

**Introductory address to the Anatomical Society of the University of Liverpool, delivered January 15th, 1904 / by William Mitchell Banks.**

**Contributors**

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London NW1 2BE UK  
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INTRODUCTORY ADDRESS TO  
THE ANATOMICAL SOCIETY OF (18)  
THE UNIVERSITY OF LIVERPOOL

BY

SIR WILLIAM MITCHELL BANKS, K.T.

M.D, F.R.C.S., LL.D., ETC.





# INTRODUCTORY ADDRESS

TO THE

ANATOMICAL SOCIETY

OF THE

UNIVERSITY OF LIVERPOOL

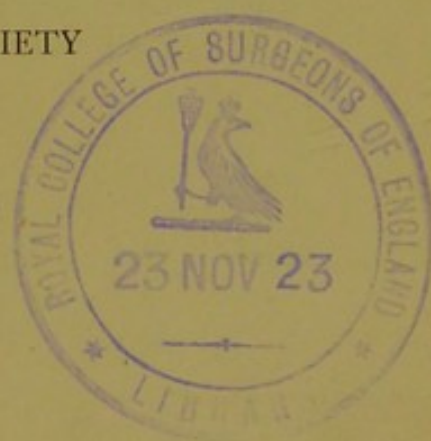
DELIVERED JANUARY 15TH, 1904

BY

SIR WILLIAM MITCHELL BANKS

KT., M.D., F.R.C.S., LL.D., ETC.

FIRST PRESIDENT OF THE SOCIETY



LIVERPOOL

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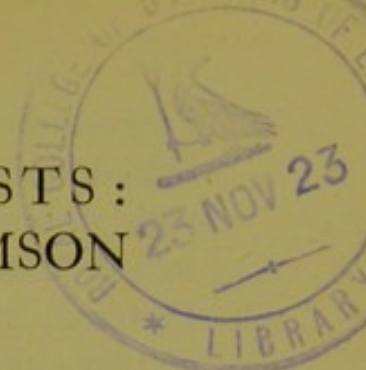
The Anatomical Society had on the delivery of the following lecture resolved to publish it. The untimely death of the President prevented any revisal of the manuscript, which is now printed practically in the identical form in which the address was given.

Sir William Banks died suddenly at Burtschied, Aix-la-Chapelle, on August 9th, 1904. At the time of his death he was Emeritus-Professor of Anatomy in the University of Liverpool and Consulting Surgeon to the Liverpool Royal Infirmary. He was born in Edinburgh in 1842, and received his medical education in that city, graduating M.D. in 1864. He came to Liverpool as Assistant to Mr. E. R. Bickersteth in the year 1868, after having passed through the experiences of which his lecture treats.





## TWO FAMOUS ANATOMISTS: GOODSIR AND ALLEN THOMSON



GENTLEMEN,

In making me the first President of the Liverpool University Anatomical Society you have done me an honour; and an honour of the kind which has greatly pleased me, because it is a recognition of the fact that somehow, or at some time, I must have had something to do with the science of Anatomy. Were this an ordinary meeting, it would have been necessary for this to have been an anatomical paper. But this is an Introductory Address, a fact which leaves me at liberty to address you *de omnibus rebus et quibusdam aliis*. Now, I have served in my youth in two great anatomical schools under two great teachers of Anatomy, and I thought you might like some recollections of how this science was taught when I was a student, and what manner of men my two great masters were.

It was a dull winter's afternoon when I took my seat for the first time in the steep, old semi-circular Anatomy theatre in the University of Edinburgh. The well at the bottom was small, and in the middle of it was a little round, marble-topped table, with a white cloth on it, covering something. In the right-hand corner of the well was a fixed triangular bench-seat. Presently, a green baize door at the back of the well opened, and a great tall man entered with curious flopping steps and his eyes bent on his feet. He was supported behind by another tall man with a white beard and a black velvet skull cap. He had a pointer in his right hand. Advancing to the table, he laid hold of its edge with his left hand and steadied himself with its help and that of the pointer, spreading his legs well out to get a good basis of support. Then he took off the cloth and displayed a collection of beautifully-prepared bones. He surveyed them for a moment, and then drew himself up to his full height, and, taking a sweeping glance round the audience with his enormous eyebrows uplifted, he said "Gentlemen"—and there was silence. This was the famous John Goodsir, whom his students all called Johnny, because they were fond of him. Meantime, a



demonstrator—it was Joseph Bell during most of my time—seated himself on the little three-cornered seat, which Goodsir, with a merry twinkle illuminating his big, sad grey eyes, used to call the *Triangularis Sterni*. He was there to help the Professor in case he should fall, for poor Goodsir was then getting rather bad with the spinal trouble which carried him off some seven or eight years afterwards. At one lecture he did fall. He turned half round to point to a diagram, and doubtless ceased to possess the guiding power of his sight over his lower limbs, for he went down with a crash, and the table and the bones fell on him. In an instant willing hands put him on his feet again, and replaced his specimens. For a minute or two distress was apparent on every face, until we saw our beloved master once more, though pale, recovered from the shock. He carefully examined the osseous preparations, then he looked up, and with a smile of satisfaction he cried, "Gentlemen," there's not a bone broken!" It was irresistible. We rose to our feet and gave him cheer after cheer, for we knew that while we were thinking of his personal bones, the fate of his museum bones alone had occupied him. It was the triumph of mind over matter that pleased us.

Goodsir was then 45. What was he like? Imagine a great, square-shouldered, big-boned man, 6 feet 3 inches high, clad in a dark tweed suit. The coat, by the way, was an open jacket coat, and the waistcoat buttoned right up to the neck, so that there was practically no white visible about him. He was a hairy man, and his beard and moustache and whiskers seemed to have invaded his face to such an extent that his nose and part of his cheeks were alone visible. When he was a younger man he used to shave clean, but towards the end of his life shaving became too great a tax. His nose was right big—notable not for its shape, but for its size. All the Goodsirs had big noses. His colour was pale, almost leaden, and his large grey eyes looked out from beneath big, bushy eyebrows. He had a full strong head of hair, getting iron grey. Your first impression of him was that of an ugly man, and without doubt he was an ugly man. But there are some men whose very ugliness constitutes a kind of beauty, and, such as it is, it is always of a most fascinating kind. Mirabeau and Wilkes are often cited as examples. It depends on the eye and the mouth.



When Goodsir emerged from his accustomed silence and phlegm and became animated, as when in the course of a lecture he felt himself in harmony with his subject and his audience, his eyes lighted up and his whole countenance seemed to shine. And, again, when a smile wreathed his mouth, his face became tenderness itself, for at the bottom of his queer, somewhat melancholic character he had a very tender heart.

He was born in 1814, in the little old Royal Burgh of Anstruther, in Fife, by the shores of the Firth of Forth, where his father and his grandfather had practised as medical men, and he got his general education at the Burgh school of his native town, and at the University of St. Andrews not far off. He shewed, even as quite a youth, no small liking for plants and animals, read Buffon and Goldsmith, watched the growth of tadpoles, and in various ways exhibited from an early age that intelligence, constancy and methodical study that characterized him in after years. The sea and its beach, the rocky coast, the neighbouring quarries and the green hedgerows were there to satisfy his longings in zoology and geology and botany. Nor was he the only member of his family who loved science. He had three brothers doctors. Harry, an anatomist and naturalist of the highest promise, who would have made a great name had he been spared, went with Sir John Franklin as his naturalist in the expedition to the Polar Seas of 1845, and perished with his gallant leader. Robert sailed twice to the Arctic regions with Captain Penny in Lady Franklin's ship in search of his brother Harry. Him I knew, and once went with him on a charming trip to Russia, which was shared by Professor Young, of Manchester, and Professors John Chiene and John Wylie, of Edinburgh. You may depend on it, there was no lack of fun in that company. Archibald Goodsir, the youngest brother, who had studied medicine with great success, died young, a victim to his zeal in anatomical pursuits.

John Goodsir was apprenticed to a celebrated Edinburgh dentist, Mr. Nasmyth, but he only worked with him for two years. He wrote home that he could not stand the "smiths' "forges, brass furnaces and sand grinding-stones." An odd incident is that, in Mr. Nasmyth's absence, he once pulled a tooth for Dan O'Connell, the famous Irish agitator, who cracked a joke about his lost wisdom tooth and the "repeal" of their



union. But his work with Mr. Nasmyth was of great service to him in giving him manual dexterity, so that when he was working as a student at practical anatomy he made plaster-of-Paris casts of his dissections, to the surprise of his fellows, who had never heard of such a proceeding. And he took casts of ulcers and other lesions from the patients in the Royal Infirmary, and painted them with coloured, burnt wax, the old encaustic method of the ancients. In putting up preparations, in articulating skeletons, and in every mode by which individual specimens of animals could be preserved or morbid growths illustrated he shewed surpassing care and neatness. He studied his anatomy under that remarkable man Robert Knox, whose class in the session 1829-30 numbered no fewer than 504 students. His demonstrators were William Fergusson (afterwards Sir William Fergusson, Serjeant-Surgeon to the Queen) and John Reid (subsequently famous as the Professor of Anatomy and Medicine in St. Andrews University).

While a student he "foregathered" with a certain young Manxman of Scotch descent, Edward Forbes, whose work ere long placed him in the very first rank of the scientific men of his day. They were tall, lithe, powerful men, characteristically visaged, so that they were conspicuous both physically and intellectually among their fellow students. They became bosom friends, and death only closed a union of the type of David and Jonathan.

One day Forbes persuaded Goodsir to go to the Royal Physical Society, as a paper was to be read on the Chameleon. The theory as to the action of the tongue of the chameleon, as propounded by the writer of the paper, Forbes knew, from dissections that Goodsir had made, was incorrect. So he got up, and without asking Goodsir's permission, which he knew the latter's extreme diffidence would have made him refuse, called upon him as a stranger to give the Society the benefit of *his* views. So Goodsir was obliged to rise, and he satisfied the audience and the writer of the paper not only that his views were the correct ones, but that he had a thorough knowledge of the chameleon. Shortly afterwards, Forbes and Reid and John Hughes Bennett (afterwards Professor of Physiology and the father of the teaching of genuine clinical medicine in this country) induced him to read an account of the Snail before



the Anatomical and Physical Society. The paper was so novel and elaborate, and so well illustrated, that it surprised and delighted the audience. And so he was fairly launched as a lecturer.

In 1835, Goodsir became a Licentiate of the Royal College of Surgeons, and went home to Anstruther to help his father in his general practice. But he could not sever himself from Anatomy, so he carried with him to Anstruther, by coach and steamboat, an entire human subject for dissection, which was a very hazardous proceeding. He was an excellent practitioner, and had quite a good reputation as such; but his heart was in science, and with scalpel and microscope he kept working away at the Invertebrata of the Firth of Forth. Moreover, he was quietly engaged upon a remarkable piece of work, viz., an enquiry "On the origin and development of the pulps and sacs of the human teeth." He was persuaded to read it at the meeting of the British Association in 1838, and there it procured for him the greatest applause, and secured for him thenceforth a high place as an investigator. This essay is a very remarkable piece of work, and highly characteristic of the man. Of course, it is not to be supposed that the development of the teeth had escaped all notice before the time of Goodsir. Hunter, Cuvier, Purkinje, Müller, Retzius, Bell, Blake, Owen, Nasmyth and others had all worked at the teeth, but had only lightly touched on their embryonic conditions, and Goodsir it was who laid down the whole scheme. In the 1891 edition of Quain's Anatomy, Messrs. Schäfer and Symington, who edited Part 3, Vol. 3, say:—"The first complete account of the development of the teeth was given by Goodsir (Ed., Med. and Surg. Journal, 1838), who described the formation of a groove in the mucous membrane of the jaw, the formation of special depressions in this groove corresponding to the milk teeth, the appearance of papillæ within these, the enclosure of the papillæ within follicles covered by membrane, and finally the time and mode of eruption of the several teeth." Goodsir pointed out that the milk and permanent teeth did not stand to each other in the light of progeny and parent, but in the light of twin brothers, one of which destined for early action develops rapidly, while the other grows slowly until the time comes for it to take its dead brother's place.



Next year, in 1839, he read a paper to the British Association "On the follicular stage of dentition in the "ruminants, with some remarks on the process in the other "orders of mammalia." He there announced the fact that at an early period of embryonic life the cow and sheep possess the germs of canine and superior incisor teeth, the former existing as developed organs in two or three genera only of ruminants, the latter being found in the aberrant family of camels.

It seems extraordinary that a plain country doctor should be doing work of this kind, but, as it happened, St. Andrews had not only its University with a Literary and Philosophical Society, but the county town of Cupar had its Literary and Philosophical Society also. Sir David Brewster was President of the St. Andrews Society, and that at once stamps the kind of society it was. Goodsir and Edward Forbes, anatomists and naturalists, were members of both. Other members of the scientific section were David Page (afterwards President of the Geological Society), Playfair, Adamson, Buist, and others of like mind, so that what is called jocularly the little Kingdom of Fife was well to the front in all that pertained to literature and science. Just imagine Goodsir reading this paper to the St. Andrews Society "On the cephalic termination of the "sympathetic nerve." He used to delight to get on to this subject in a lecture, and I have often heard him become quite animated over it. He was a profound believer in the vertebrate theory of the skull, and made a most ingenious effort to arrange the upper parts of the sympathetic nerves in accord with this theory. The linear series of sympathetic ganglia running alongside the vertebral column he called *centric*, and those scattered throughout the viscera *eccentric*. That the sympathetic in the trunk was in harmony with what was then termed the cyclo-vertebral elements of the spinal column and intestinal canal seemed apparent. It was when he came to the skull and the cephalic extremity of the intestinal tube that the difficulty began. He traced the basilar portion of the occipital bone, the body of the sphenoid, the vomer and the intermaxillary bones as part of the cyclo-vertebral system in the cranium, while in close connection with these lay the cranial portion of the alimentary canal. Admitting that the sympathetic cords united below in the ganglion impar on the coccyx, he held



that they united above in an azygos ganglion termed the nasopalatine ganglion. I think it is believed that the sympathetic cords most probably join by the branches which leave the cavernous plexuses for the pituitary body. Anyhow, his next argument went to shew that the otic, ophthalmic and sub-maxillary ganglia should be ranked with the cardiac and semi-lunar in the *eccentric* series.

In 1841, to his immense delight, he was appointed Conservator of the Museum of the Royal College of Surgeons, Edinburgh, at the princely salary of £120 a year, and so he bade adieu to St. Andrews and private practice. We need not follow his career minutely, merely noting the fact that he soon became demonstrator to the third Monro, a lazy, incompetent old person, and that on his retirement he became Professor in 1846. Now you will see that in these five years, from the time when he left Anstruther a poor general practitioner to the time when he was seated on the greatest anatomical chair in Great Britain, he must have done an immense amount of scientific work to have justified his position. And so he did. The number and value of the zoological papers was very great. They have all become merged into the vast temple of biological knowledge, of which they formed important stones, but after his death the most important of his anatomical works were collected and published by Professor (now Principal Sir William) Turner. I have just been looking them over. I daresay they are out-of-date, but this I know that the most up-to-date biologist would do well to read them with care, and see what a combination of original thought and patient research there is in them. Above everything, there is no padding—no attempt to cover over an inherent lack of genius by innumerable citations of the works of others.

Turning for a while from Goodsir's scientific work, it is worth while glancing at the way he lived during the five years just mentioned. By the side of the University ran a rather narrow street named Lothian Street—I don't know if it is there now. It was a row of tall houses of four or five stories. The ground floor on the street was shops with openings of common stairs between them that led up to about half-a-dozen flats, which were almost entirely tenanted by people who kept rather cheap lodgings for students. In the topmost of one of these flats



lived Goodsir and Forbes and Dr. Day, a man of their own kidney, also one or both of the Goodsir brothers from Anstruther. They were all big men, and how they could have packed themselves away in this little garret is difficult to imagine. A great "crony" of this company was Dr. Henry Lonsdale, of Carlisle, who once lectured on Anatomy himself. He wrote an intensely-interesting history of the great anatomist Knox, and of the condition of biological science in his time, and he has left a memoir of his friend Goodsir, of which parts are very good. There is a most charming chapter of how this remarkable company lived. Their rent was £17 a year, and they kept an old housekeeper cook, also two lads, who acted as museum assistants in the day and were general factotums in the flat in the evening. Remember their incomes, when averaged, perhaps did not amount to more than £100 apiece. Lonsdale says "Man was not the sole occupant; other livings things—" biped, quadruped, manuped and multiped—had their share in "the fortunes of the household. 'Jacko' the monkey, 'Coco' " the tortoise, 'Cæsar' the dog, 'Doodle' the cat, and occasional "guinea pigs had their freedom of run in the establishment. "The birds were caged, and a great golden eagle from the "Orkneys stood Prometheus-like on his Caucasus; whilst shut "up in the attics or claiming part of the cook's precincts, and in "improvised *aquaria* or *vivaria*, were frogs, fishes, molluscs, "echinoderms, and various odds and ends of Invertebrata. "These animals were nearly all meant for physiological "observations, and occasionally furnished the anatomists with a "blood-globule, a muscular fibre or a ciliated epithelium. As "the ranks of this living motley fell away—for amidst such a "marine, aerial and land population, life flowed and ebbed and "oft departed—the organisms on ceasing their physiological "functions, obtained the obsequies of the scalpel, the injecting "syringe, the spirit jar or the macerating tub; and, as "mementoes of once familiar faces, skins and crania for "conservation might be seen hanging like banners on the "outward wall or attic's roof. This semi-menagerie and its "mortuary relics conveyed to more senses than one decided "anatomical impressions. Along with household furniture—"boxes, big tomes, portfolios, fossils, geological and archæo-logical specimens were strewed about the rooms. The finer



"sorts of things occupied shelves, and these again were  
"variously set off by dried starfishes, shells, trophies of the  
"chase, meerschaums, and the artistic or grotesque fancies of  
"Forbes. As indiscriminate as the Paris *chiffoniers*, the  
"Goodsir fraternity hoarded up organic forms and their special  
"idols till they realized what appeared to a bystander to be a  
"chaos of natural history and domesticity only to be surpassed  
"by the oddest curiosity shop in the Cowgate of the ancient  
"city. With the owners, however, there was method in the  
"midst of strange confusion, besides much pleasantry in the  
"concert and a kind of æsthetic halo that crowned all the dust  
"and cobwebs of their domicile."

I have mentioned that I knew Robert Goodsir. I also once saw Dr. Day, who afterwards became Professor of Anatomy and Medicine at St. Andrews. In those days there were no duties attached to the chair, inasmuch as there were no medical students at that University. One day, about five and twenty years after this time, I went on one of the class botanical excursions with Professor Balfour—the famous "old Woody Fibre"—to St. Andrews. We were all straggling along the beach when we were joined by Professor Day, who had heard we were coming. As prosector to Goodsir, I was a person of consequence as a student, and Balfour called me up and honoured me by an introduction to my master's old friend. I laughed to hear the two old boys—companions in the old Lothian Street days—chaffing each other. Day picked up a battered dog's skull, bleached by the waves, and began looking at it. Balfour said to him, after his peculiar manner of speech, "Ay! ay! ay! 'Cippital, 'cippital bone, 'cippital bone. Ay! "ay! ay! You used to have very funny notions in our young "days about the development of the 'cippital bone." Day replied with much gravity "Balfour, in those days your occipital "bone was not sufficiently developed to understand my "theories." Goodsir used often to sit down beside me while I was dissecting for him, and frequently let out fragments of his early days. One day the company in Lothian Street had invited a guest or two to dinner. Just before the hour, Goodsir thought he would look into the kitchen to see what the old housekeeper was about. "To my horror," he said, "there I found Jacko the "monkey sitting in the potato-pot enveloped in steam."



Edward Forbes, when acting as naturalist on board of H.M.S. "Beacon," in the Mediterranean, wrote from the coast of Asia Minor, "I often heartily wish myself sitting over a tumbler "of toddy, munching a Finnan haddie in our palace in Lothian "Street."

Goodsir became Professor in 1846, and died at the age of 53 in 1867, thus holding the chair for 21 years. During all that time his labour never abated; on the contrary his excessive devotion to work, in spite of the protests of his friends, eventually brought on spinal disease, which maimed him for many years and finally finished him. He lived during the latter years of his life a short way out of Edinburgh. I was once in his room. It was a big apartment, and all round were tables with specimens and books and microscopes of all kinds. I noticed a big sofa with fur rugs on it. Here, when he got tired of working, he lay down and slept, and woke to work again. Food and rest were regarded by him as unfortunate, but necessary interruptions to work. His work in re-organising the anatomical department, which had fallen to ruin during the time of Monro Tertius, extended over nearly five years. In my day, there were 354 students working at Anatomy. His views on joints were most remarkable, confirming and extending, as they did, the work of the famous brothers Weber. He was greatly interested in the Malapterurus; the Cell theory; the Dignity of the Human Body; the Erect Position in Man; the Comparative Anatomy of the Upper Limb; Sense and Speech in Man; the Position of Man in the Scale of Being; the Progress of Anatomy; the Skeleton of the Vertebrate Head; Centres of Nutrition; Ulceration of Bowel, etc., etc.

I can remember perfectly my first glance into the old dissecting room of the University. It was at the top of a very long stone stair, and for some time before you came to it you were conscious of a very nauseating odour. It was a common staircase for the whole anatomical department, which was at that time situated in the far right corner of the great University buildings. That whole corner smelt of the dead and of methylated spirit mixed with faint traces of tobacco. The rooms—for they were three in number, opening into each other—were very low, but, being under the roof, the top light was excellent. The first room was a bone room. All round its walls



at the level of the eye were bones painted to shew the attachments of the muscles, and placed in revolving glass cases. These cases were invented by Goodsir, and were the only ones then extant. When I began to teach here, I at once introduced this form of displaying the bones, and got the revolving cases made here by a man who lived close to the Sailors' Home and who made ships' compasses. The bones I cleaned and whitened myself. I always had a bone and some paints behind the window curtains in my consulting room, and in the intervals between seeing patients—and at that time the intervals were longer than I liked—I used to bring out a bone and get some muscular attachments on to it.

As for the two dissecting rooms, they were very foul places. Lath and plaster ceilings, whitewashed walls, wooden floors and wooden tables saturated with nameless abominations, which no amount of soap and water would wash out, made them very disagreeable places to work in. The wash-basins were miserable things. There was a small room where men hung their coats, but it would be difficult to say how many coats and aprons and sleeves were on each hook. On the floor round the walls were rows of pots, which for the most part contained foetuses. One only aspired to the distinction of having a foetus in a pot towards the close of one's anatomical career, because this very fact conveyed to the mind of the first year's man the impression that the owner was a man of gigantic intellect. When the student had got through his Anatomy examination he left his farrago of evil-smelling garments behind him, also his potted foetus. The latter became converted into a kind of jam at the bottom of the pot with green mould on the top of it. But during the three years I was in the anatomical department none of these relics were ever touched.

Nobody but one like myself, who has spent many hours in transforming an apology for an anatomical department into a real working and useful place, can have any idea of the improvements in comfort, cleanliness and utility which late years have procured. But, if you think that because the rooms and appliances were poor the teaching and learning of Anatomy were poor also, you would be greatly mistaken. I can assure you that the students of that time at the end of their third year had an infinitely more exact and more enduring knowledge of



their Anatomy than those of the present day. The reason is apparent. They had more time to learn it in. At present he has to be stuffed at such a pace that he becomes a mental dyspeptic, and passes his mental food undigested. It does not become assimilated into his mind, and so strengthen his medical constitution. On the side of the teacher, again, it has become the fashion to scout lecturing, while there is a very advanced set who regard teaching altogether as a feeble pursuit. But in my time, to be a great teacher was the highest distinction to which a man could attain, and the recollection of the teachers who taught me and my fellow students still amounts to a worship with us. Their lectures were prepared with the greatest care, and the language of them was so good that I have seen the audience burst into applause at the end of an exceptionally good one. Many a time I have felt a subject, which seemed in my brain to be so much tangled, coloured and clear up before my mental vision as the lecture went on, and at the end hang up like a tartan plaid with every stripe and chequer clear and distinct. But that can only be done by a man with the genius of a teacher in him.

So soon as I had recovered from a slight feeling of horror on entering the dissecting room for the first time—for up till that minute I had never seen a dead body before—I was aware of the presence of three persons clad in blue serge jackets and black skull caps. I remember thinking they all looked very pale, and wondering if that was the effect the study of Anatomy had upon its devotees. I soon found that, if you entered upon the matter with sufficient energy, that was precisely the effect it did have. These three were the demonstrators, and with the two seniors I have kept up an unbroken friendship for forty-four years. Cleland, now Professor of Anatomy in Glasgow, I see but rarely, but with the oldest of the three, who is now Principal Sir William Turner, I have been in constant communication, both professionally and socially. Cleland was a tall, loose-jointed man. He used to loll about and chaff us youngsters, and it did enter our minds that coming to sit down beside us and coach us up on our parts distinctly bored him. But we could see, with the eye which the medical student alone has for looking all over and into his master, that he had genius. I have always had a great opinion of his originality. I don't mean the sort



of stuff that too frequently passes for originality now-a-days, and which gets you into the Royal Society, if you know the proper persons. Cleland's work contained novelty. I think him the finest human anatomist that the last half century has produced in this country. If you want to test what I say, turn to a paper published by him many years ago on "The Action of Muscles passing over more than One Joint." It is a type of what, to my mind, an anatomical paper should be—short, clear, with something new in it, and devoid of all German padding.

Turner must have been then about eight and twenty, but he is the same Turner now. Between twenty-eight and seventy men often become so changed that you cannot recognize the young one in the old. But, if you were to put Turner as I saw him in 1859 beside Turner as I saw him a few months ago, you would be astonished at how little change has taken place in him. The yellow hair has got white and straggly, and the trunk has filled up and there is a little stoop, but the eye, that window of the soul, shews no abatement of its natural fire. Sure, I am, that our hope is that it may not do so for many a year yet. A sudden thought seizes me to tell a little story. When I was put into the General Medical Council I was 45, and was a mere chicken in the eyes of the seigneurs of that august body. One day four of us were sitting chatting in the lunch room. Now it happened that Turner, after he came to Edinburgh, had attended some lectures by Mathew Duncan. Suddenly Duncan said, "Turner, I taught you." "You did," said Turner, "and I taught Banks." "Yes," I said, "and I taught Hector Cameron." As an anatomical teacher Turner was unrivalled, while his business capacity, his organizing power, his orderly ranging of all his thoughts, and his positive love of work would have brought him up to the very top in any profession or business he might have selected.

As senior demonstrator, he gave a demonstration on Regional Anatomy in winter, each evening at 4 o'clock. By that time daylight in the theatre had failed, and it was lit with gas. Every man, from him of the first year to him of the third, came to that demonstration, trooping and clattering up the long stone stairs. I can remember the eagerness to get down into the front seats to get a good view of the dissection. The theatre itself was practically dark, but the arena was brilliantly lighted, where was



the revolving table with the subject on it under a white cloth. I would like again to attend a demonstration by Turner in that old theatre, say, in 1860. It would be queer now to listen to the fun and the chaff and the practical jokes and the occasional roars of laughter when something funny was done. Then, just behind the table, a red baize-covered door quietly opened, and Turner appeared. In an instant, almost before he had time to draw the sheet off the body, silence reigned, broken only by the rustle of notebooks as men got the pages ready to begin and slung their inkbottles to the desks or to their coat buttons. And for nearly an hour that silence reigned while the clear, though somewhat strident voice of Turner rang through the theatre describing the region appointed to be described for the day with a clearness and method that had to be heard to be appreciated. Over and over, backwards and forwards, was his theme turned and repeated, and yet it was so cleverly done that you didn't know it was going on. All that the ordinary student knew was that he learnt a great deal of Anatomy at Turner's demonstration, and that is why he came. But before long I learnt the trick myself, and found that it was a kind of fine art—it was necessary for you to have the knack of teaching in your blood, as the musician or the painter has his art in his blood, and as, too, in their case, an infinity of practice was necessary to carry on to perfection. I need not say more about Turner, for his splendid life, I trust, will not be done for many a year. To be a K.C.B., Principal of the University of Edinburgh, and President of the General Medical Council, is a combination of distinctions of such a high stamp as has rarely fallen to the lot of one man in our profession.

In August of 1865, being then barely 23 years old, I was fishing with my father in the Isle of Skye, when I got a letter from Professor Allen Thomson, of Glasgow, telling me that being in want of a senior demonstrator, and having no one of his own pupils quite ready for the post, he had applied to Professor Goodsir, who had recommended him to take me, and that he would be glad to have an interview with me. The next boat going south saw me on my way to Glasgow. I remember well some three gentlemen on board, who had evidently been fishing by the flies in their bonnets. One of them was a superbly-handsome man. He was George McLeod, who was afterwards



Sir George McLeod, the Queen's Surgeon for Scotland, and he became one of my great friends. As soon as possible, I made my way to the University. It was not the present splendid place, but the old one. It was situated in one of the worst parts of the old town of Glasgow—much as Sawney Pope Street in Scotland Road might be here. My heart sank as I made my way to it, for my own old Alma Mater was a fine, clean building in a lovely city. But this gloomy, damp, stinking neighbourhood was very depressing. Presently I came to the College gateway. It was grimy, black with smoke and much worn, but it was a beautiful old piece of work for all that. I was glad to know in later years that the old arch, under which I had so often passed with my head full of youthful hopes and fancies, was not pulled down for ever, but that its stones were taken to the grounds of the new University and set up there.

When he goes to a new situation the wise servant always takes a look round the house and grounds first. So I went into a small, antique-looking quadrangle, and made enquiries from a communicative student. Old-fashioned houses, with small low windows dating from the beginning of the 18th century, lined part of this area, and I saw by a door-plate that my future master lived in one of them. A dreadfully thin old man, with long white hair, and arrayed in gown and bands, crossed the quadrangle. My student informed me that he was the Professor of Divinity, and that on account of his great piety and his extreme attenuation he was known as "the holy ghost." I saw queer-looking wires and pulleys and mechanical things outside one of the houses. In it lived Thompson, the Professor of Physics. He is now Lord Kelvin. By the way, there also lived in Glasgow at that time another notable gentleman, who is now Lord Lister. Then I was shewn the circular Hunterian Museum, wherein resided all the treasures left by that wonderful man, William Hunter, to the University—specimens, books, manuscripts, engravings, and even things of such great value that they could only be seen by very special permission of the authorities. Behind the University and Museum buildings stretched a long, melancholy area of coarse, sodden grass, down to the fog-covered bank of the Clyde. But this gaunt, miserable-looking field was the source from which came a great part of the new University when a railway company wanted the site.



Then I repaired to the Anatomy department, and was received by George, the porter—my future factotum—who conducted me to the Professor. He was in a queer-looking little room, that looked partly like a museum and partly like an office. He received me very kindly, and then motioned me to a tall stool and seated himself on another. I remember we both had our legs drawn up on to bars of the stools, and we sat facing each other in the middle of this little room. Presently, he asked if I would mind his giving me a little advice, and I effusively begged him to do so. I should mention, by the way, that I was wearing a short coat. He said, "You're very young." I had to admit the soft impeachment, but hoped for improvement in time. "If you don't object to wearing a frock coat, it would 'make you look older.'" Then he said, "If a student is 'annoying you by talking or playing the fool, do not on any 'account speak *to* him or cease to lecture. Fix him with your 'eye, and talk determinedly *at* him. His fellows will then 'begin to stare at him also to see what is the matter, and he 'will drop his tricks." I never had to do anything more than that all the many years I taught Anatomy. His countenance had been very amiable till that minute, but it then became almost severe, and he said abruptly, "And never on any account 'whatever appeal to me." That was most characteristic of the man. Charming, pleasing in his manner, and always the gentleman, everybody felt a sense of his power and knew that no tricks must be played with old Allen. This made for order and discipline, which reigned all through the anatomical department. In the immediately adjoining part of the University, presided over by a poor old gentleman, who was almost in his dotage, was the physiological department. Pandemonium prevailed here. Here the student rioted in mischief and rowdyism. He crossed a corridor into Allen's demesne, and became at once a hardworking enquirer after knowledge.

It would be difficult to imagine two men more unlike than Goodsir and Thomson. The latter was a little man, somewhat of the Napoleonic type, like Syme was and Sir William Gull. He had well-cut features and a good complexion. He shaved clean, and had still a fair amount of white hair. He dressed very plainly, but with care, and made a fair display of clean



linen. He spoke quietly without any very notable accent, and his voice was pleasant and mellow. In his character he had much in common with Turner. He loved order and discipline. He had travelled, and had seen men and things—knew the world, in fact. He was an organiser and a business man. Everybody in Glasgow knew Thomson, because he interested himself in the affairs of the city. He was the mainspring of the agitation as a result of which the University was transferred from the foulest centre of the city to the beautiful park of Gilmorehill, where the present magnificent buildings were erected. This was the consuming passion of his latter years, and he never rested till it was satisfied. Again, when it became obvious that a clinical hospital had to be built beside the new University, he again came to the front and took an active part in the erection of the Western Infirmary. Who was he? He was the son of a remarkable John Thomson, of Edinburgh, who had such influence in all matters that concerned the University that he was known as the "Chairmaker." He lived to be 80 years old. He studied Chemistry, and conducted Chemical Classes; he was surgeon to the Royal Infirmary; he founded the New Town Dispensary; he wrote on Vaccination and lectured on Diseases of the Eye and Practice of Physic; he induced the Government to create a Chair of Pathology, and installed himself first Professor. As Lord Cockburn, in his Memoirs, said of him, "He never knew apathy, and medicine being his "first field, he was for forty years the most exciting of all our "practitioners and of all our teachers." A son by his first wife was William Thomson—Allen's half-brother—a very able man, who ended his life as Professor of Practice of Medicine in Glasgow. Allen's only child is John Thomson, F.R.S., the present Professor of Chemistry in King's College, London. So you see the Thomsons are a notable family.

Poor Goodsir had to teach himself everything. Thomson was taught everything with the greatest care, and visited all the great schools and the great men of the Continent. He was even for two years private physician to the Duke of Bedford. What a contrast to Lothian Street! He was specially trained to be a Professor. He first held the Chair of Anatomy at Marischal College, Aberdeen, then he was for six years Professor of Physiology in Edinburgh. But his liking always was for



Anatomy, and so when that Chair of Glasgow fell vacant he accepted it, and held it from 1848 to 1877. During all that time he was what is commonly called the moving spirit of the University, and nothing of moment could be done without him. He made the modern University. Up to his time, the scientific teaching had been poor there as compared with that at Edinburgh. Teaching, buildings, appliances, students were all poor, but he put a new sentiment into the place, and ever since the teachers of Glasgow have been men of the first order.

Let us look at his scientific work. It was nothing like that of Goodsir, either in extent or originality, but it was good enough to bring him to the Chair of the British Association in 1876—a post never yet filled except by a “big” man in science. Fellowships and Honorary Degrees he possessed galore. He was one of the main exponents of embryology in this country at a time when the science was in its infancy, because it must be remembered that he was born in 1809, five years before Goodsir. If one were to pick out two pieces among the notable contributions to science which he made, I think one would refer to the development of the great blood vessels. He, for instance, it was who demonstrated that the primitive aortæ do not long remain double, but unite in the middle line, the union beginning in the dorsal region and extending forwards and backwards. He also did considerable work in the development of the genito-urinary system. All that he wrote was clear, and his facts were skilfully marshalled. A love of truth pervaded them all, but he was, perhaps, too cautious, and never succeeded in laying down any of those broad definitions which amount to laws in science. He was a splendid teacher. He was among the first of the great biological teachers of this country in contrast to the natural historians of former days. What was of great assistance to him as a teacher and writer was his splendid power of draughtsmanship. I shall ever feel indebted to him for the lessons he gave me in this. With a towel and some coloured chalks in his left hand he would raise up the most beautiful pictures on the slate with his right, using the towel and his thumb to make his lights and shadows as only a real artist could do. The seventh, eighth and ninth editions of Quain's Anatomy, which he edited along with Sharpey, Cleland, Schäfer, and Thane, are full of his illustrations.



He lived the last seven years of his life in London, dying in his seventy-fifth year. Once, being in town, I got a note from him, asking me to come and dine alone with him and a guest whom he had with him. When I entered the drawing-room, and had shaken hands with him, the guest stepped forward, and with a smile said, "And how are ze Volffian bodies?" "Let me introduce you to Professor Kölliker," said my host. We had a charming evening, and among other things I remember we talked about duelling in German Universities. That was the last time I saw my old master.

Well, gentlemen, the sandglass must have run out by this time, and so must your patience. It is a great pleasure to me to come back again and give a lecture in the room where for five and twenty years I gave so many. The example of the great men of whom I have been giving these slight sketches had a powerful influence over me. When I came to teach myself, I endeavoured with what feeble powers I had and *longo intervallo* to imitate them, and I believe there are some who remember with kindly interest the work I did in this and the adjacent rooms. One of my greatest pleasures to-day is to know that the work of my former Chair is being directed by my successor on a bigger scale and on a higher platform than I could compass. He has endeared himself to us all, and is one of the most valued members of the Medical Faculty of this University.

Gentlemen, I thank you very much for your attention.



