haller obtained from these celebrated naturalists, and from Tournefort, various divisions, and made choice of a system founded upon the mutual relation subsisting between

* No one would more strongly reprobate the performance of unnecessary experiments upon living animals than the writer of this sketch; but when made by men whose names are a sufficient guarantee for their usefulness, (and among those who have chiefly made vivisections are Harvey, Haller, Spallanzani, Hunter, Parry, Haighton, Cooper, Bell, Brodie, Blundell, Hall, &c.) and to elucidate difficulties in Physiology, Pathology, and the operation of medicines upon the human body, they cannot but be regarded as justifiable, nay, even most laudable. Much light has been derived from experiments performed by those whose names have been referred to; and in the consequent improvement of medical science, an alleviation of human misery effected.

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the number of stamina and that of the petals; and in the monopetalous plants, between the number of stamina and the divisions of the calyx. All artificial systems must necessarily be liable to objections, and but few botanists have been found to embrace the method of Haller. His description of plants, and the faithful manner in which they have been figured, have been universally admired. No less than 2486 species of plants are described in his "*Historia Stirpium Indigenarum Helvetiæ*."

His disposition to methodize and to condense the knowledge already obtained upon various subjects of science, induced him to plan the composition of four kinds of *Bibliotheca* relating to Anatomy, Botany, Surgery, and Medicine. These display the extent of Haller's reading and the strength of his judgment; for not only do they contain extracts from the several authors whose opinions are detailed, but they give also his own estimation of the value or imperfections of them, and point out in what degree they are to be considered as fitted to be the guide of the student. As these opinions had reference both to dead and living authors, the publication rendered Haller liable to much censure and abuse. He had set up as a censor upon all that others had done; and the high opinion generally entertained of the talents of Haller, and the reputation in which they were held, may be well estimated by the boldness of this undertaking. No less than 52,000 works are noticed in the *Bibliotheca*.

Haller associated himself with a small number of persons connected with the Royal Society of Göttingen, who at an early period undertook to publish reviews of the various publications that appeared. Some of the best articles of this kind were furnished by Haller; and relate not merely to medical and botanical sciences, but extend to various branches of history and letters, and mark the erudition, judgment, and fancy of their author. He is said to have written 1,500 articles for this publication. He procured translations of several works into the German language, and wrote prefaces to such as he deemed worthy of peculiar notice. He was anxious to promote the prosperity of the University of Göttingen; and principally by his influence were established a school for surgery, an academy of sciences, a lying-in hospital, a museum of anatomy, a botanic garden, and a school for design, where the pupils were taught to delineate all the objects of natural history. He prevailed on the regency of Göttingen to build a reformed church for the Protestant professors and students of the university, and he superintended its erection. All undertakings for the advancement of science or the public good, had his zealous support and assistance; and the numerous services he had rendered the city of Göttingen, procured for him an honourable distinction from His

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Britannic Majesty, who obtained for him the rank of a Noble of the Empire from the Imperial Chancellor. This honour he, however, declined, as in his native country, Switzerland, it would have been considered a badge of vanity, and an odious distinction: he has, nevertheless, generally been designated by the title of "Baron Haller."

Upon the death of Dillenius, Haller was invited to Oxford, to succeed to the Professorship of Botany; and this offer is said to have been made, at the particular request of Dillenius, when upon his death-bed. The love of country, ever so remarkable in the Swiss, prevented him from yielding to this solicitation, as well as to others that had been urged by the King of Prussia, the States of Holland, &c.; for the estimation in which he was held by his contemporaries abroad seems to have been uncommonly great. The labours in which he had been engaged at Göttingen during seventeen years now began sensibly to affect his health, and he resolved upon returning to his native country, where his talents and character were so well appreciated as to have caused him to have been elected one of the members of the sovereign council. This honour was conferred upon him in 1745; but he left Göttingen early in 1753, in which year a place fell to him by lot, by which he acquired a voice in the election of the magistrates of Berne. Men profoundly versed in natural philosophy and the sciences, have not been very remarkable in the performance of civil duties; yet there are some situations, in which they are capable of rendering very essential service to a community; and such proved to be the case with respect to Haller, for he brought to great perfection the administration of the salt-works, and thereby considerably increased the revenue. The different establishments for education received his attention, and he devised the plan of a school for the education of the opulent citizens, to qualify them to fill the principal offices of the republic. He was the president and promoter of the Economical Society of Berne. He benefited the condition of the pastors of the Pays de Vand; and as one of the members of the Board of Health, he opposed the pretensions of ignorant empirics. His fellow-citizens engaged him in the performance of several duties, of great importance to the state, and his conduct fully justified the confidence they had reposed in him. He drew up a regular system of political economy, and published it in the form of a romance, under the title of "U-song."

In the midst of these duties he did not entirely abandon his former pursuits: physiological speculations and inquiries still continued to engage his attention: he further arranged many of his works, and contributed several papers to the transactions of public academies, composed in the

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German, Latin, Italian, French, and English languages. Botany retained all its interest in his advanced years; and he made frequent excursions into the neighbouring mountains, by which he perfected his work on the plants indigenous to Switzerland.

He was appointed perpetual President of the Academy of Göttingen; and he was earnestly solicited to accept of the Chancellorship of the University, vacant by the death of M. de Mosheim. The sovereign council of Berne, in order to retain him among them, and to continue to derive improvement from his exertions, settled upon him a pension for life; and the office of Chancellor, though made by his Britannic Majesty, was declined. He refused also the Chancellorship of the University of Halle, offered to him by the King of Prussia, and also a lucrative appointment at Petersburg. Foreign countries appear to have been alike anxious to gain his services, and to bestow upon him various honours. Gustavus III., King of Sweden, made him a Knight of the Polar Star. He was one of the eight foreigners elected into the Academy of Sciences of Paris, and he was chosen a Fellow of the Royal Society of London. A great number of other institutions enrolled him in the list of their associates. His fame was universal: no person of rank or scientific eminence visited Switzerland without paying their respects to Haller; and on one occasion he received Joseph II., Emperor of Germany.

In the midst of all this glory, the fruit of ardent study and great abilities, his frame, naturally delicate, began to decay. Attacks of gout were succeeded by an inflammatory affection of the bladder, which subjected him to pain, and rendered necessary very large doses of opium. By this means his intense sufferings were calmed, and he was not precluded the possibility of making some portion of mental exertion, for at the very close of his life he continued to enjoy the society of his friends, and was engaged in making additions and improvements to his works. A life spent in the study of nature, in promoting the advancement of science, in ameliorating the condition of mankind, and improving and refining the morals, was likely to be closed with serenity and resignation. Religious truths had made a deep impression upon the mind of Haller, and throughout life he was remarkable for his piety. He therefore looked forward to his removal from this world without anxiety or distress. His friend and physician, Rosselot, attended him at the last, and did not disguise from Haller his real situation. The patient exhibited such extraordinary fortitude under this most trying of all situations, that, feeling his pulse from time to time, he said to his friend with great composure, "the artery no longer beats," and immediately he expired. This occurred on the 12th Dec. 1777, in his 70th year. In this year died

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also Linnæus and Jussien, Voltaire and Rousseau. Science and literature have rarely lost such splendid ornaments in so short a period of time.

Haller was three times married. The death of his first wife has been already noticed. Two years after that event he married again, and lost his wife in childbed. By his third marriage he enjoyed much happiness, and had eleven children. At the time of his death were living four sons and four daughters, all of whom were established in life.* Haller presents to us the picture of what we could wish all philosophers and men of science to be: "his soul was gentle, and his heart replete with sensibility." His whole career was one of incessant application; neither sickness nor sorrow, however it might check, could stop its progress. His correspondence was most extensive—all the principal literati and distinguished men of science of his day held communications with him. He collected a most extensive library, consisting of nearly 20,000 volumes, on Anatomy, Surgery, Medicine, Botany, and Natural History. He formed also Herbaria, made Diaries, and left behind him nearly 150 MSS. all written in his own hand (a very minute character,) and the whole of these, together with the library, were purchased by the Emperor Joseph, and given to the University of Pavia.

The person of Haller is described as tall and majestic, and of a serious and expressive countenance. He had at times an open smile, always a pleasing tone of voice, usually low, and seldom elevated even when he was most excited. He was fond of unbending himself in society, and was on these occasions remarkably cheerful, polite, and attentive; he was free of pedantry, and would converse with the ladies on fashions, modes of dress, and other trifles, with as much ease as if always accustomed to intercourse with general society.

It remains only to add a list of the works of Haller, which may be thus arranged:—

1. Diss. Inaug. de Ductibus Salivalibus novis. Tubing. 1725. 4to.
2. Poem on the Alps. Lond. 1729. Also in German, (22 editions!) French, Italian, and Latin. Berne. 1795. 4to.†
3. De Musculis Diaphragmatis. Bernæ, 1733. 4to.
4. Comment. ad Herm. Boerhaave Praelect. Acad. 1739-44. 7 vols. 8vo.
5. Iter Helveticum et Iter Hercynicum, Gött. 1740. 4to.
6. Hippocratis Opera Gemina. 1740. 2 vols. 8vo.
7. Icones Anatomicae Corp. Human. Gött. 1743-56. fol

* Haller offers an instance in contradiction of the assertion of Lord Bacon, that "the best works, and of greatest merit for the public, have proceeded from the unmarried or childless men."

† Prince Radzivil, the commander of the Polish Confederates, was so delighted with this work, that he sent the author a brevet of Major-General in his army! Haller has been looked upon as the father of the new school of German poetry.

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8. *Enumeratio Method. Stirpium Helvet. Indig.* Götting. 1742. 2 tom. fol. and 1768, 3 vols. fol.
9. *Hist. Morborum, qui an. 1699, 1700, 1701 et 1702, Vratislaviæ grassati sunt.* Lausan. 1746. 4to.
10. *Prima Lineæ Physiologiæ.* 1747, 8vo. Edinb. 1767. Translations in 1754, 1778, 1785, 1801, &c.
11. *Opuscula Botanica.* Götting. 1749. 8vo.
12. *Poesies, Germ. Franc.* Zurich. 1750. 8vo. Translated into English. Lond. 1790-94.
13. *Disputationes Anatomicæ Selectæ.* Götting. 1746-51. 8 vols. 4to.
14. *Methodus Studii Medici.* Amst. 1751. This is the work of Boerhaave, but there are very considerable additions by Haller.
15. *Opuscula Anatomica de Respiratione, &c.* Gött. 1751. 8vo.
16. *Dissertation sur les parties sensibles et irritables des Animaux.* Laus. 1752. 12mo.; and Lond. 1755. 8vo.
17. *Mémoires sur la Nature sensible et irritable des parties du Corps Animal.* Laus. 1756. 4 vols. 12mo.
18. *Physiology; being a Course of Lectures upon Visceral Anatomy, &c.* Lond. 1753. 2 vols. 8vo. A Translation by Dr. S. Mihles.
19. *Opuscula Pathologica.* Laus. 1755. 8vo.
20. *Letters concerning several late Attempts of Free Thinkers, yet living, against Revelation.* (In German.) 1755.
21. *Disputat. Chirurgiæ Selectæ.* Laus. 1755-6. 5 vols. 4to.
22. *Deux Mémoires sur le Mouvement du Sang, &c.* 1756. Translated into English. Lond. 1757. 8vo.
23. *Pathological Observations.* Lond. 1756. 8vo.
24. *Disputat. Medicæ ad Morbor. Hist. et Curat.* Laus. 1757-68. 7 vols. 4to.
25. *Elementa Physiologiæ Corporis Humani.* Lausan. 1757-66. 8 vols. 4to.
26. *Deux Mémoires sur la Formation du Cœur dans le Poulet, sur l'Oeil, sur la Structure du Jaune, &c.* Lausan. 1758. 2 tom, 12mo.
27. *Medical, Chirurgical, and Anatomical Cases and Experiments, communicated to the Royal Academy of Sciences at Stockholm.* Lond. 1758. 8vo.
28. *De Variolis, Apoplexia, et Hydrope.* Laus. 1761. 12mo.
29. *Opera Anatomico-Minora.* Laus. 1762-68. 3 vols. 4to.
30. *Bibliotheca Botanica.* Lond. 1771-2. 2 tom. 4to.
31. *Usong; an Eastern Narrative.* (In German.) Lond. 1772. 2 vols. 12mo.
32. *La Génération.* Paris. 1774. 2 tom. 8vo.
33. *Bibliotheca Anatomica.* Tiguri. 1774-7. 2 tom. 4to.; and Lond. 1774-6.
31. *Bibliotheca Chirurgica.* Berne, 1774-75. 4 vols. 4to.
35. *Bibliotheca Medicinæ Practicæ.* Basil. 1776-88. 4 vols. 4to.
36. *Letters to his Daughter on the Truth of the Christian Religion.* Translated from the German. Lond. 1780. 8vo.
37. Of a Steatomatous Tumour of the Ovarium. *Phil. Trans.* 1744.—38. Of a Schirrosis of the Cerebellum. *Ib.*—39. On a Contracted Vena Cava; on a Sinus of the Aorta. *Ib.*—40. Histories of Mislaid Structure, observed in Dead Bodies. *Ib.*—41. Experiments on Respiration. *Ib.* 1750.—42. Of the Course or Passages of the Semen. *Ib.*
43. *Anatomia Cadaveris Virilis.* Gott. 2 tom. fol. 1781.





Anthony Carlisle



SIR ANTHONY CARLISLE, F.R.S.

ETC., ETC., ETC.

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS.

SIR ANTHONY CARLISLE, the present President of the Royal College of Surgeons, is a native of the county of Durham. He is a descendant of an ancient noble family; Sir James Carlisle having married Margaret Bruce, whose successors obtained a peerage, with the barony of Tortthorald. He is the third of four sons, and was born in 1768. His professional education commenced with an uncle at York: upon whose death he was transferred to Mr. Green, founder of the hospital in the city of Durham. Having here acquired general information preparatory to the more particular study of his profession, he came to London, and attended the lectures at the Hunterian school, under Mr. Cruikshank and Dr. Baillie, where his diligence and ingenuity soon attracted the attention of the celebrated John Hunter, so that a proposition was made to Mr. Carlisle to conduct the dissections, and undertake the arrangement of his museum. This, however, was not accepted, and Mr. C. became a resident pupil of Mr. Henry Watson, at that time one of the Court of Examiners, and one of the Surgeons to the Westminster Hospital. Upon the decease of this gentleman in 1793, Mr. Carlisle became his successor at the hospital. Of this institution, the oldest of the kind in this country, supported entirely by voluntary contributions, he is now the senior surgeon: and the whole of his life, as the following narrative will shew, has been devoted to the performance of the duties connected with his profession. He for many years delivered regular courses of lectures on surgery, and he continues to give clinical lectures to the pupils of the Westminster Hospital. Upon the minds of the students he has always been anxious to impress the necessity of attending to the ordinary duties of their profession, and repressing the zeal which usually animates them in search of the severer operations of

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surgery. This practice is of little service to the pupil as an operator himself, and is detrimental to him as a general practitioner, as he must unavoidably neglect those cases, which, from their frequent occurrence, are of more importance in his avocations. He has urged, with no less force than propriety, the advantages arising from the skilful application of bandages, or the neatness and precision with which ordinary phlebotomy should be practised. Of these every by-stander is capable of forming an opinion; and not unfrequently the fame and fortune of a surgeon will be found materially to rest upon such circumstances. Sir A. Carlisle is the first to have introduced the important practice of public consultations upon the propriety of operating at the Westminster Hospital: a practice which has been found to be productive of very beneficial results, and to have been since adopted at various other similar establishments. He has ever professed his anxiety to advance his profession, and the interests of humanity. With the most laudable motive, he submitted, in 1829, a plan relative to the publication of hospital reports, to be collected together from all general medical hospitals, metropolitan and provincial, and addressed to the Royal College of Surgeons, and published by them half-yearly. The plan, however, was not supported by his colleagues in the council, and fell to the ground. The separate publication of the Reports of St. Thomas's and Guy's Hospitals, and the establishment of provincial journals, have, in some measure, though imperfectly, supplied the desideratum Sir Anthony pointed out.

The importance of comparative anatomy and physiology, in an inquiry into the structure and functions of the human system, no one of the present day will for a moment question, yet few are to be found who have sufficient leisure to devote from the more active pursuits of the profession, to obtain that particular knowledge which is essential to the elucidation of general views connected with medical science. Sir Anthony is one of the earliest labourers in this field in this country: and he appears to have been animated by the spirit of Hunter, and to have recognized with ardour the glorious career of that most distinguished naturalist and physiologist. The papers he has published in the Transactions of the Royal (of which he became a Fellow in 1800,) Linnæan, and Horticultural Societies, afford evidence of the truth of this remark. In the Philosophical Transactions some communications of importance have appeared: the first is entitled, "An Account of a Peculiar Arrangement in the Arteries distributed on the Muscles of slow-moving Animals."*

* Phil. Trans. 1800 and 1801.

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In the year 1799, John Symmons, Esq., F.R.S., presented to Mr. Carlisle a maucauco for dissection. It was the species known to naturalists as the *Lemur tardigradus*, remarkable for the slowness of its movements. Its blood-vessels being injected, a very extraordinary distribution of the arteries was observed, differing very materially from the ordinary course in animals generally. The deviation was observable in the axillary and iliac arteries; the main trunks supplying the extremities. At their entrance into these parts of the animal, the trunk of the vessel did not branch out in an arborescent form, but immediately divided into a number of equal-sized cylinders, which occasionally anastomosed with each other. They were all directed to the muscles or moving organs; and our anatomist counted twenty-three of these cylinders in the fore, and seventeen in the hinder limb. This discovery was so remarkable, that Mr. C. was almost disposed to consider it as an accidental variety, and therefore did not attempt any physiological explanation of such a condition, until he should have had opportunities of observing the structure of the arteries in some other animals of similar habits. The *Bradypus tridactylus*, or great American sloth, was found to have a like distribution; and the communications between the cylinders in this animal were found to exceed in number those of the *Lemur tardigradus*. No less than forty-two separate cylinders were counted upon the superficies of the brachial fasciculus; and these did not constitute the whole of the number which existed there. The arteries of the lower limbs were less divided, and of larger diameter; thirty-four branches only were detected in the middle of the thigh. The *Bradypus didactylus* is a quicker-moving animal than the *tridactylus*, and the arteries were found to be less divided. The effect of such an arrangement of the arteries must be to retard the velocity of the circulating fluid: and this is, in the animals mentioned, in relation to the muscles of their limbs. Mr. Carlisle was not clear as to whether the slow movement of the blood sent to these muscles was a subordinate convenience to other primary causes of their slow contraction, or whether it formed of itself the immediate and principal cause. The relation of the vascular system to the operation of muscular contraction is not yet sufficiently ascertained. It is, however, obvious, as Mr. C. at once saw, that the effect of this peculiar distribution was to enable the animal to cling to the boughs of trees, &c. for a great length of time; to accommodate itself, in short, to the habits of life of the animal, which give occasion for the long-continued contraction of some of the muscles of their limbs. for these animals have been known to cling to trees for several hours without changing in any way their position. The author of this anatomical discovery has not lost sight of something analogous

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remarked in the carotid artery of the lion, known by the name of the *rete mirabile*, and described by Galen; and by which it is presumed the animal is enabled firmly to hold his prey for a great length of time without fatiguing the muscles of his jaws, to which these blood-vessels are transmitted. Examination of the arteries supplying the muscles of the jaws of the ruminating and the carnivorous animals, proved them to be arborescent, and did not therefore maintain the conjecture which had been carefully thrown out. The *rete mirabile*, and the circuitous course of the vessels going to the brain, appeared to check the velocity of the blood going to that organ. Many slow-moving muscles are found to be furnished with long cylindrical arteries; and in the heart, whose muscular motions are of exceeding rapidity, they are more quickly subdivided than those of any other part of the body. A greater collection of facts is necessary before the subject can be considered as satisfactorily accounted for.

Sir A. Carlisle has given an account of "A Monstrous Lamb."* The peculiarity relates to the formation of the head, and the absence of cerebrum.

In 1804 he wrote the "Croonian Lecture on Muscular Motion." †

The papers above noticed have shewn how the author's attention had been directed to the connexion between the conditions of the vascular and muscular systems; and this lecture is directed to a consideration of this subject, as well as the dependence on the respiratory and nervous systems. The changes which take place during the contraction or relaxation of muscles, are exceedingly difficult of solution. Many physiologists have endeavoured to account for them in various ways, but hitherto the subject may be regarded as an unsettled one in physiological science. It is, therefore, highly important to collect facts, and to institute well-arranged experiments; and Sir A. Carlisle has at least the merit of having aided in the research. His experiments to shew the properties of the irritable muscular fibre, and on the cohesive attraction of muscles, are very interesting. In a second Croonian Lecture, the arrangement and mechanical action of the muscles of fishes were particularly considered. ‡

Physiology of the Stapes. § This is an attempt to illustrate some circumstances connected with the organ of hearing, from an examination of one of the bones of the ear, in man and various animals. In man it is exceedingly minute, measuring only, according to Sir A., $\frac{6}{100}$ of an inch in height, and $\frac{5}{100}$ in breadth at the basis, and weighing only $\frac{1}{32}$ of a grain. In this paper, Sir Anthony displays the discovery of an osseous bolt, which

* Phil. Trans. 1801. † Ibid. 1804. ‡ Ibid. 1806. § Ibid. 1805.

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he calls pessulus, passing between the arch of the stapes in several animals, viz. the guinea-pig, the mole, &c.

“Account of a family having hands and feet with supernumerary fingers and toes.”* No subject is more difficult of solution than the hereditary transmission of peculiarities from parents to their offspring. All the processes connected with the generative functions are enveloped in much obscurity; and it is important to collect and accurately record all the variety of phenomena observable in the reproduction of the species. The supernumerary fingers and toes, in the case narrated by Sir Anthony Carlisle, had been traced to occur even to the fourth generation; and what is rather remarkable, both the male and female branches of the original parent were capable of transmitting the peculiarity.

In the Linnæan Transactions † are, “Observations on the Structure and Economy of those Intestinal Worms called Teniæ,” in which an ingenious attempt is made to explain the mechanism and physiology of these curious animals. Their food the author presumes to be the chyle, and their structure, therefore, peculiarly simple, inasmuch as no complication of digestive apparatus is necessary for assimilating nourishment already prepared for them.

In the Horticultural Transactions, Sir Anthony Carlisle has printed some “Preliminary Observations to the second volume of the Transactions;”‡ also an “Account of a Walnut Tree which bore fruit at an early period from seed;”§ and “On the connexion between the leaves and fruit of Vegetables.”||

The earliest production of Sir A. Carlisle’s pen appears to be the relation of a “Case of unusual formation in a part of the brain.”¶ The falci-form process of the dura mater was deficient, a very uncommon, if not unique occurrence. The brain was not divided into hemispheres as usual, but completely formed of one substance. No peculiar condition or character of intellectual power was observable in this case during life; the functions of the organ appear to have been exercised as in the ordinary conformation of that most important part of the human frame.

In the Medical and Physical Journal are seven papers:—“1. A new method of applying the tourniquet to restrain arterial hæmorrhages from the lower extremities.”** 2. “Account of the use of an instrument for

* Ibid. 1814.

† Vol. ii.

‡ For the year 1814.

§ Ibid.

Hort. Trans. 1816.

¶ Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. i.

** Vol. i p. 23.

cutting the cornea in the operation of extracting a cataract;”* this is of Parisian invention: it is open to objection, and less preferable than the mode now adopted by all expert operators. 3. “Description of the use of the Bistourie Caché for Lithotomy.”† The improvements in modern surgery, and the able employment of the knife by most operators, have superseded the use of this instrument in one of the most important of surgical operations. 4. “On the indiscriminate use of bougies armed with caustic.”‡ 5. “Observations on Simple Fractures, where the union fails.”§ The deficiency of ossific union is imputed by the author to a sluggish and inactive condition of the vascular system; and he suggests the necessity of watching the progress of inflammatory symptoms, and moderating them only when actually present, rather than anticipating their appearance; and after the thirtieth day to commence with a generous regimen. 6. “On the Radical Cure of Bubonocèle.”|| 7. “Case of Strangulated Umbilical Hernia.”¶

In the 7th volume of “Medical Facts and Observations,” Sir A. Carlisle printed some “Observations on the nature of Corns, and the means of removing them.” A large proportion of the misery we endure, as well as the happiness we enjoy in this world, is occasioned by trifles; and this observation is strikingly illustrated by the subject of this paper. Continued pressure calls forth the protecting power of nature; and thus by the formation of successive layers of cuticle, a corn is produced. The degree of pressure occasioned by this thickening, however, disturbs the formation of the true skin beneath, sinks below its proper level, forms a cone which presses upon the sensible parts, and occasions considerable pain and inconvenience. Sir Anthony recommends dissolving the corn by warm applications, followed by the caustic alkali. He recommends blistering where the corns are soft, that is, when they occur at a perspiring surface.

In the *New Medical and Physical Journal*,** Sir A. has given a “Description of the Symptoms and Treatment following the Bite of a Viper.” In the *London Medical Repository* are six papers. Four of these comprise “Observations on the Properties and Uses of Cathartics;”†† and embrace a practical and theoretical statement of the different kinds of cathartic medicines, probably the most important remedial agents in the whole *Materia Medica*, possessing various powers, and adapted to very different circumstances, though too frequently administered without due regard to their qualities, or discrimination as to their effects. The fifth paper‡‡ consists of “Remarks on the present unsettled state of opinion about the

* *Ib.* p. 332.+ *Vol.* iii. p. 193.‡ *Vol.* iii. p. 289.† *Vol.* vi. p. 291.§ *Vol.* ix. p. 396.• *Vol.* xii. p. 337.** *Vol.* i. p. 89.†† *Vol.* i. pp. 97, 185, 277, 453.‡‡ *Vol.* vii.

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Venereal Disease." After noticing a variety of appearances of a doubtful nature, as characteristic of the disease, and shewing its manifestation under different forms, the author very justly enters his protest against the modern subdivisions of surgery for the pretended special treatment of particular disorders. It is a "quackish delusion," foreseen by the great Lord Bacon, who says, "And in particular sciences, we see, that if men fall to subdivide their labours, as to be an oculist in physick, or to be perfect in some one title of the law, or the like, they may prove ready and subtle, but not deep or sufficient, no, not in that subject which they do particularly attend, because of that consent which it hath with the rest." The other paper consists of "Facts and Observations relative to the connexion between Vascular and Extra-Vascular Parts, in the structure of living organized bodies.* In this memoir the author purposely avoids going into any metaphysical disquisition as to the mystery of vitality, confessing himself wholly incompetent to reduce that power within the rules of physical science. He is satisfied with attempting to benefit physiology, by establishing accurate discriminations between the several substances of living bodies, especially as to the relative dominion of vitality or of physical causes on those substances respectively.

A series of preparations illustrative of the union between vital and extra-vital parts, as exhibited in the testaceous tribe of animals, has been deposited by the author in the Hunterian Museum, and will amply repay the student and the naturalist for any trouble in their investigation. By extra-vital, Sir A. C. means those parts of organic bodies which have no power of self-repair, which hold no continuity with the circulating fluid material destined to replenish the waste, to augment the bulk, or repair the accidents of the living fabric.

In the London Medical Gazette for March 8, 1828, there is a paper on Erysipelas. Sir A. looks upon this disease as "a humoral and constitutional inflammation, occasioned by alimentary crudities, because certain vegetable acids and acidifiable viands are often the notorious antecedents of the disease." This paper presents the results of a long and extensive practice, and contains some very judicious remarks on the subject of diet.

In Nicholson's Journal there is a paper on "Galvanic Electricity, and its Chemical Agencies."† This was published in July, 1800. Sir A. C. had obtained from Sir Joseph Banks a perusal of a part of Signor Volta's paper, describing the formation of what is now well known as the Voltaic Pile, and, with Mr. Nicholson, he proceeded to make some experiments with an instrument composed according to the direction of the Italian pro-

* Vol. iv. pp. 89, 166.

† Vol. iv. p. 179. 4to. edit.

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fessor. The pile was placed upon the gold-leaf metrometer, but no signs of electricity appeared. The action of the instrument was observed to be freely transmitted through the usual conductors of electricity, but stopped by glass and non-conductors. Very early in this course, the contacts being made sure by placing a drop of water on the upper plate, (Mr. N. remarks,) that Mr. C. observed a disengagement of gas round the touching-wire. This appeared to Mr. N. to have the smell of hydrogen whenever the wire of communication was of steel. The experiment was varied, and the circuit was broken by the substitution of a tube of water between two wires. A compound discharge being applied, so that the external ends of its wire were in contact with the two extreme plates of a pile of thirty-six half-crowns, with the correspondent pieces of zinc and pasteboard, a fine stream of minute bubbles immediately began to flow from the point of the lower wire in the tube which communicated with the silver, and the opposite point of the upper wire became tarnished, first deep orange, and then black. Experiments of this nature having continued, two-thirtieths of a cubic inch of gas was obtained, and this being mixed with an equal quantity of air, it was exploded by the application of a lighted waxed thread. Other instances of the decomposition of water are given in this paper, to which the reader is referred for much curious and interesting information. Here it is proved, that Sir A. C. was not only the first to observe the chemical effects of galvanism, but also to indicate the future applications of that agent.

“On the Discoloration of Silver by Birds’ Eggs.”* The sulphuretted hydrogen gas, to which this effect is attributable, Sir A. found could not be formed by the albumen of eggs without the addition of water.

The Philosophical Magazine contains papers “On the Breeding of Eels,”† and “A Tabular View of the State of Health of the Workmen employed by the Commissioners of Sewers in Westminster.”‡ From this statement, the men generally do not appear to have suffered from their occupation beyond the casual occurrence of accidents.

To the newspapers of the day, Sir Anthony has made several communications of interest. These are principally addressed to the Times, and embrace the subjects of the Salt Duties—the Importance of Salt to the Health of Human Beings—Military Flogging—Hygæian Quackery, &c. The following deserves to be particularly attended to: “A Letter to Lord Robert Seymour, on the Establishment of a County Pauper Lunatic Asylum.” The suggestions contained in this paper, unfortunately, have not been adopted. Until insanity is looked upon and treated as fever, or any other disease, it is

* Phil. Mag., p. 178.

† Vol. lix, Feb. 1822

‡ Ibid. 1832.

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likely we shall remain ignorant of the proper modes of treatment. Sir A. proposed that the asylum should be open, like other public hospitals, for the instruction of pupils, and the public communication of the methods of practice adopted. Every physician, surgeon, or apothecary possesses the power, by their signature, of consigning a fellow-creature to the confinement of a mad-house, yet there are no public institutions in which instruction relative to insanity is to be obtained. No one will question the importance of this subject, and no one will deny the difficulty attendant upon determining the physical as well as moral treatment necessary to be pursued in cases of mental derangement.

In the *Archæologia* are two papers: one, "A Description of Five Maces discovered on the capture of the Fort at Agra;" the other, "An Account of some Coins found in certain Tumuli in the Southern District of the Peninsula of India,"† in which paper Sir A. C. points out the methods used for raising huge stones, such as those at Stonehenge.

Sir Anthony Carlisle has made several communications to the publications of various authors. The subject of Hydrophobia has engaged his attention, and in Mr. Gillman's essay on this subject will be found a case of this horrid disease, which occurred in a little girl three and a half years old. It is exceedingly well related, and presents a case of canine madness completely uninfluenced by moral causes. In the same work is a relation of the symptoms observed in a rabid dog. In an oration delivered before the Medico-Botanical Society, are some judicious observations on the importance of attending to medical botany, and in "Enquiries into the effects of fermented liquors," some remarks on diet and regimen observed in training pugilists, or persons for athletic games, &c. Sir Anthony Carlisle has also made many valuable contributions to the illustrated catalogue of the Hunterian Museum, particularly on the subject of the comparative anatomy of the organ of Hearing. The plates were engraved at the Author's expense, and are admirably adapted to their object. They were originally intended to accompany an essay on sound, and on the organs of hearing generally, which formed part of a course of lectures delivered by Sir Anthony Carlisle, when Professor of Anatomy and Surgery to the Royal College of Surgeons, in 1818. An abstract of this essay is affixed to the illustrated catalogue, and our Author's views on the subject of sound in reference to the Stethoscope may be seen in Dr. Wolff's "Treatise on the use of Auscultation," lately published.—It remains to notice the works separately published by Sir Anthony Carlisle. These consist of:—

* Vols. xvi. & xxii.

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1. An Essay on the Disorders of Old Age, and on the Means of Prolonging Human Life." The first edition appeared in quarto, in 1817, the second in octavo, in 1818. This Essay is principally addressed to the Aged, and is chiefly intended to point out the diet most proper to the advanced period of life, as want of attention in this respect frequently abridges the duration of existence. The author inclines to the opinion, that the disorders of senility may often be relieved, and human life prolonged beyond the ordinary time, by judicious management. This is comprised in the regulation of diet, clothing, exercise, and air, rather than by the employment of drugs or pharmaceutical preparations. The commencement of old age, Sir Anthony Carlisle fixes at sixty. At this period he thinks some symptoms of disorder usually manifest themselves. These are chiefly connected with the function of digestion: hence the importance of dietetic precepts. For these, and the several modes of treatment adapted to the various disorders incidental to age, the reader is referred to the "Essay," which concludes with some observations upon a subject of great importance:—"The Moral Propriety of Surgical Operations upon Old Persons." This is a question in medical ethics deserving of the serious attention of every practitioner. Sir Anthony Carlisle justly remarks, that dangerous operations are rarely advisable in advanced age, because the living powers are then diminished, and old persons are seldom exempt from constitutional disorders.

2. In 1829, Sir Anthony Carlisle submitted a Paper to one of the Evening Meetings of the Royal College of Physicians, being an account of an "Alleged discovery of the use of the Spleen, and of the Thyroid Gland." The physiology of these organs has engaged the attention of all anatomists, and still remains in obscurity. Our author's object was to demonstrate the connexions, and the physical effects produced by these organs upon more important contiguous parts, and thus to offer an explanation of their respective offices. The quantity of blood sent to the spleen has always been remarked, and some peculiar secretion has been sought for, to explain its use; but no excretory duct has been found. Sir Charles Bell has well said, that "The spleen is privileged ground for speculation," and a history of the various opinions that have been entertained, would be more amusing than useful. The spleen has been compared to a sand-bath, fitted to foment the stomach, and promote the digestion. It has been regarded as the organ to secrete an acid juice, and so excite an appetite—it has been looked upon as the seat of the soul!—the cause of venereal desire—the receptacle of a ferment—the seat of luxury—the abode of joy, or indolence, or sleep, the seat of melancholy,

"that moping here doth Hypochondria sit,"

or. "Laughter holding both his sides."

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And Sir Charles Bell tells us we have authority for the excision of the spleen from those who are otherwise incurable in their propensity to laughter. Hewson imagined that the spleen added the flat vesicle of the globules of the blood; and another opinion has been, that it counterbalanced the mass of the liver seated to the right side of the abdomen. It has been considered as preparing the blood for the secretion of the bile; but Doctor Saunders made some experiments which appear to shew that the bile in animals from whom the spleen has been removed, is not different from those in whom it remained; and that the liver, in the exercise of its function, is perfectly independent of that viscus. Dr. Haighton's experiments confirm these views. Some physiologists have modestly asserted that the spleen was of no use at all, and they have founded their opinion upon the absence of any ill effects following its extirpation in animals. It has been removed from man himself. At the battle of Dettingen a soldier had his side pierced by a bayonet; he lay during the night on the ground, and when discovered by the surgeon in the morning, the spleen was found hanging out of the abdomen. It was so much enlarged, that the surgeon thought proper not to return it, but removed it, and no inconvenience was afterwards experienced in the animal functions. The majority of physiologists favour the opinion of its being an organ subservient to the stomach. Sir C. Bell looks upon it as a provision for giving the vessels of the stomach an occasional power and greater activity, enabling them to pour out a quantity of fluid proportioned to the necessity of the digestion. Dr. Rush regarded the spleen as an organ of defence against the effects of sudden accident upon the important viscera of the abdomen. Sir A. Carlisle's opinions accord most with those of Dr. Stukeley as to the physiological influence of the organ; but they differ as to the parts upon which that influence is bestowed, and the effects produced. The temperature of animal bodies is regulated by the proportion of red blood circulating through them. An unequal dispensation of animal heat. Sir A. remarks, exposes many parts to a passive reduction of temperature: the effects of which are, a diminution of sensibility, and an abatement of muscular power. By the introduction of cold drinks and food, the stomach appears to be peculiarly subjected to change of temperature; and our author views the spleen as the organ for compensating heat, and the natural provision against the torporizing influence of low temperature suddenly applied to the nervous and muscular structures of the stomach. He has pointed out the constant alliance between temperature and the sensorial functions and muscular motions, and called to his aid many ingenious illustrations derived from his extended knowledge of comparative anatomy. The thyroid gland

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is similar in its structure to the spleen: and its office he regards as of a similar character. He considers that "the local adaptations of the thyroid gland to the trachea and larynx, must necessarily furnish heat to the nerves and muscles of the organ of voice, whose bloodless cartilages are exposed, both within and without, to the effects of atmospheric changes."

3. In 1826, Sir A. Carlisle addressed a "Letter to Sir Gilbert Blane on the employment of Blisters, Rubifacients, and Escharotics," and recommended an instrument called "the Blisterer," adapted to transmit a defined degree of heat to effect these several purposes.

Sir A. Carlisle has delivered two "Hunterian Orations;" the first in 1820, the second in 1826. The former is dedicated to George IV., to whom Sir Anthony was Surgeon Extraordinary. In this he sagaciously predicts that which is now being rapidly fulfilled, and will be best expressed in his own words:—"The constitution of organized bodies is yet imperfectly understood; but, if we patiently wait until the inward history of living creatures is more extensively shown, and until chymistry has developed the essentials of their composition, we or our followers must be rewarded by more satisfactory views;" and in allusion to the Hunterian museum, to which so many additions have been since made, he remarks, "It may be the destiny of this college to execute the glorious scheme of Aristotle: to draw together the creatures of the earth: to unravel their natures, and to display with perspicuity their several applications for the services of all sensitive beings." Few members of the College are better, if so well adapted to display the importance of a knowledge of natural history in connexion with anatomical and physiological science. Sir Anthony from his earliest days has been a devoted enthusiast in the examination of the treasures of nature in all her kingdoms, and an active seeker into the mystery of her operations. He is, therefore, well calculated to do justice to the merits and views of John Hunter. His knowledge of the complex phenomena of living bodies, and the difficulty of tracing the causes which regulate them, led him to insist upon the necessity of making examination into the diversity of textures observable throughout the animal kingdom, and carefully distinguishing the supposed connecting links by which they are severally bound together. "In some animals (he observes) the parts ordained to perform definite offices, are simple, distinct, and homogeneous; in others, they occur intermixed with adventitious, auxiliary, or subordinate structures; so that nothing short of a copious and particular knowledge of these facts can warrant any physiological theory. The whole of these contemplations invariably lead to conclusive proofs of the strict adaptation between animal structures and their functions; and while the

SIR ANTHONY CARLISLE, F.R.S.

wisdom of this moral governance, and the supreme order of Providence command our adoration, we may be permitted to advance our researches and cogitations respecting those natural events, which comprehend the most important information for the improvement of surgery." The second Hunterian oration relates to the connexion between vascular and extravascular parts.

From the preceding statement, it will be evident that Sir A. C. has for many years been ardently and usefully engaged in professional researches. He has for many years been one of the Council of the Royal College of Surgeons, one of the Board of Examiners, and one of the Curators of the Hunterian Museum. He has been one of its Professors of Anatomy and Surgery, and in 1829 he filled the office of President. He occupies the same distinguished position at the present time. He has for many years been one of the Surgeons of the Westminster Hospital, and was Surgeon Extraordinary to his late Majesty George IV., from whom he received the honour of knighthood at the first levee of that monarch, he being recommended for that honour by the privy council, on the ground of his professional merits. He was also appointed surgeon to the late Duke of Gloucester, at a personal interview, to which he was introduced by the learned Dr. Samuel Parr.

He has enjoyed an extensive practice, and his experience has enabled him to make many improvements: one, not the least in importance, has been in the alteration of some of the instruments used in surgical operations, and it should be known, that to Sir Anthony's ingenuity and application we are indebted for the introduction of the present excellent amputating instruments. He first substituted the thin-bladed, straight-edged amputating knife, approaching, in its kind, to the ordinary carving knife, for the clumsy crooked knife of former days: and also was the first to employ the carpenter's saw, simple in its construction compared with that formerly employed. He was the first to use the Bistourie Caché in this country, and he has, by the aid of Mr. Stodart, introduced various improvements in surgical apparatus. The ingenuity of Sir Anthony in early days enabled him to accomplish what Mr. Hunter considered to be a desideratum in anatomical research. He succeeded in making the first perfect cast of the labyrinth of the ear, and had the gratification of presenting the model to that celebrated man, who was highly delighted with the acquisition.

But Sir Anthony's labours have not been confined to the application of anatomical science to the relief of the diseases and disorders of mankind: he has considered it in relation to the arts of design, and the display of taste by painters and sculptors. In 1808, upon the death of Mr. Sheldon, Sir Anthony succeeded him as Professor of Anatomy to the Royal Academy.

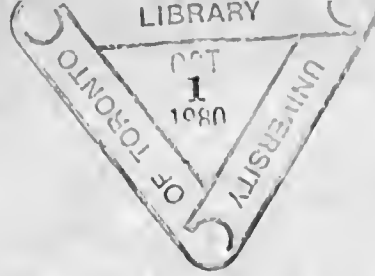
SIR ANTHONY CARLISLE, F.R.S.

The first professor was Dr. William Hunter, who was succeeded by Mr. Sheldon. Sir Anthony was, therefore, the third anatomical professor of this institution. He held the appointment for sixteen years, varying the courses every year, but devoting the first two lectures to an especial exposition of the connexion between anatomy and the fine arts, embracing a philosophical view of the passing state of anatomical knowledge. Upon his retirement he carried with him the good wishes and sincere thanks of all the members of the Academy, who, to testify the sense they entertained of his distinguished services, presented to him a handsome salver, with the following inscription: viz. "Presented to Sir Anthony Carlisle, Kt. with the unanimous thanks of the President and Members of the Royal Academy of Arts, for the zeal, attention, and ability with which, during sixteen years, he fulfilled the duties of Professor of Anatomy to that institution, and as a Testimony of their respect and esteem. London, 1825."

Sir Anthony had been admitted a student at the Royal Academy upon the recommendation of Sir Joshua Reynolds, given in consequence of a conversation which took place at the celebrated painter's one evening, between Sir Joshua, Mr. Hunter, Mr. Burke, and Mr. Carlisle. By this, he became the fellow-student of Hoppner, Westall, and other justly celebrated artists. In the periodical called "The Artist," Sir Anthony printed an "Essay on the Connexion between Anatomy and the Fine Arts," the object of which is to show that minute details of human structure are not necessary in historical painting and sculpture. The dissection of human bodies was not permitted at the period when the Greek schools enjoyed their greatest popularity, and had reached their highest excellence. When the fine arts flourished most, anatomy was not cultivated by artists as a particular object of study. Sir Anthony regards anatomy as principally useful to the artist by fixing his attention upon the most difficult of all the forms in nature—those of the human body. "Anatomy (he says) is subservient to precision and truth in design; it may secretly give correctness to drawing, but, if urged further, it will create disgust."

It is to be regretted that neither the lectures delivered at the Royal Academy or the Royal College of Surgeons, have been published. To the merits of the latter, many have borne their testimony, particularly his learned and eloquent colleague, William Lawrence, Esq., in his lectures on Physiology, Zoology, and the Natural History of Man, (pp. 40—678.)

The Portrait prefixed to this Memoir was painted by Sir M. A. Shee, P.R.A., at the time Sir Anthony was Professor of Anatomy at the Royal Academy.



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