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ABRAHAM COLLES

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BY
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ABRAHAM COLLES.

By T. PERCY C. KIRKPATRICK.

“**L**ET us now praise famous men, and our fathers that begat us.” This exhortation of the Son of Sirach has always appealed strongly to me, and this evening I ask you to bear with me while I endeavour to enlist your sympathy for one among those who were “wise and eloquent in their instructions,” who “have left a name behind them that their praises might be reported.”

Just one hundred years ago Abraham Colles was in the zenith of his fame as a surgeon; his name is still often spoken of, but there is some evidence that his personality is becoming mythical, and that the many services which he rendered to medicine in Ireland are being forgotten. Yet Colles had an attractive personality, and was well worth remembering for himself, quite apart from his “fracture,” his “fascia,” or his “law.”

The family of Colles is reported to have been settled in Worcestershire, and in the seventeenth century to have been of sufficient importance for some of its members to be chosen to represent the town in Parliament. A scion of this family, believed to have been a medical man, is said to have been in practice in Kilkenny early in the eighteenth century, but his identity we have not been able to trace. About the year 1732 William Colles, then the head of the family in Kilkenny, secured an interest in an extensive quarry of black marble at Millmount, near the town of Kilkenny, and there at that time he employed some thirty men, and “ten saws moved by water power” in quarrying, cutting, polishing the marble, and in manufacturing it into chimney pieces, tables, mortars and tombstones. A son of his, also William, was, on April 5th, 1753, sent to Ballitore School, where Edmund Burke was educated, and this son afterwards settled down in charge of the marble works at Millmount. In April, 1771, this William Colles married a Miss Mary Anne Bates, at Woodbrook, Co. Wexford, and on July 23rd, 1773, he wrote to his brother Richard, a lawyer in Dublin, as follows:—“Dr. Brother,—My dear Mary, at 3 o'clock this morning, made me the joyful father of a fine little thing—one of the light infantry.” This “fine little thing,” the second son of William Colles, was christened Abraham. He is said to have been a delicate child, and in 1779 his father died. Mrs Colles, although left a widow with a young family, proved herself to be an admirable guardian, who not only secured for her children a sound education, but won and held their affection throughout her long life. She survived her husband sixty-one years and died on November 27th, 1840, at the age of eighty-nine.

Young Abraham, with his brothers William and Richard, were first sent to a school kept by a Mr. William Lindsay, where the bill for "boarding and schooling" Abraham and his two brothers during the quarter ending December 6th, 1782, came to £10 5s 5d., of which eightpence was for "paper for Master 'Abraham.'" Later they went to the school where the Rev. John Ellison, ex-Fellow of Trinity College, was master, and from there on September 1st, 1790, at the age of seventeen, Abraham, with his brother William, entered Trinity College, Dublin.

It is recorded that the study of an ancient book on anatomy, which had accidentally come into his possession at Millmount, decided Abraham, while a schoolboy, to make the study of medicine his life work. Whether this story is founded on fact or not, it is evident that he had definitely settled on his profession at the time he left school. Eleven days after he had entered Trinity College he was indentured for five years to Philip Woodroffe, the Resident Surgeon at Dr. Steevens' Hospital, and at once he entered for the first year courses at the school of the College of Surgeons. The class ticket issued to Colles and his original indenture paper are preserved in the Library of the College.

Although an Arts student in Trinity College, Colles did not take out his medical courses in the School of Physic, and the only lectures which he attended in that School were those during the winter session of 1793-4, when he took a course of lectures on the Practice of Medicine delivered by Stephen Dickson, King's Professor, and a course in Chemistry by the Professor, Robert Perceval. For one winter session, 1792-3, he attended the practice of the House of Industry Hospitals, but the remainder of his clinical work was done at Steevens' Hospital, where he was in residence under the direct supervision of his master, Philip Woodroffe. He made no effort to look for honours in the Arts course of Trinity College, where his elder brother William was elected a Scholar of the House in 1793. In the spring of 1795, Colles took an ordinary Bachelor degree in Arts, and in the summer of that year was granted Letters Testimonial by the College of Surgeons. Before he was formally admitted to practice, that is before he had completed the five years of his indenture, he was evidently undertaking some surgical duties for remuneration. A copy of a letter, dated Steevens' Hospital, August 25th, 1795, directed to the Rev. John Foresyth, Kilcock, has been preserved. This letter is so interesting in itself, and so important as a landmark in the career of Colles, that it must be given in full. The letter is as follows:—

Dear Sir,—You will readily conceive how particularly circumstanced and how perfectly devoid of other resources I must be when I take the liberty of requesting that (if convenient) you will be kind enough to favour me in the course of 10 days with any sum of money which you may have proposed as a recompense for my attendance during your illness. Be assured, Sir, that nothing but a disappointment in the only other quarter from whence I could derive it and an absolute necessity of paying their fee to the College of Surgeons on the 5th of next month could have

forced me thus far to be troublesome, perhaps rude, to one I so highly esteem.

Please give my best respects to all the family at Betaghstown and believe me to be, yours truly, A. COLLES.

Unfortunately the answer to this letter has not been preserved, and we do not know what sum the reverend gentleman "proposed as a recompense," but we trust that it was adequate.

As soon as he had completed his courses in Dublin, Colles set out for Edinburgh, and in October, 1795, we find him entered for the winter session of the Medical School of that University. He was most assiduous in his attendance on his studies, and after two years he was admitted to the degree of M.D., having printed and defended a thesis *De Venæsectione*. Letters written by him to his mother while he was in Edinburgh have been preserved, and although they tell us practically nothing of his medical studies or of his teachers, they give interesting information about the social life of a student in Edinburgh at the time.

He tells us that he and his chum "purchased the section of a ticket in this last lottery," by which they had won a prize of sixpence each, which he found afterwards was reduced to threepence. On April 20th, 1796, he writes that the "three penny loaf is larger by one ounce this week," but the pleasure afforded by this fact was lessened when he learned that "potatoes cannot be procured here for love or money after this month." Fish, however, was plentiful, and he says: "for ten pence I got as much good cod as served Whist and me three days for our dinner, and it is not impossible that our landlady enjoyed some of the frugal tho' delicious repast." He did a little canvassing for his brother's marble works, and suggested that a remunerative trade in the export of marble from Kilkenny to Glasgow might be established. Another time he says they "dined on mutton chops, the best I ever tasted, and good peas with some fried bacon and bread and butter. But we paid well for these luxuries one shilling each. That is twice as dear as our dinner the Sunday before that, for we then paid only six pence each and got good kele broth, bacon and eggs, oaten bread and butter, and had a most beautiful girl to attend us."² He visited Holyrood, and described the furniture he saw in the Palace, which had, he said, "suffered a good deal by the lapse of about two hundred years." In September, 1796, he walked to Glasgow with his chum, and on the way they visited Mr. Dale's cotton mills at Lanark, where there were some eighteen hundred persons daily employed, "of which three or four hundred are little boys and little girls under ten years of age." At Glasgow they "discovered a Hedge Inn where we got a very good supper of cold lamb and eggs for eight pence, but this was in fact our dinner, and we paid two pence each for our bed, and indeed the sheets had not been lain in *only once by a gent from the country*. As we were neither proud nor saucy it served us very well until morning when we thought it smelled rather rank."²

Having taken his degree in Edinburgh on June 24th, 1797, he set out for London. It is said that he walked the entire distance, some four hundred miles, in eight days, and in a biography of him in the *Dublin University Magazine* it is recorded that a journal of this walk was preserved. Of such a journal we have not found any trace, either among the papers in the College of Surgeons, or among those preserved by his granddaughter, Mrs. Herbert Kennedy. A letter from his brother William to his mother at Millmount, dated June 25th, 1796, has been preserved which gives an account of his walk from London to Edinburgh which occupied sixteen days, two of which were spent in York, viewing the town and recovering from a strained sinew which had made him lame. He had walked from London to York in six days. While it is possible that Colles accomplished the remarkable feat of walking fifty miles a day for eight consecutive days, we doubt it very much, and think that it is quite possible that the walk of his brother William has somehow got attributed in an exaggerated way to Abraham.

We have not found any letters dealing with the period Colles was in London. It is probable that he walked the hospitals, as was customary at the time, and most likely he spent some time at the Borough Hospitals, St. Thomas's and Guy's, where he met with Astley Cooper, then a junior, who was appointed surgeon to the latter hospital in 1800. Robert McDonnell, in his memoir of Colles, says that while in London Colles assisted in making the dissections which were afterwards used to illustrate Cooper's monograph on hernia. We have not found any corroboration of this statement in the life of Cooper, but in later years Colles, dedicating his work on venereal disease to Sir Astley, says he does so having "the vanity to wish it to be known that I am honoured with your friendship."

Colles could not have spent long in London, as before the close of the year 1797 we find him settled in Dublin in a house in Chatham Street, with a room at the rear of an adjoining house in South King Street, in which he proposed to start private teaching in anatomy and surgery. He is said also to have been attached to the Charitable Dispensary, Meath Street, which had been opened in 1794 for the purpose of affording medical and surgical aid to the sick poor, and for preventing the spread of contagious diseases. His name, however, does not appear in the published lists of the medical officers of that institution.

His first efforts to obtain practice were not altogether encouraging. He tells us that from November, 1797, to November, 1798, his total fees amounted to £8 16s. 7½d., and about this he says:—

Apparently a trifling sum, yet considering the length of time I was sick and in the country, and that it was the first year after my return from Scotland, I do not look on it as a dispiriting circumstance that my fees have been so few and small.

In spite of this optimism Colles was hard put to it for a living.

The prospects in Ireland immediately after the Rebellion were not bright, and unless he could obtain a position on the staff of some of the hospitals, his path towards a surgical practice was likely to be long and arduous. It is reported that in the face of these difficulties he actually contemplated seeking the position of a surgeon in the Army. While this step was under consideration his old master, Philip Woodroffe, died on June 4th, 1799, leaving the post of Resident Surgeon at Steevens' Hospital vacant. Woodroffe had been connected with Steevens' since 1763; he was also a surgeon to the House of Industry Hospitals, to the Foundling Hospital, to the Blue Coat School, and to the Hospital for Incurables. He had been President of the College of Surgeons in 1788, so that his death was likely to result in some promotion in the surgical world of Dublin. The Resident Surgeoncy at Steevens' Hospital, although the salary was small, was a particularly lucrative post, as it enabled the holder to secure many apprentices from whom satisfactory fees were generally forthcoming.

George Stewart, the Surgeon-General, who was consulting surgeon and a Governor of Steevens' Hospital, urged Colles to seek the vacant post, and on July 26th, 1799, he was elected Resident Surgeon at a salary of £55 a year, with an addition of £5 a year in lieu of furniture.

This appointment of Colles at the age of 26 years gave him a sure start on the road to success. The salary, it is true, was negligible, but he had rooms, he was ensured of a regular supply of apprentices, he had complete charge of one-third of the surgical patients in one of the principal hospitals in Dublin, of which he was also the administrative head. He was quite unrestricted as regards private practice, or private teaching, and, provided he discharged his duties satisfactorily in the hospital, he was his own master.

To the discharge of his hospital duties Colles brought an ability above the average, a sound education, a great capacity for work, and a character which won for him respect and confidence from all with whom he came in contact. Almost immediately he was admitted to the Membership of the College of Surgeons, a rank which corresponded with the present Fellowship, and on January 4th, 1802, he was elected President of the College. We are apt to think that long ago a man had to wait till he was old for preferment, and that the promotion of youth to positions of trust and importance is one of the good things of recent growth, but Colles, not yet thirty years of age, was the titular head of the surgical profession in Ireland, and the chief officer of a great hospital.

In July, 1802, James Cleghorn, Professor of Anatomy and Chirurgery in Trinity College, owing to ill health, had to resign his appointment. His duties as Professor had been discharged for some time by William Hartigan, who had held the chair of Anatomy and Physiology in the College of Surgeons from

October, 1789 to 1799, and who had thus been one of Colles' teachers. Hartigan was a surgeon, without any university degree, and although the duties of the Professor of Anatomy included the delivery of clinical lectures on medicine in Sir Patrick Dun's Hospital, he became a candidate for the Professorship. The Board of Trinity College granted him the degree of M.D. *honoris causa*, and on November 6th, 1802, elected him Professor of Anatomy and Chirurgery. At the election there were four candidates, Hartigan, Colles, Wright, and Macklin. Colles got one vote and the remainder of the votes were cast for Hartigan, neither Wright nor Macklin getting any. In the following year Colles took an action at law against the Provost and Senior Fellows of Trinity College with the endeavour of having the election declared void, on the ground that Hartigan, having merely an honorary degree in medicine, was not qualified to deliver the clinical lectures in medicine. The Court, however, decided against him, and never again did Colles seek for any post in Trinity College.

Although unsuccessful in his candidature in Trinity College, Colles had not long to wait for a professorial chair. On September 4th, 1804, he was elected Professor of Anatomy and Physiology, as well as one of the Professors of Surgery, in the College of Surgeons, and in the following year his class in anatomy numbered 119 students. Colles had then his foot firmly on the path along which for nearly forty years he was to travel with ever increasing confidence and success. In 1807, he married Sophia, daughter of the Rev. Jonathan Cope, of Ahascragh, Co. Galway, and by her he had a large family of sons and daughters.

The steady growth of his practice is well shown by his fee book which has been preserved. In the year of his marriage his total fees amounted to £754 16s. 3½d., in the following year they were £1,160 9s. 4d., in 1811 they were over £2,000, in 1814 over £4,000, in 1820 over £4,000, in 1823 over £5,000 and in 1826 they amounted to £6,168 9s. 7½d. In the forty-six years of his practice he took in fees from patients £151,191 3s. 3d. As his individual fees were, as a rule small, and as much of his time was necessarily devoted to his duties as lecturer in the College of Surgeons and surgeon to Steevens' Hospital, we can well believe that Colles was an indefatigable worker. Frequently he was in the dissecting room before six o'clock in the morning, and while Resident Surgeon at Steevens' it was his duty to visit the wards before eight o'clock in the morning in the summer time and before nine in the winter. In addition to his other appointments, he became Consulting Surgeon to Cork Street Fever Hospital when it was opened in 1804, and to the Lying-in Institution in Mercer Street, and on November 3rd, 1826, he was elected Consulting Surgeon to the Rotunda Hospital. On January 29th, 1813, he resigned his position as Resident Surgeon to Steevens' Hospital and was at once appointed one of the Assistant Surgeons, succeeding in that

post his old teacher William Hartigan, who had just died. On his marriage Colles had taken a small house, No. 9 Stephen's Green, and later he moved to a larger one, No. 21 Stephen's Green, which he occupied till his death, and in which his son William afterwards lived. He is said to have been regular in his attendance at the meetings of the Surgical Society where he brought forward communications of anatomical and of surgical interest.

All through his career Colles seems to have been a careful note-taker, and in his case-books from time to time he recorded his own mistakes and shortcomings as well as matters of particular interest about the patients under his care. McDonnell quotes from these notes which were taken shortly after his appointment at Stevens' in 1799. In one he says:—

My anxiety for my own character was the predominant sensation at the commencement of the operation; but this gradually wore off. . . . My anxiety at the beginning of the operation was greater than I wish it to be on any future occasion, but on the whole I was well pleased that my state of mind had been such as it was.

Devoted as he was to his dissecting, to his practice and to his teaching, Colles had little time for the more spectacular occupations of life, and in his history there is little of such to record. He is said to have been a staunch Liberal in politics, and a strong supporter of Catholic Emancipation, but we do not find any evidence of his taking an active part in either the social or the political life of his time.

His first publication, after his degree thesis, was a small book entitled *A Treatise on Surgical Anatomy, Part the First*, which was published in Dublin by N. Kelly in 1811. Although it is described as Part the First, no further part was published. The book was reprinted in Philadelphia in 1820, and a second American edition appeared in 1831. In April, 1814, he published in the *Edinburgh Medical and Surgical Journal* (Vol. X. pp. 182-186) his well known paper *On Fracture of the Carpal Extremity of the Radius*, and in the following January in the same journal he had a longer paper *On the Operation of tying the Subclavian Artery* (Vol. XI. pp. 1-23). In 1815 Colles joined with three other Dublin men, Dr. John Cheyne, Dr. Edward Percival, and Dr. Charles Hawkes Todd, to undertake the editing and publication of an annual volume of Dublin Hospital Reports, and two years later the first volume appeared. To that volume Colles contributed two papers, *On the Distortion termed Varus or Club Foot* (Vol. I. pp. 175-190) and *On the Cause of the Disease termed Trismus Nascentium* (Vol. I. pp. 285-291). The second volume appeared in 1818, and again Colles contributed two papers, *On a Disease of the Lymphatic Glands of the Groin attended with Peculiar Symptoms* (Vol. II. pp. 268-275) and *On Fracture of the Neck of the Femur, illustrated by Dissections* (Vol. II. pp. 334-355). In Volume III., which did not appear till 1822, he had an important paper on *Fatal Consequences*

resulting from *Slight Wounds received in Dissection* (Vol. III. pp. 203-222), and this paper was amplified in the next volume by a paper written in the following year, but not published till 1827 (Vol. IV. pp. 240-251). With Volume IV. the series ended, and Colles ceased to be editor. A fifth volume, edited by R. J. Graves, appeared in 1830, and in this Colles published a paper on *Practical Observations upon certain Diseases of the Anus and Rectum* (Vol. V. pp. 131-157).

In 1824 he published a short paper, *Practical Precepts on Injuries of the Head* (Dublin: R. Graisberry. 1834. 8vo. pp. 20) founded, he tells us, on the larger work of William Dease, "the first Professor of the practice of surgery in our College." A copy of this paper he presented to each member of his class. In a review of the paper in the *Lancet* the writer says "though small and unpretending it really contains as much useful information as will generally be found in more voluminous treatises on the same subject." (*Lancet*, May 21, 1825.)

It was in this year that there was published in the *Lancet* the account of Colles, written by "Erinensis," who so brilliantly yet so scurrilously depicted the leading Irish medical men of the day. The writer of these articles, who was long unknown, is stated by Sir Charles Cameron, on the authority of Mr. Wakley, to have been Dr. Hennis Greene, an Irish doctor. "Erinensis" having criticised Colles for the negativeness of his teaching, for his lack of enthusiasm, and for his hatred of French surgery, continued:

"But who in this benighted part of the world, possesses in such abundance the qualities of redemption? Without what might be called the philosophy of his art, without a particle of that enthusiasm which reconciles us to the errors of a great man, without many books, and paying less attention to their contents, he is still the laborious, shrewd, observing, matter-of-fact, and practical Surgeon. As an operator he has many equals, and some superiors; but in advice, from long experience and a peculiar tact in discovering the hidden causes of disease, he has scarcely a rival." (*Lancet*, Feb. 15, 1824.)

Shortly after this Colles was for the second and last time elected President of the College of Surgeons. In 1837 Colles issued his most pretentious work, *Practical Observations on the Venereal Disease, and on the Use of Mercury*, which was re-published in London and Philadelphia during the same year, and was translated into German by Frederick Alex. Simon, Jun., and published in Hamburg in 1839.

In 1827, when the class of Anatomy in the College of Surgeons numbered 254, Colles resigned the chair, but he retained that of Surgery till 1837. He was then in ill-health, and had suffered a good deal from chronic bronchitis with occasionally acute attacks of dyspnoea and palpitation, which were looked on as of a gouty nature. He found that lecturing made him feverish, and was followed by great languor and debility. After the resignation of his Professorship his practice continued large, but it was getting less exacting, and with the relief from lecturing his health improved somewhat. In August, 1841, he felt himself

compelled to resign his surgeoncy to Steevens' Hospital, and a year later, in October, 1842, he felt so ill that he anticipated an early death, and he wrote to his friend, Robert Harrison, asking him to have his body examined "carefully and early" after his death, in order "to ascertain by examination the exact seat and nature of my last disease." His health, however, improved a little and he was able to carry on some practice during the following summer. In October, 1843, the dyspnoea which had been occasional became almost constant, and was attended with considerable enlargement of the liver, irregular pulse and anasarca. The end came on December 1st, 1843, and on December 9th, Dr. Robert William Smith detailed to a meeting of the Pathological Society the post mortem findings. In brief, these were a complete collapse of the left lung with old adhesions, and great emphysema of the right lung; the heart was dilated and flabby, although the valves were normal, and there was some atheroma of the aorta. The liver was displaced below the costal margin, but was not greatly enlarged, and the gall bladder "contained thirty moderate-sized gall stones." Colles was buried in Mount Jerome Cemetery, and his funeral was attended by a huge concourse of medical men, students and friends.

During his long professional life Colles had won the respect and regard of all who knew him, and the affection of those with whom he was intimate. The outstanding feature of his character was his strict honesty both in thought and deed, and he followed consistently the highest code of professional honour. Quietly confident in his own attainments, he was not boastful, and he was always ready to admit an error when he believed that he was guilty of one. It is told of him that on one occasion at Steevens' Hospital while inspecting the post mortem findings of a patient who had suffered from malignant stricture of the rectum, and who had died from peritonitis some time after an attempt had been made to dilate the stricture, Colles, finding a small opening in the gut below the stricture, at once called for the bougie he had used, and pointed out to the class how it fitted exactly into the opening, and then said: "Gentlemen, it is no use mincing the matter; I caused the man's death." In his work there was nothing of the showman, no attempt to put either himself or his work in the foremost place, but a continuous and unwearying effort to make his work worthy of that place. Solid rather than brilliant, cautious in speculation even to a fault, he was slow in coming to a conclusion, but having done so he seldom had to retract or change it. Gifted with an accurate memory and great power of observation, both of which he cultivated by assiduous work, he inspired confidence not only in his patients but also in his colleagues, and there was no surgeon in Dublin at the time whose advice was more eagerly sought for, or more trustfully relied upon.

Although not in the first rank of the world's surgeons, Colles will always take a high place, and his name is still well known to

English-speaking students of anatomy by his "fascia," of surgery by his "fracture," and in syphilology by his "law." I propose to devote the remainder of the time at our disposal to a short consideration of his work in these three departments of medicine.

To estimate the value and originality of the work of anyone it is important to acquaint ourselves with the knowledge current at the time, and the conditions under which that work was undertaken. At the opening of the nineteenth century both the teaching and the study of anatomy differed considerably from what obtains at the present day. There was then no legal method of providing bodies for dissections, other than those of criminals who had been publicly executed. Teachers had to provide subjects as best they could, either from patients who had died in the hospitals or workhouses, or from those bodies recovered after burial by persons known as "the resurrection men." Sometimes the subjects were plentiful, sometimes they were scarce, depending largely on the activity of the resurrection men, but except for some pickling there was little effort made to preserve the bodies so as to maintain a regular supply. In Dublin the supply was generally adequate, and both from Dublin and from Belfast there was carried on a considerable export trade to London and Edinburgh, where the supply was less proportionate to the demand. In 1828 the wholesale murders by Burke and Hare in Edinburgh, and three years later in London by Bishop and May, at last forced Parliament to take action, with the result that the Anatomy Act of 1832 (2 & 3 Wm. IV., c. 75) was passed, and legal provision was made for the supply to the schools of unclaimed bodies.

When Colles became Professor of Anatomy in the College of Surgeons not only was the study of the subject hampered by the difficulty in obtaining subjects, but also dissecting was attended with much unpleasantness and not a little danger. Nowadays a dissecting room is as clean and as well kept as an operating theatre; then it was usually a small over-crowded room, reeking with the smell of bodies in various stages of decomposition, many of which had probably been recovered after several days burial. Neither cleanliness nor godliness was considered as necessary associations with dissection. Often there were in the room a number of bodies of those who had died of infectious fevers, such as typhus, and the slightest scratch from a dissecting instrument was likely to be followed by an acute or fatal septic infection. Colles himself recorded several such cases in the two papers which he published in the Dublin Hospital Reports. He suggests as the least troublesome and the most efficacious way of prevention "that each dissecting table be furnished with a cup of Oleum Terebinthinæ, into which the anatomist should plunge his finger the moment it is wounded."

From the time that Harvey had described the circulation of the blood injection of the arteries had been carried out, and the

practice had become fairly common in the eighteenth century in the case of special dissections, but it is probable that in many cases the subjects used for dissection by the students had neither been treated with any preservative, nor had they received any injection. Minute dissection of a rapidly decomposing subject, the blood vessels of which were uninjected, in a dirty and ill-smelling room must have demanded considerable enthusiasm on the part of the student. The teaching of anatomy being largely systematic tended to make dissection less interesting. The nervous system, the vascular system, the muscles, the skeleton, the viscera were studied as separate systems without much relation to each other. Colles tells us "all elementary systems of anatomy describe the various parts of the human frame as if all were of equal importance, instead of giving to each part just that degree of attention it deserves and no more." (*Surg. Anat.* p. 22). To this method of teaching he attributes a great deal of the difficulty of the subject. Colles taught anatomy from the regional point of view, with constant reference to its surgical bearings; thus he impressed on the student the facts which were to be of importance to him in his practice, and consequently were more likely to interest him and to be remembered. Speaking of his own book, which unfortunately he never finished, Colles says:—

"While systems of Anatomy are multiplied beyond number, we have scarcely any elementary treatise, the sole object of which is, to describe the relative position of the parts, or to point out the subserviency of anatomical knowledge to surgical practice. To supply that defect for the pupils of this School, is the design of the present book. (*Ibid.*, p. 26.)

It is in this book that Colles describes the layer of superficial perineal fascia which bears his name, and which, by its attachments to the rami of the ischium and pubes and the base of the triangular ligament, is of such importance in delimiting the extravasation of urine which follows rupture of the urethra in front of the triangular ligament (*ibid.* p. 174).

Although the *Surgical Anatomy* was left in a very incomplete state, there is enough in it to let us see clearly the method Colles adopted in teaching anatomy. The general structure of the body might be studied in the library in the systematic treatises, but Colles insisted that the student in the dissecting room should become familiar with the relative position of the various parts, and more particularly with those parts which would most concern him in practice. This method of teaching was new at the time, and it was essentially practical. Its aim was to train physicians and surgeons, who knew their anatomy and could use it in their practice, rather than to train those who were to make the study of anatomy their life work. Perhaps even yet teachers have something to learn from the methods of Colles.

In surgery Colles won a much higher reputation as a consultant than as an operator, although there was, perhaps, no

safer operating surgeon in practice in Dublin during the first quarter of the nineteenth century. His minute and careful observation of details, his wide clinical experience, his familiarity with what was then known of pathological anatomy, together with his accurate memory, won for him a reputation for shrewdness in diagnosis, and in many cases enabled him to predict the future with confidence. Owing to his high code of ethics and to his strict honesty, he was able to resist any temptation to recommend an operation unless he was satisfied that it was the best thing for his patient. As we have said before, there was in him nothing of the showman.

That Colles was not deterred from attempting a necessary operation either by its difficulty or by its danger is evident from his paper *On the Operation of tying the Subclavian Artery*, which he published in the *Edinburgh Medical and Surgical Journal* for January 1st, 1815. He tells us that from a study of the anatomy of the parts he had early satisfied himself that it was possible to tie the artery, "either before it reaches or after it has passed the scaleni muscles." As, however, the operation had never been done, he hesitated to mention these views in his lectures. In 1809, Abernethy published his account of tying the external iliac artery, which he had done four times, twice with success. In view of Abernethy's results, Colles proposed, in 1809, to tie the subclavian in a patient with axillary aneurism, but in consultation he "was overruled, chiefly on the grounds of the operation never having been performed." In 1811, Thomas Ramsden, Assistant Surgeon at St. Bartholomew's Hospital, published an account of an operation which he had performed on November 16th, 1809, in which he had tied the third stage of the subclavian artery for axillary aneurism. (*Practical Observations on the Sarcocoele*. London: 1811. 8vo. p. 276). Although Ramsden's patient had died in seven days, yet the operation showed Colles that his "fear of immediate danger from a general revulsion in the system was totally groundless," and on October 10th, 1811, he tied the first stage of the right subclavian for a large axillary aneurism. During the operation the carotid sheath was opened, and the innominate artery was exposed, a fact which subsequently gave currency to the idea that Colles had tied the innominate, an operation which he never performed. Unfortunately, the patient died of sepsis on October 18th, 1811.

The second operation, in July, 1813, was the ligature of the third stage of the right subclavian, but the patient died of sepsis and gangrene of the arm in a few days. Colles described these operations in minute detail, as he says: "Because we have, as yet, but one account published of the operation of tying the subclavian artery after it has passed through the scaleni muscles, and no instance, I believe, has hitherto been recorded in which the artery was tied before it arrived at these muscles." Colles speaks of the "comparatively trifling pain" of the operation, and ends his paper by saying:

Although this operation has not yet proved ultimately successful, I think we should not despair. The history of surgery furnishes parallel instances of operation, now generally adopted, which, in the first few trials, failed of success.

In the April number of the *Edinburgh Medical and Surgical Journal* for 1814 Colles published his classical paper *On Fracture of the Carpal Extremity of the Radius*, Vol. X., pp. 182-186). At the time this paper was published Colles had not had the opportunity of verifying by dissection his observations, yet his description of the condition was so accurate and so clear that the many volumes which have since been published on the subject have added little that is material to our knowledge. It is interesting to observe that in the twenty-eight years which followed the publication of the second of these papers, during which Colles remained in active practice, he did not publish anything further either on the fracture or on the ligature of the subclavian artery, the two things on which his surgical fame now chiefly rests, nor do we find any further records on these subjects among his unpublished papers, which in 1853 were edited by his son William for the *Dublin Quarterly Journal of Medical Science*.

It was, perhaps, as a syphilologist that Colles had the greatest reputation during his lifetime, and his work, *On Venereal Disease*, published in 1837, may be read with advantage at the present day. Those whose knowledge of syphilis is derived from clinical experience in these countries during the last ten or fifteen years will find it difficult to picture what a venereal disease clinic was like one hundred years ago. In 1786 John Hunter had described with great accuracy the appearance of the hard, or the Hunterian, chancre; the dependence of the secondary symptoms of the disease on the primary infection was well recognised, but there was no clear differentiation between the infection of syphilis, of soft sore, or of gonorrhœa, and the relation of the late tertiary phenomena of syphilis to the primary infection was very imperfectly understood. From the beginning of the sixteenth century mercury had been recognised as the most efficacious remedy for syphilis, and later it had come to be administered with freedom in all forms of venereal disease. The early physicians and surgeons, however, recognised that they were dealing not only with a desperate disease, but also with a very drastic and dangerous remedy. A cure of syphilis was not to be expected unless the patient was submitted to the full effect of mercury, and unless every precaution was taken while getting this effect, the death of the patient was just as likely as the cure to result from the treatment. Strict rules were laid down for treatment of patients in the fluxing or salivating wards, and that treatment was neither lightly undertaken by the patient, nor carelessly ordered by the physician. A patient who was to undergo a mercurial course was prepared carefully beforehand. He was bled to from twelve to sixteen ounces, he was purged,

he was given low diet, and he was made to bath for an hour each day morning and evening. He had to look forward to a strict confinement during the treatment, which would last for six weeks or possibly longer. Throughout the course he was likely to experience not only discomfort, but a good deal of pain, and even if his disease were cured he would probably bear for ever after as a record of the treatment the loss of his teeth and damaged kidneys.

There were three general ways in which the drug was administered, by the mouth, by fumigation, and by friction or unction, the last being the favourite method. A usual preparation for oral administration was corrosive sublimate, the active principle of the Catholicon of Paracelsus, and of the solution recommended by Van Swieten. For fumigation cinnabar, ground up and made into candles with wax and various aromatic substances, was used, and Colles himself described a special cinnabar candle for the purpose (p. 59). While this method was acknowledged to be very efficacious, it was looked on as "a most dangerous method." For the administration of mercury by friction or unction, which was the way it was most commonly used, the "Neapolitan Ointment" was a favourite preparation. For making this ointment the following directions were given. The purest mercury only was to be used. This was to be killed with turpentine in a mortar until it was reduced to a black powder, then added to an equal quantity of fresh hog's lard, and mixed in a mortar till the particles of mercurial powder were so small "that they elude the sight though assisted with glasses and are equally distributed through the mass." The actual method of administering this ointment was described as follows.

The patient was to stand before a good fire, and the part of the body to which the ointment was to be applied was to be rubbed with the dry hand till redness was induced. On the first day ten drachms of the ointment were to be rubbed into the feet as far as the ankles, the second rubbing was to be from the ankles to the knees, and the third from the knees to the buttocks. These rubbings were made on alternate days so as to be completed on the fifth day, and the rubbing might be made either in the morning or in the evening, provided that at the time the stomach was empty. It was recommended that the ointment should be rubbed in with the naked hand, as this was less likely to cause irritation of the skin, but the danger of the rubber becoming salivated was recognised, and sometimes a pig's bladder was used as a glove. The patient was to wear "thread stockings, linen drawers, which together with his shirt must not be changed as long as you want to keep up and encourage the spitting." If on the seventh day there was no sign of salivation a fourth rubbing was made, extending from the buttocks to the loins and back, even to the neck. If on the ninth day there was still no ptyalism a fifth rubbing was made into the

shoulders and arms as far down as the hands. Three rubbings, however, were generally sufficient and a satisfactory result was judged of by the amount the patient spat in the day. "If the discharge is less than three pints it is too small and not sufficient to conquer the disease. If it exceeds the bounds of six pints it will be too violent to be borne by the patient for a sufficient time to get the better of the distemper."² When the salivation was established satisfactorily the patient was again bled and purged, and "the clothes wherewith the patient was covered during the time of the friction"² were taken off, and great care had then to be taken to prevent the patient catching cold. Usually the salivation lasted for twenty-five days, "to a month at furthest," and afterwards the patient required careful nursing and dieting till he recovered his strength. The methods adopted by individual surgeons differed, but the general rules were the same for all. As was said: "For as the sailor directs his course by observing the Bear Star, so the mercurial course is to be regulated by the presence and degree of the spitting." The treatment was described as one of considerable "expense and hazard", and "so violent a procedure"² was not to be undertaken for trivial complaints, "but raging symptoms are eradicated by it—if the strength of the patient allow it."

Such was the method adopted for the treatment of venereal disease in the eighteenth century. John Hunter advocated the use of mercury as a specific for "the venereal disease in two of its forms," and he laid down the rule that "the quantity of mercury to be thrown into the constitution for the cure of any venereal complaint must be proportioned to the violence of the disease." While saying this he abandoned completely the strict regimen which earlier physicians had insisted on during a salivation. He said:

The manner of living under a mercurial course need not be altered from the common, because mercury has no action upon the disease which is more favoured by one way of life than another. Let one ask anyone what effect eating a hearty dinner and drinking a bottle of wine can have over the action of mercury upon a venereal sore.

The effect of this teaching was soon evident. Salivation was induced for the treatment of all forms of venereal disease, and induced, too, without the meticulous care with which the patient undergoing such treatment in former days used to be guarded. The treatment soon became not only ineffective, but even more dangerous than the disease which it was used to cure. As Colles says, patients who "under the old practice required six or seven weeks for their cure, were under the new plan of treatment found to require as many months or years. By the former the disease was really and quickly cured; but by the latter it is only pursued from one resting place to another."² (pp. 36-37). During the Peninsular War venereal disease as treated with mercury made frightful havoc among the soldiers, so much so that the use of

mercury fell into great disrepute, and the non-mercurial treatment of venereal disease was advocated. In so far as this treatment was used for venereal disease which was not syphilitic the gain was great, but as no clear distinction was drawn between the various forms of venereal disease it was impossible to frame general rules, to guide practitioners as to when mercury was to be used. The great advocate in Dublin for the non-mercurial treatment was Richard Carmichael, who looked on the use of mercury, except for the treatment of the typical Hunterian chancre and its secondary symptoms, as almost criminal. Colles on the other hand advocated strongly the use of mercury, but he used it under a very rigid control, both of the patient and of the drug. His books abounds with wise advice founded on his vast clinical experience of the disease both in Stevens and the Lock Hospitals.

To us now the most interesting chapter in the book is that in which he deals with syphilis infantum, of which he gives an admirable description. He admits that there are many things in connection with the transmission of syphilis from the parents to the children which he is unable to explain, but he states the facts as he found them and makes no attempt to force them into conformity with his views of the disease. It is in this chapter that he states what is now known as "Colles's Law."

"One fact well deserving of our detention is this: that a child born of a mother who is without any obvious venereal symptoms and which, without being exposed to any infection subsequent to its birth, shows this disease when it is a few weeks old, this child will infect the most healthy nurse, whether she suckle it or merely handle and dress it; and yet this child is never known to infect its mother, even though she suckle it while it has venereal ulcers on the lips and tongue." (p. 304.)

Although this "Law" was original the observation on which it was founded had been made many years earlier. Still, in his *History of Pediatrics* (London 1931), gives the following quotation from a treatise on the care of children by Simon de Vallambert, published in 1565.

"I saw at Tours a goldsmith who for 14 or 15 years since he had the Great Pox had felt no ill at all and seemed quite well, nevertheless all his children that he has had since then had the Pox soon after they were born, at seven or eight days old, and gave it to their Nurse. although the mother was an honest woman well spoken of, who strangely enough had never taken the disease from her husband and had not been affected in any way." (Cinq livres, De la manière de nourrir et gouverner les enfants des leur naissance. Par M. Simon de Vallambert. A Poitiers. 1565.)

Colles closes his book with a chapter on the use of mercury in affections of the nervous system, and he describes the cases of several patients, suffering from various nervous affections, in which great benefit was derived from the administration of mercury. Although it seems to have been in his mind, he never suggests that he considered that these conditions were connected with syphilis. In spite of his accurate knowledge of primary and secondary syphilis and his association of some of the earlier

and more common tertiary phenomena with the primary infection, it was quite impossible for him to prove the connection of the late or para-syphilitic phenomena. Such proof in the case of visceral, vascular and nervous syphilis had to wait for a much more advanced knowledge of histo-pathology than existed at that time. Colles's caution prevented him from speculating, or from formulating any of those hypotheses which are so essential for extending the bounds of knowledge. His advance was made step by step, and there never were any of those flights of imagination by which genius sometimes changes the aspect of science. He recorded his observations on the good effect of mercury in certain diseases of the nervous system, but he says:—

I shall refrain from offering any theory, or attempt at explanation, of the modus operandi of mercury in this class of diseases; partly because we are totally unable to do so in reference to those diseases in which its influence is still more marked and obvious and in which its power over disease is almost certain and unerring, or specific: but principally, I abstain from offering any theoretical observations whatsoever, because the class of diseases to which I have alluded, are, as regards their pathology, involved in deep obscurity. (p. 341.)

Had he ventured to offer some "theoretical observations" the world might not have had to wait so long for the recognition of the syphilitic origin of some of that "class of diseases" to which he alluded. However, we must judge him by what he has given us, not by what he might have given, and, judged by that standard, we award him a high place. A diligent and conscientious worker, a shrewd and capable observer, who recorded accurately what he saw, and one who throughout his whole life lived up to the highest code of professional ethics, Abraham Colles was a great Irish surgeon



