A mirror for surgeons : selected readings in surgery / by D'Arcy Power.

A MIRROR FOR SURGEONS

A MIRROR FOR SURGEONS

Selected Readings in Surgery

BY

SIR D'ARCY POWER, K.B.E., F.R.C.S.

Consulting Surgeon to and Archivist at St. Bartholomew's Hospital, London

BOSTON
LITTLE, BROWN AND COMPANY
1939

PRINTED IN THE UNITED STATES OF AMERICA

Still the race of hero spirits
Pass the lamp from hand to hand.

CHARLES KINGSLEY "The World's Age"

INTRODUCTION

WHEN Percival Pott at the age of seventy-five years resigned from St. Bartholomew's Hospital he said with tears in his eyes that he had served the Hospital boy and man for half a century. The same claim may be made for Sir D'Arcy Power, with the addition that for over a half a century he has not only maintained the high standing of teaching and practice in the oldest British hospital but has also greatly contributed to the maintenance of the cultural standards which are so proud a tradition of the British profession. His standing as a bibliophile is attested by his election some years ago to the presidency of the Bibliographical Society and by his long tenure of the office of Honorary Librarian of the Royal College of Surgeons. In the latter capacity he revised and edited Plaar's *Lives of the Fellows of the Royal College of Surgeons of England,* a monumental labor well done. In 1886 he edited the *Memorials of the Craft of Surgery in England* from materials which had been compiled and left in manuscript by John Flint South, another invaluable work of

reference. In addition Sir D'Arcy has contributed many of the biographies of surgeons to the *Dictionary of National Biography,* and his *Life of William Harvey* in the *Masters of Medicine* series is the standard biography of the discoverer of the circulation. It is impossible to mention his numerous other contributions to the history of medicine, all marked by their accuracy and thoroughness and by the delightful style of which he is a master.

The Dean of the British surgical profession requires no introduction to his American colleagues. In 1930 he came to the United States as the first Visiting Lecturer at the Institute of the History of Medicine of the Johns Hopkins University, and during his stay in this country he gave a number of addresses to large audiences in other cities than Baltimore. In the same year some of his many friends gathered a volume of his selected writings and published them in his honor, accompanied by a short title bibliography which illustrated not only his outstanding prominence as teacher and practitioner of surgery but also the breadth of his studies in the literature and history of his profession.

From the above it can be readily gathered that no man is better qualified than Sir D'Arcy Power to select from the writings of the Masters of

Surgery a series of contributions illustrating their work and achievements. In the present volume Sir D'Arcy has chosen twenty-two of the great surgeons who have contributed to the advancement of surgery from an art to a science. Beginning with John of Arderne in the fourteenth century he gives extracts from the writings of the great British surgeons down to Jonathan Hutchinson and Macewen. One Frenchman, Ambroise Paré, figures in the list, and the book concludes with extracts from the writings of three Americans, W. S. Halsted, Henry J. Bigelow and J. Marion Sims. Needless to add, the selections have been made with great judgment and in every instance are sufficient to give the gist of the author's publication on some important subject. Each is preceded by a concise introduction giving the background of the material which follows.

This little book will not only furnish delectable reading but will be treasured as a valuable work of reference.

FRANCIS R. PACKARD, M.D.

Unable to display this page

CONTENTS

A MIRROR FOR SURGEONS

CHAPTER I

MASTER JOHN ARDERNE

1307–1380?

MASTER JOHN ARDERNE is the first English surgeon of whom we have any certain knowledge, thanks to the fact that he gives many autobiographical details in his works. Some of his writings have been published but a great deal still remains in manuscript and has never been printed. He saw active service in France during the Hundred Years War and was probably attached to the Army of the Black Prince as he is responsible for the only account of the manner in which that great leader attained his cognisance of three ostrich plumes. During one of the interludes of the war he came to London, married and in 1348 bought an estate at Beddington near Croyden. His wife possibly died of the black death, for a year later he sold the property and settled at Newark where he had a large surgical practice until 1370. He then returned to London, was elected a member of the Fraternity of Surgeons, a small but select body,

and died some ten years later. His practice was amongst the nobility, the higher members of the Church and the better class citizens. He was worldly-wise, had a good opinion of himself, and was perfectly honest for he tells of his failures as well as of his successes. His fees were enormous, for money was worth seventeen to twenty times what it is today. It is known that his patients lived many years afterwards and it is probable that he was justified in his charges. The ransom of a single knight taken prisoner in France would pay for an operation and it is possible that many knights' ransoms were handed over to him by his English patrons.

ON THE BEHAVIOUR OF A LEECH. ADVICE TO HIS FELLOW SURGEONS

"First it behoveth him that will profit in the craft of surgery that he set God before him in all his works and evermore call meekly with heart and mouth His help; and occasionally give of his earnings to poor men, so far as he may, that they by their prayers may get him grace of the Holy Ghost. And that he may not be found hesitating or boastful in his words or in his acts let him refrain from talking too much, especially amongst

great men, and let him answer advisedly questions which are asked him lest he be caught out afterwards in what he had said. Forsooth, if his deeds be known often to disagree with his words and his behests he will do harm to his own good fame, wherefore a poet says "let your work be better than your words as boasting is hurtful." Also a leech ought not to laugh much or joke much and as far as lies in his power let him avoid the friendship of knaves and dishonest folk. He should, too, be always busy about things belonging to his craft. He must either be talking about it or studying it or be writing or praying, for the use of books brings a doctor a good reputation because it is both noticed by others and he himself becomes wiser thereby. And besides all this it is profitable to him that he be always found sober, for drunkenness destroys all virtue and brings it to naught as sayeth a wise man "drunkenness destroys whatsoever wisdom teaches." Let him be content in strange places with the meats and drinks found there, using moderation in everything. For the wise man says "as it is good to be moderate in everything that is, so without moderation everything that is perisheth."

"He should mock no one, for it is said "he that scoffeth at other men will not go away unmocked."

If he is asked about any other leech he should neither belittle him, or praise him too much, nor commend him, but he may answer courteously and say "I do not know very much about him but I have never heard that he is not a good and honest person." And thus honour and thanking of the other doctor will increase and multiply to him, after that saying "honour is in the person honouring and not in the person honoured." Let him be careful not to admire too openly the lady or the daughters or the other fair women that he sees in great men's houses, nor offer to kiss them nor touch their breasts either privily or openly nor their hands lest he stir up anger in the lord or his friends. In so far as is possible he ought not to trouble the servants but to get their love and good will. Let him abstain from harlotry both in words and deeds, for if he gives himself to harlotry in privy places sometime he may be caught in the open and that will be bad for him, for it is said "evil communications corrupt good manners."

"When a sick man or any of his friends comes to the doctor to ask help or counsel of him he ought not to be either too rough or too familiar but pleasant in his bearing according to the position of the person, to some reverently, to some

friendly, for the wise man says "familiarity breeds contempt." It is well also if he make excuses that he may not immediately consent to what they ask, so long as it doth not hurt or anger some great man or friend. Therefore, if he is inclined to comply with what a patient asks he ought to arrange a fee for his trouble and get it beforehand. But let the leech always take care that he gives no definite answer in a case until he has first seen the man and learnt what he is suffering from. And when he has seen and recognized the complaint, although he thinks the sick man may be healed he ought to tell the patient of the dangers which await him if he puts off treatment, and if the patient watch carefully what he is doing (i.e. is interested in his own case) then let the leech ask his fee boldly more or less, but let him ever beware of asking too little, for asking too little puts at nought both the market and the thing. Therefore for the cure of fistula in ano, when it is curable let him ask sufficiently of a wealthy or great man a hundred marks (mark = 13/4) or £40 with robes and an annuity of 100 shillings as long as he live. From smaller men he may ask £40 or 40 marks without an annuity, but he should not take less than one hundred shillings, for never in all my life did I take less than one hundred shillings for

the cure of a fistula. Nevertheless let another man do as he thinks well.

"And if the patient or their friends or their servants ask how long the cure will take let the leech always double the time he thinks likely, that is, if the leech hopes to heal his patient in twenty-weeks, for that is the usual time for curing a fistula, he should add as many more, since it is better that the time be lengthened rather than the cure, because prolongation of the cure makes the patient despair and cause him to lose faith in the leech. And if the patient wonders and asks the surgeon why he said he would be so long in curing him since he healed him in half the time he should reply it was because the patient was stout hearted and suffered pain so bravely, or that he had a good constitution and flesh that healed well, or let him give other reasons which please the patient because such expressions are satisfactory and the patients are proud and delighted to hear them.

"A leech ought also to have well cut clothes, dressing soberly and not like a clown or a poet. He ought too to have clean hands and well shaped nails which should not be black or filthy. He should behave himself courteously at a lord's dining table and he should not offend the guests who are sit-

ting near him either in words or in deeds. He should hear many things but speak little; the wise man says "it is better to use the ears than the tongue."

"ffirst it bihoueth hym that wil *pro*fite in this crafte that he sette god afore eu*er*more in all his werkis, and euermore calle mekely with hert and mouth his help; and som tyme visite of his wynnyngis poure men aftir his my3t, that thai by thair prayers may gete hym grace of the holy goste. And that he be no3t y-founden temerarie or bosteful in his seyingis or in his dedes; and abstene he hym fro moche speche, and most among grete men; and answere he slei3ly to thing*is* y-asked, that he be no3t y-take in his wordes. fforsoth 3if his werkes be oft tyme knowen for to discorde fro his wordes and his byhestis, he shal be halden more vnworthi, and he shal ble*m*myssh his oone gode fame. Wherfor sei þ a versifio*ur*, 'vincat opus verbum, minuit iactantia faman'; 'lat werke ou*er*come thi worde, for boste lessene þ gode lose.' Also be a leche no3t mich laughyng ne mich playing. And als moche as he may withoute harme fle he þe felawshippe of knafes and of vnu[n]este persones. And be he eu*er*more occupied in thingis that biholdith to his crafte; outhir rede he, or studie he, or write or pray he; for the excercyse of bokes worshippe þ a leche. ffor why; he shal bo þ by-holden and he shal be more wise. And aboue al þise it profiteth to hym that he be founden euermore sobre; ffor dronkenne3 destroyeth al vertu

and bringith it to not, as seith a wise man, ' Ebrietas frangit quicquid sapiencia tangit ': ' Dronkenes breketh what-so wisdom toucheth.' Be he content in strange places of metes and drinkes þer y-founden, vsyng mesure in al thingis. ffor the wise man seith, ' Sicut ad omne quod est mensuram ponere prodest, Sic sine mensura deperit omne quod est ': ' As it profiteth to putte mesure to al thing that is, So without mesure perissheþ all þing þat is.' Skorne he no man. ffor of that it is seid, ' Deridens alios non inderisus abibit ': 'He that skorneþ other men shal not go away vnskorned.' ȝif ther be made speche to hym of any leche, nouther sette he hym at nouȝt ne preise hym to mich or commende hym, but thus may he curteysly answere ; ' I haue noȝt vrey knowleche of hym, but I lerned noȝt ne I haue not herd of hym but gode and honeste.' And of this shal honour and thankyngis of eche party encresse and multiplie to hym ; aftur this, honour is in the honorant & noȝt in the honored. Considere he noȝt ouer openly the lady or the douȝters or oþer fair wymmen in gret mennes [houses] ne profre tham noȝt to kisse, ne touche not priuely ne apertely thair pappes, ne thair handes, ne thair share, that he renne noȝt into the indignacion of the lord ne of noon of his. In as moche as he may, greue he no seruant, but gete he thair loue and thair gode wille. Abstene he hym fro harlotrie als wele in wordes as in dedes in euery place, for ȝif he vse hym to harlotery in priue places som tyme in opene place ther may falle to hym vnworship of yuel vsage; aftir þat it is seyde, ' Pede super colles pedes vbi pedere nolles.' ' ffart vpon

hille3 and thou shalt fart whar thou wolde no3t agayn thi wille3.' And it is seid in anoþer place, ' Shrewed speche corrumpith gode maners.' When seke men, forsoth, or any of tham bysyde comeþ to the leche to aske helþ or counsel of hym, be he no3t to tham ouer felle ne ouer homely, but mene in beryng aftir the askyngis of the persone3 ; to som reuerently, to som comonly. ffor after wise men, Ouer moche homelynes bredeþ dispisyng. Also it spedeþ þat he haue semyng excusacions that he may not incline to þair askyngis, without harmyng or without indignacion of som gret man or frende, or for necessarie occupacion. Or feyne he hym hurt, or for to be seke, or som other couenable cause by whiche he may likely be excused. Therfor, 3if he will fauoure to any mannes askyng, make he couenant for his trauaile, and take it byforehande3. But avise þe leche hym-self wele that he giffe no certayn answer in any cause, but he se first þe sikenes and the maner of it; and when he haþ seen and assaied it, þof-al hym seme that the seke may be heled, neþerlesse he shal make pronosticacion to þe pacient þe perile3 to come 3if the cure be differred. And 3if he se þe pacient persewe bisily the cure, þan after that þe state of þe pacient askeþ aske he boldly more or lesse; but euer be he warre of scarse askyngis, ffor ouer scarse askyngis setteþ at not both þe markette and the thing. Therfore for the cure of fistula in ano, when it is curable, aske he competently, of a worthi man and a gret an hundred marke or fourty pounde, wiþ robe3 and fee3 of an hundred shillyng terme of lyfe by 3ere. Of lesse men fourty pounde, or fourty marke aske he

without fee3; And take he no3t lesse þan an hundred shillyng*is*. ffor neuer in all my lyf toke I lesse than an hundred shillyng for cure of that sekenes. Ne*þer*lesse do another man as hym þink bett*er* and more spedefulle. And 3if the pacientes or thair frende3 or seruaunt3 aske by how moche tyme he hopeth to hele it, eu*er*more lat the leche byhete þe double þat he supposeth to spede by half; that is 3if the leche hope to hele þe pacient by twenty wekes — that is the comon course of curyng — adde he so many ouer. ffor it is better that the terme be lengthed þan the cure. ffor p*ro*longacion of the cure giffeþ cause of dispairyng to the paciente3 when triste to the leche is moste hope of helthe. And 3if the pacient considere or wondre or aske why that he putte hym so long a tyme of curyng, siþe þat he heled hym by the half, answere he that it was for that the pacient was strong-herted, and suffrid wele sharp þingis, and that he was of gode complexion and hadde able flesshe to hele; & feyne he othir causes pleseable to the pacient, ffor paciente3 of syche worde3 are proude and delited. Also dispose a leche hym that in clothes and othir apparalyngis be he honeste, no3t likkenyng hymself in apparalyng or berying to mynistralle3, but in clothing and beryng sew he the maner of clerkes. ffor why; it semeth any discrete man y-cladde with clerkis clothing for to occupie gentil me*n*ne3 borde3. ¶ Haue the leche also clene handes and wele shapen naile3 & clensed fro all blaknes and filthe. And be he curtaise at lorde3 borde3, and displese he no3t in wordes or dedes to the gestes syttyng by ; here he many þingis but speke he but fewe. ¶ For

a wise man seith, 'It semeth more to vse the eres than þe tunge' " *Sloane Manuscript British Museum Leaf 143, verso.*

A CASE OF A DERMOID CYST ON THE SCALP

"Sir Thomas Newmache hadde a sone that hadde a wenne ryght upponne the opene of the heed before and he was borne with it withall but it was furste no more thane a bene and it wex more and more so that by the child was V winter of age the wenne (was) as moche as the yelke of any ey and as water and heer gryw thereone, but not so thykke allynges as in other places of the heed; so befylle it that a mayster came and sawgh it and seyde he wolde do his crafte thereto, but he wolde not undertake the chyldes lyff, ffurste he leyde an onynoun rosted therto, and under it leyde pouder for to breke it with, and so it dyde, and whanne it was brokene ther came out thenne wose and whyte, and he leyd therto every day not but laard and a pouder otherwhyle to clense it with, and so it dyde; whane the wounde was wele enlarged aboven, thane fonde they withinne the wenne a loke of heere al-so-longe as a mannes fynger, and were as gret, lyinge wrythed one a lumpe and whane it was removyd owt it was root-

fast growynge, and therefore have I wreten it as for a wondir that suche a loke of heere schulde growe under another skyne; and the skyne of the wenne bare heer never the lattere." *Cambridge ms. not printed.*

A CASE OF TRAUMATIC TETANUS

"There was a gardener who, while he worked amongst the vines, cut his hand with a hook upon a Friday after the feast of (the translation of) Saint Thomas of Canterbury in summer (July 7), so that the thumb was wholly separated from the hand except at the joint where it was joined to the hand, and it could be bent backward to his arm and there streamed out much blood.

"And as touching the cure. The thumb was first reduced to its proper position and sewn on and the bleeding was stopped with Lanfrank's red powder and with the hairs of a hare and the dressing was not removed until the third day. When it was removed there was no bleeding. Then there was put upon it those medicines which engender blood, redressing the wound once every day. The wound began to purge itself and to pour out matter. And on the fourth night after, the blood began to break out about mid-

night and he lost almost two pounds of it by weight. And when the bleeding was stopped the wound was re-dressed daily as before. Also on the eleventh night about the same time the bleeding broke out again in greater quantity than it did the first time. Nevertheless the blood was staunched, and by the morning the patient was so taken with the cramp in the cheeks and in the arm that he was not able to take any meat into his mouth, nor could he open his mouth, and on the fifteenth day the bleeding broke out again, and on the eighteenth day the blood broke out again, beyond all measure, and always the cramp continued and he died on the twentieth day." *Cambridge ms. not printed.*

A STONE IMPACTED IN THE URETHRA

"A stone impacted in the urethra "causeth the patient to suffer right great pain and intolerable sorrow. It may be pushed back into the bladder by an instrument of silver or latten such as may be made in every good town by Craftsmen that maketh pins for women's heads or at the goldsmiths. Many a one have I so holpen. I have seen young men and old in the which the stones have been so great that they could neither come out

by the eye of the yard nor be pushed back but always abideth in the middle of the yard. And I cured them easily and quickly in this manner: First, I took the patient and laid him grovelling and then I bound the yard on both sides of the stone with linen bands, so that the stone might nowhere flee away, and with a little incision upon the stone with a lancet or with a razor I had out the stone, and after that I sewed the outer skin over the hole with a needle and thread, and then I laid on a dressing of white of an egg mixed with finely ground wheaten flour and left it for three days, and within fifteen days I had him perfectly cured." *Cambridge ms. Unprinted.*

CHAPTER II

THOMAS GALE (A Military Surgeon)

1507–1587

THOMAS GALE was a surgeon of the Tudor period who had seen much war service, for he tells of patients he had treated at the Siege of Pavia, at Mutrell and at St. Quintain's in 1557. He then practised in London and published some valuable text books on surgery in 1563 and 1566. They are still a joy to read for he was writing at the best period of English. His teaching is especially sound in regard to gun-shot wounds, for he says "there is no danger in letting the shot remain but there is great peril in long searching for it." How good a sportsman he was has come down to us in an extract dated on June 20th 1562 "there was a great (archery) shooting of the barber surgeons for a supper at their own hall. They had six drums playing and a flute and two great flags and as a shot was won down went one flag and up another and Master Gale on his side won the supper."

QUACKS IN LONDON

"In the year 1562 I did see in the two hospitals in London called St. Thomas' Hospital and St. Bartholomew's Hospital to the number three hundred and odd poor people that were diseased of sore legs, sore arms, feet and hands, with other parts of the body, so sore infected that a hundred and twenty of them could never be recovered without loss of a leg or of an arm, a foot or a hand, fingers or toes, or else their limbs crooked so that they were either maimed or else undone for ever. All these were brought to this mischief by witches, by women, by counterfeit javills that take upon them to use the art, not only robbing them of their money but of their limbs and perpetual health. And I, with certain other, diligently examining these poor people, how they came by their grievous hurts and who were their chirurgions that looked unto them and they confessed that they were either witches, which did promise by charms to make them whole, or else some women which would make them whole with herbs and suchlike things, or else some vagabond javill which runneth from one country to another promising unto them health only to deceive them of their money.

This fault and crime of the undoing of this people were laid unto the chirurgians, I will not say by part of those that were at the same time masters of the same hospitals but it was said that carpenters, women, weavers, cobblers and tinkers did cure more people that the chirurgians. But what manner of cures they did I have told you before, such cures as all the world may wonder at: yea I say such cures as maketh the devil in hell to dance for joy to see the poor members of Jesus Christ so miserably tormented.

What shall I say here unto but lament and pray unto our Lord Jesus Christ for His precious blood's sake that he shed upon the Cross to illuminate the hearts of the magistrates for amendment hereof. And that this rablement of runagates with witches, bawds and the devil's sooth-sayers, with tinkers, cobblers and sow gelders and all other their wicked coherents of these same devilish and wicked sects which doth thus abuse this noble art of medicine to the utter defacing of the same may be reformed and ammended.

I think there be not so few in London as three score women that occupy the art of phisick and surgery. These women some of them be called wise women or holy and good women, some of them be called witches and useth to call upon

certain spirits, and some of them useth plain bawdery and telleth Gentlewomen that cannot bare children how they may have children. I think if this worshipful rablement were gathered together they would make a greater profession than ever did the monks, the friars and the nuns when they did swarm most in London." *Gale, "The Office of a Chirurgian," London, 1586, pp. 32–33.*

THE INSTITUTION OF A SURGEON

"The institution of a Surgeon" is thrown into the form of a catechism. The speakers are John Yates, who was an examiner in the Barber-Surgeons' Company in 1570; Maister Thomas Gale himself, who had been Master of the Company in 1561; and John Field, Master of the Company in 1577, who had been the servant and friend of Richard Ferris, a surgeon held in the highest respect by his fellows, but of whom little is now known, for he does not appear to have written anything. Yates, Gale, and Field were all well-known surgeons, Gale being the eldest.

John Yates begins the dialogue in the true spirit of Elizabethan times: "Phoebus who chaseth away the dark and uncomfortable night casting his

golden beams on my face would not suffer me to take any longer sleep but said; Awake for shame and behold the handiwork of our sister Flora, how she hath revested the earth with most beautiful colours, marvellously set in trees, plants, herbs, and flowers; insomuch that the old and withered coat of Winter is quite done away and put out of remembrance; at which words of Phoebus my heart quickened in me, and all desire of sleep was eft soon forgotten. Wherefore I am now come into this beautiful meadow to recreate myself and gather some of those pleasant herbs and flowers which here do grow. But let me see, methinks I perceive two men walking together and reasoning also very earnestly. I will approach nearer unto them, perchance they be of my acquaintance; surely I should know them. I am deceived if the one be not my friend M. Gale and the other Maister Field. It is so indeed, wherefore I will go and salute them. God that hath brought us together into this place make this day prosperous and fortunate unto you both.

"Thomas Gale: Brother Yates, the same we wish unto you and you are welcome into our companie.

"John Field: This fair and pleasant morning will not suffer Maister Yates to keep his bed, but

leaving the city he roameth the fields to espy out some strange herbs unto him yet unknown.

"John Yates: I must of force confess that you do hit the nail on the head, but since my hap is so fortunate as to meet with you both and that now in this pleasant morning I would leave off my former determined purpose and require you to enter into some talk of surgery.

"Tho. Gale: Your request is honest and reasonable and therefore not to be denied.

"John Field: We were about the like thing whenas you saluted us, wherefore renewing our first talk we will accomplish your desire."

The trio then discuss the writers on surgery, the etymology of the word, and the low state into which surgery had fallen. They agree that the operation of trephining is satisfactory, and Gale says: "In my judgement the trepan is most necessary and of an excellent invention in hurts of the head. For without it where the cranium is fractured, bruised or depressed you shall little prevail." He quotes a case in illustration when "Anno 1559 in Cambridgeshire a servant of one Mr. Wroth riding in the fields, and leading a young horse in a halter tied fast about the arm of the servant, the horse being wild and not broken, starting aside, unhorsed the man and drew him by his arm about a great

field so long that what with striking, what with drawing, haling and pulling, being wearied he stood still until company came and unloosed the halter, and took up the man half dead and conveyed him unto his master's house. Chirurgeons were sent for who finding the servant speechless and without remembrance of any one whom he saw departed and left him for uncurable. Mr. Wroth sent for me and I seeing him speechless and without remembrance conjectured the hinder part of the head to be hurt and smitten of the horse, which I was more certain of when feeling that part I found it soft. Wherefore I, taking off the hair, did first make incision and after that set a trepan on his head and bored cranium through and took out the piece of bone; which done, there issued out much blood, black in colour. The next day following the servant spake and came again to his perfect remembrance and I using things in this cure, as art required, God restored the man in my hands to his perfect health." To this John Yates replies: "This was a worthy cure and this is a noble instrument."

Inflammation and ulcers are then spoken of, and afterwards hernia. John Yates asks: "And what judge you Epiplocele to be?" John Field answers: "I will not only speak of that but also of the other

kinds of Hernia. An epiplocele is a tumour coming when the Omentum falleth into the purse of the testicles. And by the like reason Enterocele taketh its name when the intestines fall into the aforesaid place. And enteroepiplocele followeth when both Omentum and the intestines fall into the scrotum or purse of the testicles. Furthermore Bubonocele happeneth when the Peritoneum is ruptured or wounded by the flanks. Exomphalos is a tumour pertaining to the over-thwart muscles of the Abdomen, which being relaxed there followeth a starting or eminence of the navel." Master Gale cuts short the discussion with the remark; "My brother Yates doth the more readily conceive the differences of these kinds of Hernia for that he hath a peculiar way of curing some of them, especially of Enterocele, wherefore we will no longer stand in uttering the differences of them."

Of fractures Thomas Gale says: "There be two kinds of fractures, a simple fracture and a compound fracture.

"John Yates: What is a simple fracture?

"John Field: A simple fracture is a solution or division of continuity made in a bone without any other affect joined with it.

"John Yates: What is a compound fracture?

"John Field: It is also a solution of unity made

in the bone, having one or more affects to it connected and joined.

"John Yates: How many differences be there of fractures?

"Thomas Gale: You must note that like as there be simple and compound fractures, so in like manner there be differences of fractures both simple and compound. Wherefore let me know of which fracture you would know the difference?"

To which John Yates in assumed humility replies: "I would right gladly understand all the differences, although for want of knowledge I cannot orderly demand of you. Wherefore I pray you first to begin with the differences of simple fractures and then to the compound," which Thomas Gale does at some length.

Then comes the question of the suture and dressing of wounds about which John Yates says: "I pray you let no time herein be lost for loth I were to depart without the knowledge of them and for that you first made mention of stitching I pray you first begin with it." Thomas Gale describes three kinds of suture, and John Field says: "the needle must be long and small, being three square, the eye hollowed in that the thread may the more easily follow." And John Yates sums up the whole matter of the discourse by saying: "I will

Unable to display this page

CHAPTER III

AMBROISE PARÉ (A Greatly Beloved French Surgeon)

1510–1590

AMBROISE PARÉ was amongst the first to make French surgery known to his contemporaries both at home and abroad. Coming of the people he wrote in his native language when his predecessors and contemporaries always used Latin. The bibliography recently published by Miss Janet Doe shows that his works soon became known to the English, Dutch, German, and later to the Japanese. Mainly a surgeon he wrote on midwifery and Monsters whilst his lively accounts in his book of Apologies and Voyages makes most interesting reading. To the general surgeon he is known for having replaced boiling oil in the treatment of wounds by simpler dressings and for the arrest of bleeding by tying the vessels rather than by the use of the red-hot iron. Personally he was greatly beloved by those with whom he was brought into contact. Living at one of the most bigoted courts

in Europe his transparent honesty and friendliness shielded him from the persecution on account of his religion. There are many reasons for thinking that he was a Protestant, but during that dreadful night on St. Bartholomew's Day the King took him into his own apartments to make sure that he escaped the massacre.

TURIN 1536

"At that time I was a fresh water soldier, I had not yet seen wounds made by gun-shot at the first dressing. It is true, I had read in "John de Vigo," in the first book of wounds in general, the eighth chapter, that wounds made by weapons of fire did participate of venerosity, by reason of the powder, and for their cure command to cauterize them with oil of Elders scalding hot, in which should be mingled a little treacle; and not to fail, before I would apply of the said oil, knowing that such a thing might bring to the patient great pain, I was willing to know first, before I applied it, how the other chirurgions did for the first dressing, which was to apply the said oil the hottest that was possible into the wounds, with tents and setons; insomuch that I took courage to do as they did. At last I wanted oil, and was constrained instead

Unable to display this page

like to that which I had obtained by great chance. See then how I have learned to dress wounds made with gunshot, not by books." *Johnson Trans. of Paré, London, 1634, p. 1143.*

He tells the story in a somewhat different manner in his treatise of wounds made by gunshot which was published in 1545.

"In the year of our Lord 1536, Francis the French King, for his acts in war and peace styled the Great, sent a puissant army beyond the Alps, under the government and leading of Annas of Montmorency high constable of France, both that he might relieve Turin with victuals, soldiers, and all things needful, as also to recover the cities of that province taken by the Marquis of Guest General of the Emperor's forces. I was in the King's army the chirurgion of Monsieur of Montejan, general of the foot, the Imperialists had taken the straits of Suze, the Castle of Villane, and all the other passages; so that the King's army was not able to drive them from their fortifications but by fight. In this conflict there were many wounded on both sides with all sorts of weapons, but chiefly with bullets. I will tell the truth, I was not very expert at that time in matters of chirur-

gery; neither was I used to dress wounds made by gunshot. Now I had read in "John de Vigo" that wounds made by gunshot were venenate or poisoned, and that by reason of the gun-powder; wherefore for their cure, it was expedient to burn or cauterize them with oil of elders scalding hot, with a little treacle mixed therewith. But for that I gave no great credit neither to the author, nor remedy, because I knew that caustics could not be poured into wounds, without excessive pain; I, before I would run a hazard, determined to see whether the chirurgions, who went with me in the army, used any other manner of dressing to these wounds. I observed and saw that all of them used that method of dressing which Vigo prescribes; and that they filled as full as they could, the wounds made by gunshot with tents and pledgets dipped in this scalding oil, at the first dressings, which encouraged me to do the like to those who came to be dressed of me. It chanced on a time, that by reason of the multitude that were hurt, I wanted this oil. Now because there were some few left to be dressed, I was forced, that I might seem to want nothing, and that I might not leave them undressed, to apply a digestive made of the yolk of an egg, oil of roses, and turpentine. I could not sleep all that night, for I was troubled

in mind, and the dressing of the preceding day (which I judged unfit), troubled my thoughts; and I feared that the next day I should find them dead, or at the point of death by the poison of the wound, whom I had not dressed with the scalding oil. Therefore I rose early in the morning, I visited my patients, and beyond expectation, I found such as I had dressed with a digestive only, free from veheminence of pain to have had good rest, and that their wounds were not inflammed, nor tumified; but on the contrary the others that were burnt with the scalding oil were feverish, tormented with much pain, and the parts about their wounds were swollen. When I had many times tried this in divers others, I thought thus much, that neither I nor any other should ever cauterize any wounded with gunshot. When we first came to Turin, there was there a chirurgion far more famous than all the rest in artificially and happily curing wounds made by gunshot; wherefore I laboured with all diligence for two years time to gain his favour and love, that so at the length, I might learn of him, what kind of medicine that was, which he honoured with the glorious title of Balsam, which was so highly esteemed by him, and so happy and successfull to his patients; yet could I not obtain it. It fell out a small while after

that the Marshall of Montejan the King's Lieutenant-General there in Piedmont died, wherefore I went unto my chirurgion, and told him that I could take no pleasure in living there, the favourer and Maecenas of my studies being taken away; and that I intended forthwith to return to Paris, and that it would neither hinder, nor discredit him to teach his remedy to me, who should be so far remote from him. When he heard this, he made no delay, but presently wished me to provide two whelps, 1 pound of earth worms, 2 pounds of oil of lilies, six ounces of Venice turpentine, and one ounce of Aqua vitae. In my presence he boiled the whelps put alive into that oil, until the flesh came from the bones, then presently he put in the worms, which he had first killed in white wine, that they might so be cleansed from the earthy drosse wherewith they are usually replete, and then he boiled them in the same oil so long till they became dry, and had spent all their juice therein: then he strained it through a towel without much pressing; and added the turpentine to it, and lastly the aqua vitae. Calling God to witness, that he had no other Balsam, wherewith to cure wounds made with gun-shot, and bring them to suppuration. Thus he sent me away as rewarded with a most precious gift, re-

questing me to keep it as a great secret, and not to reveal it to any." *Paré, Johnson's Trans., p. 409, 1634.*

LIGATURE OF ARTERIES

"Verily I confess, I formerly have used to staunch the bleeding of members after amputation, after another manner than that I have a little before mentioned. Whereof I am ashamed, and agrieved; but what should I do? I had observed my masters whose method I intended to follow, always to do the like; who thought themselves singularly well-appointed to staunch a flux of blood, when they were furnished with various store of hot irons and caustic medicines, which they would use to the dismembered part, now one, then another, as they themselves thought meet. Which thing cannot be spoken, or but thought upon without great horror, much less acted. For this kind of remedy could not but bring great and tormenting pain to the patient, seeing such fresh wounds made in the quick and sound flesh are endued with exquisite sense. Neither can any caustic be applied to nervous bodies, but that this horrid impression of the fire

will be presently communicated to the inward parts, whence horrid symptoms ensue, and oft times death itself. And verily of such as were burnt, the third part scarce ever recovered, and that with much adoe, for that combust wounds difficultly come to cicatrization; for by this burning are caused cruel pains, whence a fever, convulsion, and oft times other accidents worse than these. Add hereunto, that when the eschar fell away, oft times a new haemorrhage ensued, for staunching whereof they were forced to use other caustic and burning instruments. Neither did these good men know any other course; so by this repetition there was great loss and waste made of the fleshy and nervous substance of the part. Through which occasion the bones were laid bare, whence many were out of hope of cicatrization, being forced for the remainder of their wretched life to carry about an ulcer upon that part which was dismembered; which also took away the opportunity of fitting or putting too of an artificial leg or arm instead of that which was taken off.

"Wherefore I must earnestly entreat all chirurgions, that leaving this old, and too too cruel way of healing, they would embrace this new, which I think was taught me by the special favour of

the sacred Deity; for I learnt it not of my masters, nor of any other, neither have I at any time found it used by any. Only I have read in "Galen," that there was no speedier remedy for staunching of blood, than to bind the vessels through which it flowed towards their roots, to wit, the liver and heart.

"This precept of "Galen," of binding and sewing the veins and arteries in the new wounds, when as I thought it might be drawn to these which are made by the amputation of members, I attempted it in many; yet so that at first in my budding practise thereof, I always had my cauteries and hot irons in a readiness, that if anything happened otherwise than I expected in this my new work, I might fetch succour from the ancient practice, until at length confirmed by the happy experience of almost an infinite number of particulars, I bid eternally adieu to all hot irons and cauteries which were commonly used in this work. And I think it fit that chirurgions do the like. For antiquity and custom in such things as are performed, by art ought not to have any sway, authority or place contrary to reason, as they oft times have in civil affairs; wherefore let no man say unto us, that the Ancients have always done thus." *Paré, Johnson's Trans. 1634, p. 462.*

TREATMENT OF MALINGERERS

"Anno Dom. 1561 there came to Paris a lusty, stout and very fat Norman woman, being about some thirty years old, who begging from door to door, did cast to meet with rich women, and very familiarly and pitifully would relate unto them her misfortune, saying she had a snake in her belly, which crept in at her mouth as she slept in an hemp land: she would let one feel her stir, by putting their hand unto her belly, adding also that she was troubled day and night with its incessant gnawing of her guts. The novelty of this sad chance, moved all to pity and admiration, wherefore as much as they could, they assisted her with means and council. Amongst the rest, there was a woman of great devotion and charity, who sending for Dr. Hollerius, Chevall, and me, asked us if this snake could by any means be gotten forth. Hollerius gave her a strong purgation, hoping that by stirring up the expulsive faculty, the serpent might be cast forth, together with the noxious humors. But this hope had no such success. Wherefore whenas we met again, we thought it fit to put a Speculum matricis into the neck of her womb, so to see if we could discern either her head or tail: but I making large dilatation of her

womb, could see no such thing, only we observed a certain voluntary motion whereof she herself was the author by contracting and dilating the muscles of the lower belly. Which whenas we had observed, perceiving the deceit and imposture, we thought good so to terrify her and make her confess the deceit, to tell her that she must take another, but that a more strong purgation, that what we could not do by the former, as more gentle, we might attain to by the latter, as far stronger. She dissembling all fear, and conscious of her craft and dissimulation, after we were gone in the evening, packing up her stuff, and a great deal more than her own, she secretly stole away, not bidding her hostess farewell: and thus at length the fraud was apparent, to the loss of the honest gentlewoman. I saw this baggage, six days after, sitting lustily upon a Packhorse, at the gate Montmartre, and laughing heartily with such as brought sea-fish to town; and she was returning (as it was most likely) into her country, seeing her cozenage was discovered here." *Paré, Johnson's Trans. 1634, p. 994.*

THE VOYAGE OF PARPIGNAN, 1543

"I saw one thing of great remark, which is this: that a soldier in my presence gave to one of his fellows a stroke with an halbert upon the head, penetrating even to the left ventricle of the brain, without falling to the ground. He that stroke him said, he had heard that he had cheated at dice, and that he had drawn a great sum of money, and that it was his custom to cheat; I was called to dress him, which I did as it were for the last, knowing well that he would quickly die: having dressed him he returned all alone to his lodging, which was at least two hundred paces distant: I bid one of his companions send for a priest to dispose of the affairs of his soul; he helped him to one who stayed with him to the last gasp. The next day the patient sent for me by his she friend in a boy's apparel to come to dress him, which I would not do, fearing he would die under my hands; and so put it off, I said I must not take off the dressing till the third day, by reason he would die though he were never touched. The third day he came staggering, and found me in my tent accompanied with his wench, and prayed me most affectionately to dress him: And shewed me a purse wherein he had an hundred or six score

pieces of gold, and that he would content me to my desire; for all that, yet notwithstanding I left not off to defer the taking off his dressing, fearing lest he should die at the same instant. Certain gentlemen desired me to go dress him, which I did at their request, but in dressing him he died under my hands in a convulsion. Now this priest accompanied him until death, who seized upon the purse for fear lest another should take it, saying he would say Mass for his soul. Moreover he furnished himself with his clothes, and with all the rest of his things. I have recited this history as a monstrous thing, that the soldier fell not to ground when he had received this great stroke, and was in good senses even till death." *Johnson Trans. of Paré, London, 1634, p. 1145.*

TREATMENT OF THE WOUNDED

"In the year 1536, the great King Francis sent a great army to Turin to recover the cities and castles, which the Marquis of Guest, Lieutenant general of the Emperor had taken: where the high Constable of France the great master, was Lieutenant General of the army, and Monsieur de Montien Colonel General of the foot, of which I was then Chirurgion. A great part of the army

arrived in the country of Suze; we found the enemy which stopped the passage and had made certain forts and trenches, insomuch that to hunt them out and make them leave the place, we were forced to fight, where there were divers hurt and slain, as well of the one side as of the other: but the enemies were constrained to retire, and get into the Castle, which was caused partly by one Captain Ratt, who climbed with divers of the soldiers of his company upon a little mountain; there where he shot directly upon the enemies, he received a shot upon the ankle of his right foot, wherewith presently he fell to the ground; and said then, Now is the Rat taken. I dressed him, and God healed him. We entered the throng in the city, and passed over the dead bodies, and some which were not yet dead, we heard them cry under our horses' feet, which made my heart relent to hear them. And truly I repented to have forsaken Paris to see so pitiful a spectacle. Being in the city, I entered into a stable thinking to lodge my own, and my man's horse, where I found four dead soldiers, and three which were leaning against the wall, their faces wholly disfigured, and neither saw nor heard, nor spoke; and their clothes did yet flame with the gunpowder which had burnt them. Beholding them with pity, there happened

to come an old soldier, who asked me if there were any possible means to cure them, I told him no: he presently approached to them, and gently cut their throats without collar. Seeing this great cruelty I told him he was a wicked man, he answered me that he prayed to God, that whensoever he should be in such a case, that he might find someone that would do as much to him, to the end he might not miserably languish. And to return to our former discourse, the enemy was summoned to render, which they soon did, and went out, their lives only saved, with a white staff in their hands; the greatest part whereof went and got to the Castle of Villane, where there were about 200 Spaniards; Monsieur the Constable would not leave them behind, to the end that the way might be made free. This Castle is seated upon a little mountain, which gave great assurance to them within, that one could not plant the Ordnance to beat upon it, and were summoned to render, or that they should be cut in pieces; which they flatly refused, making answer that they were as good and faithful servants to the Emperor as Monsieur the Constable could be to the King his master. Their answer heard, they made by force of arm, two great cannons to be mounted in the night with cords and ropes, by the Swissers and

Unable to display this page

CHAPTER IV

JOHN HALLE (A Hater of Quacks)

1529–1568

JOHN HALLE belonged to the band of educated Tudor surgeons who raised their occupation from a trade to a profession. Halle practised at Maidstone where he was a stout Protestant and was imprisoned in 1554 for being engaged in Wyatt's Rebellion. He died in 1568 and was buried in All Saints Church, Maidstone. His all too short life was spent in a war against the quacks who overran England. He wrote verse, translated the Book of Proverbs and the Psalms and printed an English translation of Lanfrank's Surgery from an English manuscript from a French version.

TREATMENT OF A QUACK

"Item in the year 1562, there came to the town of Maidstone an old fellow, who took upon him to heal all diseases, as a profound physician, whom (for because men had been so deluded by divers

former deceivers) I caused to be examined before the officers of the said town. And when he was asked his name, he said, John Bewly; secondly, where he dwelt, and he answered at London, in the Old Baily, against Sir Roger Chamley. Thirdly, if he were a physician, he said yea. Fourthly, where he learned that art and he said by his own study. Fifthly, where he studied it, he answered, in his own house. Sixthly, what authors he had read, he said, Eliote, and others. Seventhly, we asked what other and he said he had forgotten. Eighthly, we asked him what were the names of Eliote's books, he said he remembered not. Then we brought him an English book to read, which he refused; but when he was commanded to read, he desired us to be good to him, for he was a poor man, and indeed could not read, and said that he intended not to tarry there, but to repair home again. This being done on a Sunday, after even-song, his host was bound for his forth coming the next day, when upon his humble suit he was let go; being warned with exhortations to leave such false and naughty deceits.

"Farther in the same year, one William, a shoe-maker, came into Kent, pretending to be very cunning in curing diseases of the eyes; and being brought to a friend of mine, to have his judgement

in one eye, whereof the sight was weak; first putting them in much fear of the eye, he at length promised to do great things thereto. But the friends of the party diseased desired me first to talk with him, to understand his cunning; which I, at their request, did, at a time appointed, and asked him if he understood what was the cause of his infirmity. He said he could not tell, but he would heal it he doubted not. Then I asked him whether he were a surgeon, or a physician; and he answered, no, he was a shoemaker, but he could heal all manner of sore eyes.

"I asked him where he learned that; he said that was no matter. Well, said I, seeing that you can heal sore eyes, what is an eye? whereof is it made? of what members or parts is it composed? and he said he knew not that.

"Then I asked him if he were worthy to be a shoemaker, or to be so called, that knew not how, or whereof a shoe was made? he answered no, he was not worthy. Then, said I, how dare you work upon such a precious and intricate member of man as is the eye, seeing you know not the nature thereof? and why, or by what reason, it doth see more than a man's nose, or his hand doth? He answered, that though he could not tell this, yet could he heal all manner of sore eyes. And that

where as master Luke of London, hath a great name of curing eyes, he could do that which master Luke could not do, nor turn his hands to. Thus bragged this proud varlette, against and above that reverent man of known learning and experience.

"And I said I thought so, for Master Luke, said I, is no shoemaker. Well, said he, I perceive you do but scorn me, and flung out of the doors in a great fume, and could not be caused to tarry and drink by any entreaty, neither have I since that time heard anything of him." *An Historicall Expostulation by John Halle, London, 1565, Bbb. II.*

"In the year of our Lord, a thousand five hundred and three score, one Valentyne came into a parish in the weld of Kent, called Staplehurst; whereas he changed his name, calling himself master Wynkfylde, affirming himself to be the son of a worshipful knight of that name. This abominable deceiver made the people believe that he could tell all things present, past, and to come; and the very thoughts of men, and their diseases, by only looking in their faces. When any came to him with urines (which commonly in the country they bring in a stone cruse), he made them believe that only by feeling the weight thereof, he would

tell them all their diseases in their bodies, or without; and otherwhile made them believe that he went to ask council of the devil, by going a little aside, and mumbling to himself, and then coming again, would tell them all, and more to; for what care of shame or evil have these hell hounds who see their abominations; but even as the ape turneth his filthy parts to every man's sight, so shame they not to acknowledge themselves to have conference with the devil, that so yet all wise men may know their deeds to be all devilish, wherein the vain opinion of some (though not of the wisest sort), helpeth them not a little, who esteem those damnable arts to be high points of learning. Oh ethnike madness!

"This beastly beguiler so incensed in short space the vain minds of the rude and wavering multitude of people, that he was sought unto, and esteemed more a great deal than God (oh heathenish and idolatrous people! not much unlike this was their outrageous madness to their peevish pilgrimages, wherewith in times past they were most miserably bewitched). Yea such a wonderful fame and brute went abroad of his doings, that some of the very worshipfulls of those parts were stricken with admiration, and desire to seek to him, to

know many good morrows; whereof also he would not a little brag and boast.

"But as time revealeth all things, so this devilish beast in short time was known in his right kind and name; and that he had three wives living at that present, of which the first lived very poorly and miserably in Canterbury; the second, after she knew his wickedness, departed from him, and married after with a priest; the third, which he at that present had, he married at Westminster, as I was credibly informed, being there a rich widow. But now after this villainy was known, by his first wife coming to Staplehurst, he ran away from her also, leaving her desolate, undone, and in much misery, for he had spent all her substance by riotous fare; for he was reported to fare at his table like a lord, and was served as finely as a prince; but such shameful deeds can never be without wicked end, at the least at God's hand, though it be neglected of the magistrates.

"This last wife being sent on his errand to Maidstone, to an apothicary's widow for certain drugs, chanced to forget some of their names, wherewith the women being both not a little troubled, the apothicary's widow asked wherefore her husband did not write for his things, whereunto his woman answered that Master Wynkfylde

was a right Latinist, for he could write no English. By this ye may perceive he was a well learned man.

"This woman being as I said, left desolate, married after with one Thomas Riden, who was his man, who went together to Westminster, there to dwell, whither not long after, this Wynkefield came, minding again to seduce the woman to follow him, as before she had; who so detested his late beastly usance, that she complained him so to the archbishop of Canterbury, and other of the queen's majesties honorable council; that he was long imprisoned in the gate house, and for his wickedness sore punished. Yet in the end being delivered, he ceased not any whit to use his old practise, for he came immediately to Robardesbridge, in Sussex, where he wrought the like wickedness as afore, and being there espied, within a while with divers wicked facts, he removed, putting on a brazen face, and came again into Kent, to Staplehurst, where he freshly renewed the use of his odious feats, for the which master Bisey, person of Staplehurst, caused him to be cited of the ordinary to the spiritual court, as an adulterer, and a worker of devilish and magical arts. Wherefore he removed two miles from thence, to a parish called Marden, thinking himself thereby the more safe, but the law notwithstanding, pro-

ceeded so against him, that he was there upon his contempt excommunicated; and yet never left his old fashions. He spent in his house weekly six pounds (as divers honest men reported) in meat and drink, with such resort and banqueting, as it was a wonder to see, whereby he not a little augmented his fame; the people resorting to him far and nigh, for he would tell them such wonders, that all had him in admiration. But especially, he was cunning to enchant women to love, and did for rewards, diverse feats in such cases; lastly, he began to work properly for himself." *London, 1565, Aa. IIII.*

CHAPTER V

WILLIAM CLOWES (A Good and Bold Surgeon; Exposer of Quacks)

1544–1603

WILLIAM CLOWES, a Warwickshire man by birth, served, as was not then unusual both in the army and in the navy. In 1563 he took a part in the Harve Expedition under the Earl of Warwick; in 1570 he acted as a naval surgeon, and in 1586 he was with the Earl of Leicester in the Low Countries. He was surgeon at St. Bartholomew's Hospital from 1575–86; in 1596 he was surgeon to Queen Elizabeth. He died, perhaps of plague during the great London epidemic in 1603. Clowes was a good and bold surgeon who did not believe that gun-shot wounds were either poisoned or burning and to prove it he puts his belief to the test of experiment. Like Gale and the other surgeons of his period he tried to put down quackery and gives many examples of the abuses engendered by them.

A NOTORIOUS QUACK

"Be it known that the third day of April 1574 Valentine Rasworme did take upon him deceitfully to cure for the stone in a bladder one Helen wife of M. Curraunce, musician dwelling in London, in the presence of divers honest persons did attempt with his instruments to take out of her bladder a stone. But finding none there privily he took a stone out of the pocket of his hose and conveyed it into a sponge holding it for a space in a basin of hot water and subtlily and slyly forced it in pudendo, yet presently he was espied and charged there withall that they did plainly perceive and see him take that stone out of the pocket of his hose and did put it into the sponge, etc. But Valentine stoutly denied it notwithstanding it was after approved true both by depositions and these signs following, for within a very short time after she sent unto him declaring how she was still in her old accustomed pain and a great deal worse than ever she was before he meddled with her. Therefore she did desire him for God's sake to send her something that would ease her of her pain, for as much as he had received of her husband M. Curraunce £10 in part of payment for her cure according to their bargain which £10

Maister Curraunce gave unto him with one hand and Valentine delivered him again the stone which he took out of his pocket with his other hand. The rest of his devilish dealings with her was most abominable.

"Well afterward he sent unto her a powder which she received at his direction, but very shortly after her pain was much thereby increased abiding as it were night and day in a gulf of misery; for after the receipt of this powder she could never void any urine.

"And moreover the powder did so blister her mouth, her nose and face and likewise the inward parts of her body that she never afterwards received any sustenance but died most pityfully by his wicked dealing. Then she was opened where it did manifestly appear that she never had a stone in her bladder nor any matter whereof the stone is engendered; neither any offence in the bladder or parts thereabouts that then could be conjectured saving that himself most vilainously had committed and done, but only in her kidneys and there was all the cause that could then be found of all the whole trouble of her sickness.

"He cosened also one Wilfry Joye, citizen and draper of London whom he did cut for the stone in the bladder but when he perceived he could

find none there he again took a stone out of the pocket of his hose and conveyed it into a sponge after the same manner and order as I have aforesaid and did subtily and craftily put it into the wound which he had made to have taken out a stone. And he was here again espied and presently charged there-withall. So this man was by him also cosened of his money and likewise spoiled for his pain was not by him anything at all ceased but increased and so he lived but a very small time afterward.

"Moreover, he promised to cure one Master Castelton then being a scholar of Cambridge, of an impediment in his eyes. He had some sight thereof that he was able to discern many things when this Valentine Rasworme took him to cure, but within a very short time after, Valentine by his rustical dealings put out his eyes clean and so deprived him of all his sight. And then when Master Castelton perceived that Valentine could not perform his cure but that he was by him thus spoiled then he did arrest him, first for his money, the which he recovered again, but for his great hurt he was fain to put it up with silence, for that presently after Valentine did bid him and all the rest, bene valere (he arrested Valentine in the Royal Exchange where he did display his banners

and wares and being in the midst of his pontificalibus).

"Likewise he took upon him to search Mistress Backhouse of London and Mistress French of Honslow; Master Foster Aldermarch and one Byrch of Chesham; Richard Gill of Hastings; Cornelius Garatson of Mark Lane; John de Cumbers; John Marse of London; John Douse; Father Ireland; Francis Conyers, Master Wattonsman of London; a gentleman lying in Valentine's lodging; Master Dummer's man a goldsmith in Cheapside; John Breede who all died under his hand.

"Then this worker of mischief hearing and seeing his frauds and falsehoods detected and also hearing and seeing the new pilory, set up against the Royal Exchange and perceiving that the common voice of the people went that the new pilory was erected and set up for Valentine Rasworme found that his cake was down for all went against the hair upon a sudden hid his head and privily ran his ways and it appears to me that he was a great bugbear, a stinging gnat, a venemous wasp and a counterfeit crocodile." *Clowes' "De Morbo Gallico," London, 1585, Fo. 10–13.*

The use of such intemperate language brought Clowes into trouble on more than one occasion.

The minutes of the Barber-Surgeons Company record that on 28th February 1576. "Here was a complaint against William Clowes by one Goodenge for that the said Clowes had not only misused the said Goodinge in speech but also most of the masters of the Company with scoffing words and jests and they all forgave him here openly in the court and so the strife was ended upon condition that he shall never so misuse himself again and bonds were caused to be made to that effect." But in the very next year on the 25th March 1577. "Here at this court was a great contention and strife spoken of and ended between George Baker and William Clowes for that they both contrary to order and the good and wholesome rules of this house misused each other and fought in the fields together but the Master, Wardens, and Assistants wishing that they might be and continue loving brothers pardoned this great offence in hope of ammendment."

The next extract shows him in a better light.

A GRATEFUL PATIENT

"The Cure of a Certain Man that was thrust through his Body with a Sword which did enter first under the cartilage or gristle, called of the learned Anatomists, Mucronata Cartilago, etc.

(sternum) . The point of the sword passed through his body and so out at his back in such manner that he which wounded the man did run his way and did leave the sword sticking in his body; so the wounded man did with his own hands pull out the sword whom after I cured as shall be declared etc.

A special note or observation of a certain dangerous and desperate cure worthy of admiration which I cannot let pass of a certain traveller into the East and West Indies, he being a very strong and valliant man, who (as I said) received a wound through his body that entered in under mucronato cartilago which by the wonderful work of God the sword escaped the liver, stomach, and the intestines or guts, neither any evil accidents happened unto him all the time of his cure, but only the grudging of the fever which was shortly prevented with bleeding and loosing of the belly by soluble glisters. Immediately after the hurt I was brought unto this cure and also one Maister Doctor Wotton; but after I did behold the manner of his hurt and seeing the weapon so embrued with blood I did in my mind greatly lament the miserable estate he was in and I told those that were in presence that I greatly doubted there was no way of cure, but that death would presently follow; and so in

truth I refused to dress him supposing he would die under my hand. Then the wounded man desired me, as ever I loved a man, that I would dress him and take him in cure, for (said he) my heart is good although my wound be great. Then I called to my rememberance that Celsus (a learned man) counselleth us that in no wise we should meddle with him that cannot be preserved nor to deal with him that is slain already. Yet to countervail this I had read in divers other good authors that we ought to attempt all that could be done either by art or reason, but first merely warely to foretell what danger the patient is in before you shall either make or meddle with him that ye may defend yourselves from slander of evil speakers; for (say these excellent men) many by a wonderful marvellous manner do escape death and are cured, whereas if we shall leave the wounded man destitute of all aid and help and then he die we shall worthily be esteemed wicked and without all charity and humanity. I suppose no man that feareth God will willingly do that which redoundeth unto his patient's hurt and his own discredit, but we are in these days so embayed with the slanders of blind buzzards and vaunting varlets who with the fragments or scrapings of their beggarly practices do steal more credit for

the curing of a blain or a boil, a cut finger or a kibed heel than a right skillful and honest artist can or shall do with all the best cures he hath done all the days of his life.

"But to return, after much entreating I presented myself unto this cure and then with two short tents artificially made, the one before and the other behind his back which I applied into the wound with Galen's powder mixed with hare hairs and the whites of egg and with pledgets upon the said tent and defensives round about the wound both behind and before; and so with artificial rolling and bolstering he rested. Then forthwith I was counseled by the said doctor and others to give him some excellent wound drink such as by our own practise we had approved. But I do confess this wounded man was cured by this drink. And five years after he was made whole he did come to London, partly to see me and to give thanks in the presence of Maister Baily, Maister Beden with others, and there again did show the places that was wounded both where the sword went in and where it did come forth. Since which time I did never hear of him, neither do I know whether he liveth or not." *Clowes Approved Practise. London, 1588. Pp. 4 & 5.*

CHAPTER VI

MAISTER PETER LOWE (Founder of the Glasgow University)

1550–1610

MAISTER PETER LOWE who describes himself "Scottishman" has a double claim to rememberance. Late in November 1599 a charter was granted making James VI of Scotland to "Maister Peter Low our Chirurgiane with the assistance of Mr. Robert Hamiltone professoure of Medecine," giving them power to call before them within the burgh of Glasgow all persons professing or using the art of surgery. The surgeons were to be examined and licensed: the physicians were called upon to produce their university testamurs; apothecaries were controlled; and the very existence of barbers ignored. The Charter thus followed closely upon the lines of contemporary medical teaching in France. In 1597 he published in London a Discourse on the whole art of surgery and for 22 years he practised in France and Flanders. He seems to have taken a surgical qualification either in Paris

or the University of Orange near Montpellier. He described himself as Doctor in the Faculty in Paris and ordinary surgeon to the French king and Navarre. Lowe was in London in 1596 and welcomed by the English surgeons who evidently thought highly of his attainments. George Baker – surgeon ordinary to Queen Elizabeth – writes in commending his book:

> Stay Passenger and View this stone
> For under it lyis such a one
> Who cuired many whil he lieved
> Soe gracious he noe man grieved
> Yea when his physicke force oft failed
> His plesant purpose then prevailed
> For of his God he got the grace
> To live in mirth and die in peace
> Heavin hes his soul, his corps this stone
> Sigh passinger, and soe be gone."

He died in 1610 and his tomb with a long epitaph can still be visited in the church-yard of Glasgow Cathedral.

THE SACRED ANATOMY

Lowe says describing old age "This last age is set down in Ecclesiastes XII – Be thou wise Solomon. With such a brave allegory that nothing in

Unable to display this page

is to say, while the eyes have not lost their sight; nor the clouds returne not after the rain, which is, when the eyes have long wept, there passeth before them gross thick vapours like clouds. When the keepers of the house shall tremble: which is, when the arms and hands which are given for the defence of men are failed. And the strong men shall bow themselves; which is, the legs whereupon the whole body stands doth bow and becometh weak. The grinders shall cease: that is, the teeth which breaketh and grindeth the meat shall be decayed. And they shall wax dark which look out by the windows: that is, when the eyes are overwhelmed with some cataract or tay which covereth the prunall called the window of the eye. The door shall be shut without by the base sound of the grinding: that is, the chaps and lips which cannot well open, and the channels whereby the meat doth pass groweth narrow. And he shall rise at the voice of the bird, that is, old people cannot sleep but do rise at the crow or calling of the Cock. And all the daughters of Singing shall be abased: which is, when the voice doth decay. The Almond tree shall flourish; that is, the head and beard of old people becometh all white. The Grasshopper shall be a burthen; which is, when the legs groweth great, swelling, and tumified with abundance of cold watery humors. Concupiscence shall be driven

away; which is to say, old people shall have little or no appetite to meat. When the Silver cord is lengthened: that is, when the marrow that goeth along the back groweth supple and boweth the back forward. When the Golden Ewer is broken; that is, the heart which containeth the arterial blood and vital spirits shall be weakened. The Pitcher broken at the fountain; that is, the great vein Cave (vena cava) that may no more shoot blood from the liver which is the Spring, that humecteth the whole body in such sort that serveth no more than a broken vessel. The wheel broken at the Cistern, that is, the nerves and bladder both grow so weak that they can no more retain the water. When all these things do arrive the dust returneth to the earth as it was, which is, when the material body returneth to the earth; and the Spirit shall return to God that gave it. These be the best descriptions that can be given of old age with their times and years according to the opinion of our ancients." *Lowe's Discourse on Chyrurgerie. London, 8. Vo. Ed. III. Pp. 30–32.*

OF THE LITTLE HARD TUMOR IN THE FEET COMMONLY CALLED CORNS

"Those hard callous tumours which commonly posess the toes and soles of the feet but chiefly

the joints and under the nails are called corns and in Latin Clavus, of the which there are three kinds, to wit, corpus, callus, and clavus. The cause is chiefly in wearing of straight shoes, superfluous excrements which cannot avoid, so remaineth in a nervous part and requireth a certain hardness according to the nature of the part where they are. The signs are evident to the sight. The judgments is great dolour with empassing to walk or travel, they happen sometimes after contusion. The cure is that those that are little and not deep may with a sharp bistoury be cut at the root; but before they be cut I use to apply to the Corn a little piece of fresh Veal of the bigness of six pence and tied to the corn a whole night, it doth mollify it and maketh it more easy to be cut, which being done, I fill up the whole with a little of that sand which ordinarily doth rest in the bottom of the Chamber pot, it leteth the growing of it again being finally taken out at the root. Lebot commendeth much the applying of a Cow's gall which maketh it to fall out at the root; some after the corn be softened, either by fomentation or piece of Veal do apply powders made of the root of arista bovis, otherwise little roots roasted under the ashes and beaten with axunge and applied to the corn which maketh it to fall in three or four days, then fill up the hole

with a little wax or green coprys or a little of that sand which remaineth in the ground of the urine. In cutting of it go not too deep amongst the ligaments and tendons for the great accidents that sometime do follow as inflammations, convulsions and gangrene by the which some have lost their toes and feet. By cutting a part of it the root groweth more large so it is best to foment the part with water of Mallows and Althea or water wherein Tripes have been sodden: thereafter use Gum Ammoniac dissolved in Aqua vitae and lay on it; or this which I do use made of like quantity of turpentine, wax and verdigris called Aerugoaris and apply on the part; also red wax, semper vivum and a little aerugoaris mingled together and apply; and so we end this book and shall follow out to entreat of wounds." *Peter Lowe. A Discourse on the Whole Art of Chyrurgerie. London, 8vo. Page 275 Ed. III, 1634.*

THE MANNER OF AMPUTATION

"You shall go to the amputation of the member in this manner. The friends being first advertised of the danger because that often times death ensueth: for the which cause the learned Celsus calls it a miserable remedy, so that I think the expert

chyrurgions should assay all remedies before they come to that extreme remedy which is done with great danger chiefly in doing of the operation, and that either for flux of blood, fear, faintness and swooning after it is done. Likewise there happeneth often fevers, reveries, extreme dolours, convulsions, cold sweats, and oft times sudden death; for the which the patients and friends should be foreseen of the danger which may happen and that they should advise whether (upon hope of recovery) it be more expedient to assay that extreme remedy or otherwise to refer it into the hands of the Lord. Yet by our daily practice the most part do use it because in so doing there is some hope of recovery: and in not so doing there is nothing to be expected but sudden death and better it is to lose one member than the whole body. As concerning the place of amputation there is diversity of opinions.

"Hippocrates and some others councileth cutting the joint alleging it to be more easy to be done for in so doing the marrow is not discovered as in other parts nor the flux of blood so great. Others think best to cut four inches from the joint either above or under according to the circumscription of the putrifaction which is both more easy and surer than in the joint.

"For these causes and divers other circumstances which might be here alleged I advise to make the incision four inches from the joint in all amputations, except only when the mortification or riving of the bone end in the joint, then it must be cut in the joint, chiefly the joint of the knee; always it is hard to cicatrise and heal by reason of the end of the bone is spongy and humid so the loather do conglutinate; but wheresoever you make your amputation remember to mark it well with ink or other and to cut rather a little of the whole than leave any portion of the infected. If any of the infected remain it corrupteth the rest and so requireth new amputation, as I have often seen.

"The place of amputation being so remarked we situate the sick in a fit place having respect both to the nature, quality of the part and our own commodity. For this purpose some do set the sick on a bed side for fear of syncope. I myself use only a chair which I find most commodious both for the sick and chyrurgion because it may be commodiously placed; which done, you shall have two men hold and attend upon the patient, then the chyrurgion shall command the sick to bend out and extend that member to the end the skin, veins, arteries, and nerves may be more lengthened and after the amputation may be more apparent

to be knit or cauterized. That being done the chyrurgion shall pluck up the skin and muscles as much as he can, thereafter he shall take a strong ribbon and bind the member fast above the place of the member three inches above where the amputation shall be.

"The usage of this ribbon or band is diverse. First, it holdeth the member hard and fast so that the instrument or incising knife may cut more surely. Secondly, that the feeling of the whole parts may be stupified and rendered insensible. Thirdly, that the flux of blood may be stayed. Fourthly, it holdeth up the skin and muscles which must cover the bone after it be cut, and so it maketh it more easy to heal. The bandage then being thus made we cut the flesh with a razor or incising knife which must be somewhat crooked to the form of a hook or a half moon.

"The flesh then being so cut to the bone the said bone must be diligently rubbed and scraped with the back of the said knife, which back must be made purposely for that effect to the end the periost which covereth the bone may be less painful in the cutting of the bone. Otherwise it teareth and riveth with the same, so causeth great dolour; also it letteth the cutting although the bone have no feeling of itself. This being done you must

saw the bone with a sharp saw; then loose the ligature, draw down the skin and cover the bone in all the parts; and if there be great putrifaction let it bleed a little for that dischargeth the part and so is less subject to inflammation; then one of the assisters shall put the extremeties of his fingers on the great vein and arteries to stay them from bleeding till the chyrurgeon either knit or cauterize them one after another." *Peter Lowe. A Discourse on the Whole Art of Chyrurgerie. Ed. II London, 1612. P. 89.*

OF THE HERNIA INTESTINAL

"This kind of rupture is when the guts fall down in the cods either through ruption or enlarging of the peritoneum where the spermatic vessels do pass. In this disease there is great abuses committed by a number of unskillful ignorant people void of all good conscience and fear of God, who for every simple kind of rupture make incision and cut away the production of the peritoneum and stone; if the descent be on both sides they cut off both the stones which renders a man sterile and causeth the hair of the beard to fall; and if young ones be cut on both sides they have no beard at all, besides they be ever feeble and small voiced like unto

women. Besides that often time in cutting the sick dieth chiefly when the dilatation is great. Sometimes the intestine sticketh to the peritoneum which they knit all together and cut away the production; after which the sick avoideth the excrements at the mouth and dieth most miserably. What shall we that are Christians think of those ignorants who altogether cut away all those parts without hope of recovery and that for a little piece of money. Such should be severely punished and not to have company with Christians. Yet perhaps some of these deceivers will say that I speak from malice because I cannot do that operation; for answer to such I have often times seen that operation done and have divers times done it myself the which I do now repent in committing such a heinous sin. For satisfaction of malicious people who may perhaps think as those deceivers do, I will in few terms set down the form of that operation. First the body must be purged and bleed if need require; the night before the work, the patient must eat little; the next morning about eight or nine hours the sick shall be laid upon a board in such sort that his head and shoulders be lower than his body, so the intestine shall reduce more easily, thereafter the sick his legs and thighs must be tied fast to the said form or table as also his

hands, then reduce the intestine, omentum or both within the belly, which being done, someone shall hold fast his two fingers upon the hole of descent that it fall not, then the incisor shall stand at the side of the sick and grip the stone of the sore side between the three foremost fingers of the left hand, put it up almost to the hole of the descent and make it appear upon the point of the middest finger holding it fast between the other fingers, then make your incision with a bistoury or razor upon the stone that is two inches large or thereabouts. Some do use to make this incision lower down in the cod, next pull out the testacle and separate the didim from the scrotum till such time as you come to the hole of descent taking heed in over sore pulling in case the nerves and muscles, Cremasters, receive inflammation or convulsion and death; being so conveyed near the hole of descent you must with a strong thread in four fold well waxed knit the production so fast as may be, to the end it let the filling from the testacle within an inch of that knot, cut off the production with the testacle, then make a little incision in the nether part of the scrotum that the matter may evacuate more easily, then apply defensives and astringents, stay the flux of blood by cauters actuals then use embrocations and compressives in oxe-

crate, with digestives and mundificatives till the thread fall. Thereafter use incarnatives and conglutinatives as in other wounds. If the intestine or omentum do fall in the inner side do the like. Some use in place of this ligature to sew the production with a needle and thread, thereafter doth cauterize the seaming which oftentimes for haste or other violence doth either slip or break, whereof come evil symptoms and often death." *Peter Lowe. A Discourse on the Whole Art of Chyrurgerie. Ed. II. London, 1612. Pp. 247–251.*

CHAPTER VII

JOHN WOODALL (Surgeon-General of the East India Company)

1570–1643

JOHN WOODALL was the link by which the great tradition of Elizabethan surgery was transmitted to the surgeons of the Commonwealth and Restoration. Like the Elizabethan surgeons Woodall had seen service in the field. Born about 1570 his father was an Englishman and his mother a Welshwoman. He served as surgeon to Lord Willoughby's regiment in 1591 and acted afterwards as surgeon to the colony of English merchants near Posen in Poland. He lived there for eight years and says he suffered twice from plague. In 1604 he was sent as interpreter to the Czar when James I was negotiating increased relationships for the Muscovy trade. Woodall must have proved himself useful for he was appointed the first surgeon general when the East India Company was remodelled in 1612. In 1616 he was elected surgeon to St. Bartholomew's hospital and he died in 1643 leav-

ing three sons and a daughter. His literary reputation rests mainly on "The Surgeon's Mate," a useful and interesting text-book which the East India Company compelled every surgeon in their service to have a copy of. It is to be feared that in accordance with the custom of his day he was not above accepting a bribe of various proportions in return for a commission in the Company's service.

WOODALL'S TREATMENT OF SCURVY

"Woodall says in his treatise on the cure of scurvy; "I find we have many good things that heal the Scurvy well on land, but the Sea Chirurgeon shall do little good at Sea with them, neither will they indure. The use of the juice of Lemmons is a precious medicine and well tried, being sound and good, let it have the chief place, for it will deserve it, the use whereof is; It is to be taken each morning, two or three spoonfuls, and fast after it two hours, and if you add one spoonful of Aqua-vitae thereto to a cold stomach, it is the better. Also if you take a little thereof at night it is good to mix therewith some sugar or to take of the syrup thereof is not amiss. Further note it is good to be put into each purge you give in that disease. Some Chirurgeons also give of this juice daily to the

men in health as a preservative, which course is good if they have store, otherwise it were best to keep it for need. I dare not write how good a sauce it is at meat, lest the chief (chef) in the ships waste it in the great Cabins to save vinegar. In want whereof use the juice of Limes, Oranges, or Citrons, or the Pulp of Tamarinds: and in want of all these use oil of Vitriol as many drops as may make a cup of beer, water or rather wine if it may be had, only a very little as it were sour, to which you may also add sugar if you please, or some syrups, according to your store and the necessity of that disease, for of my experience I can affirm that good oil of Vitriol is an especial good medicine in the cure of Scurvy, as also in many other griefs, the which in another place is noted. Further a decoction of Bisket and therein Almonds ground, adding Cinamon and Rose water a little, and some sugar, were very comfortable now and then to be taken to refresh the stomach. And as touching the Tamarinds brought from the Indies they are to be eaten of themselves as the substance of them is, namely to eat them as you would prunes, and being made into conserves, eat them as other Conserves, on the point of a knife sucking out the substance, and putting forth the stalks or stones thereof, some dissolve them in wine or water, and

work out the substance of them therein, and cast away the rest, taking only that which is pure: one may use this medicine so oft as he please without danger or harm, only if he fear a flux of the belly, or have a weakness in the reines, let him not eat too much of the Tamarinds. Also the Electuary Diatrionpiperion given each morning a little on the point of a knife fasting and last, namely at the party his going to bed is a great preservative; for it doth warm and corroborate the stomach, and preserveth from the Scurvy, and is very comfortable to be given to any one that is diseased with the same, or subject thereto. And the Theriaca Diatesseron is yet better, for it hath an especial virtue in curing that disease. Also Venice Treacle, Mithridate, and London Treacle preserve well from this disease, taken daily fasting, and so doth conserve of Roses and Berberries mixed with a little oil of Vitriol, and given on the point of a knife. Green Ginger is also very good to comfort the stomack, and so are all sorts of Myrabolans Condite, and also all sorts of strong Cordial waters, but chiefly good Rosa solis and good wormwood water, yea and very good Aquavitae helpes well, Currants and Raisins of the Sun are likewise very good.

"Also all kinds of Spices moderately taken are good, and so is good wine a very good preserver of

the body from this disease, with also the continuance of fresh diet, which is hard to be gotten at sea, the excess of which good things is as dangerous.

"The principal Laxative medicine which I would advise in this case is pills of Euphorbium wherewith the body being swollen and watery, you may at your pleasure make evacuation thereof: these purge also by urine very well the dose being ½ scruple or at most 2 drachms. These are the fitter for that disease, because they purge not alone water, but also by their great warmth, they comfort and warm the stomack and entrails.

"These I advise the Chirugions mate to use, as it is said, where the body aboundeth with overmuch cold and crude humidity, but let your dose always respect the strength of the patient, for any strong purging is not good in the Scurvy: all sudden and strong evacuations are to be avoided. Also Aquilla Laxative is a very good purge in this case, namely eight or ten grains thereof taken in a cup of wine. It cureth also all worms of the body, and killeth them wheresoever they be. But if the stomach only be oppressed with the grief in this disease, I first give a dose of pills called Pilulle Ruffi, namely 1 oz: you shall find them to be very good.

"Note further, that if any dose or the whole masse of pills in the Chest, such time as you would administer them be grown too hard, then you may dissolve them with any syrup you have, or with good honey a very little, namely one only drop will serve to dissolve one dose at once, if the masse prove too liquid, you may roll it in some of the Pulvis Arthreticus till it be hard enough. Also the moderate use of Verjuice, Vinegar, or Oxymel hath been found very good in this case." *Woodall's Military and Domestic Surgery, London. Folio, 1639. Page 165.*

In his treatise on amputation for gangrene Woodall gives:

"A History or a relation or a remarkable example of an amputation by me performed upon a woman in Saint Bartholomew's Hospital, of both her legs, and part of seven of her fingers in one morning together all taken off in the mortified part, without pain or loss of blood or spirits at all, and the woman was living at the writing hereof, and the patient was a certain poor maid or woman servant in London, named Ellin French, of whom there were made Books and Ballads, that were sung about the streets of her, namely, that whereas

the said maid or servant, was given to pilfering, and being accused thereof by her master and mistress, used to curse and swear, and with words or execration to wish, that if she had committed the crime she stood accused of, that then her legs and hands, might rot off, the which thing accordingly, no doubt by the Providence of God, came to pass, as a judgement upon her, namely, that both her legs almost to the gartering place, with part of seven of her fingers did rot off, the which wretched woman nevertheless, being referred to me in St. Bartholomew's Hospital to be cured, by God's mercy and permission, I healed her perfectly, by cutting off both the Sphacelated leggs in the mortified parts with also part of her seven fingers, as is said, all in one morning without pain, terror or of any loss of blood unto her, in the taking them off, and made her perfectly whole in a very short time, namely, within three months, so merciful is our God unto us vile creatures, when we are most unworthy of such mercies. She is at the instant writing hereof, also living." *Woodall's Military & Domestic Surgery, London. Fo. 1639. P. 398.*

CHAPTER VIII

RICHARD WISEMAN (Surgeon and Courtier)

1622–1676

RICHARD WISEMAN occupies a definite position in English surgery. He wrote for cultivated surgeons and was amongst the first to illustrate his remarks with accounts of cases which had been under his care. Born in 1622 he seems to have served in the Dutch navy, was at the Battle of Worcester, at Dunbar and in the West of England always on the Royalist side. Later in life he was appointed sergeant surgeon to King Charles II. after becoming a surgeon in the Spanish navy during the Commonwealth period. It is noteworthy that in his writings he records his failures as well as his successes.

"At the Siege of Melcomb-Regis, a Foot-souldier of Lieutenant-colonel Ballard's by the grazing of a Cannon-shot, had a great part of the Forehead carried off, and the Scull fractured into many pieces, and some of it driven with Hairy scalp into the Brain. The man fell down as dead, but after

a while moved; and an hour or two after, his Fellow-souldiers seeing him endeavour to rise, fetcht me to him. I pulled out the pieces of Bones and lacerated Flesh from amongst the Brain, in which they were intangled, and drest him up with soft folded Linen dipt in a Cephalick Balsam, and with Emplaster and Bandage bound him up, supposing I should never dress him any more. Yet he lived 17 days; and on the 15th day walkt from that great Corner-fort over against Portsland to the Bridge which separates Weymouth from Melcomb-Regis led by the hand of some one of the Fellow-souldiers. The second day after he fell into a Spasmus, and died howling like a dog; as most of those do who have been so wounded. About the same time a Maid-servant was shot into the right side of her Head by a Musket-bullet deep into the Brain. She lived so long till that Lobe of the Brain wrought out or corrupted.

"At the Siege of Taunton one of Colonel John Arundell's men, in storming the Works, was shot in the Face by Case-shot. He fell down, and in the Retreat was carried off among the dead, and laid into an empty house by the way untill the next day: when in the morning early, the Colonel marching by that house heard a knocking within against the Door. Some of the Officers desiring to

know what it was, lookt in, and saw this man standing by the Door without Eye, Face, Nose, or Mouth. The Col. sent to me (my Quarters being nearest) to dress the man. I went, but was somewhat troubled where to begin. The Door consisted of two Hatches; the uppermost was open, and the man stood leaning upon the other part of the Door which was shut. His Face, with his Eyes, Nose, Mouth, and forepart of the Jaws with the Chin, was shot away, and the remaining parts of them driven in. One part of the Jaw hung down by his Throat, and the other part passed into it; I saw the Brain working out underneath the lacerated Scalp on both sides between his Ears and Brows I could not see any advantage he could have by my Dressing. To have cut away the lacerated Parts here had been to expose the Brain to the Air. But I helpt him to clear his Throat, where was remaining the Root of his Tongue. He seemed to approve of my Endeavours, and implored my help by the Signs he made with his Hands. I askt him if he would drink, making a Sign by the holding up a Finger. He presently did the like, and immediately after held up both his Hands, expressing Thirst. A Souldier fetcht some Milk, and brought a little wooden Dish to pour some of it down his Throat: but part of it running on both sides, he reacht out

his Hands to take the Dish. They gave it him full of Milk. He held the Root of this Tongue down with the one Hand, and with the other poured it down his Throat, (carrying his Head backward,) and so got down more than a quart. After that I bound his Wounds up. The dead were removed from thence to their Graves, and fresh Straw was fetch for him to lie upon, with an old Blanket to cover him. It was in the Summer. There we left that deplorable creature to lodge and while we continued there, which was about 6 or 7 days, he was drest by some of the Chirurgeons with a Fomentation made of Vulnerary Plants, with a little Brandy-wine in it, and with Stupes of Tow dipt in our common Digestive. So we bound him up." *Wiseman's Severall Treatises, Lond., 1776, p. 402.*

"Whilst our Squadron rode at Anchour in the Groin, there came in some Hollanders, under the notion of Hamburgers, with three Ships new trimm'd up for the King of Spain's service. A Boatswain of one of these Ships happened in company ashoar with some of our men, where drinking together, the Hollander began to prate of Religion, upbraiding one of our men for wearing

a Cross; and after a while, growing more heated with drink, he became quarrelsome, and swore Sacrament he would not wear a Cross, no, the Devil take him, repeating it often. One of our men beat him down, and fell with him; then kneeling upon his Breast, and holding his Head down, he drew out a Knife sticking in his Sash, and cut him from the Ear towards the Mouth, then from the Os zygoma to the Neather Jaw. Now, said he, you shall wear a Cross that the Devil do not carry you away. I was sent for from the next house as a friend to that Religion, and stitcht the Lips of the Wound close together; then sprinkling them with a little pulv. Galeni, applied Pledgits with a sarcotick Unguent, and with Astringents and Bandage dressed him up. The next morning he was let Bloud, and the third day after I took off the Dressings, and finding the Wound as it were agglutinated in the Slits, I cut out some of the Stitches, sprinkled the Wound as at first, and drest him up with Sarcoticks, with Compresse and Bandage. The second day after I drest him again, and cut out the remaining Stitches; and in a dressing or two more cured him. This being the work of Nature, who rarely faileth in acting her part, if we perform ours, in retaining the Lips close together, and defending them from Fluxion. The

Patient was well pleased with his Cure, though there remained some marks of a Cross. These sort of people wearing them with much pride in their Faces, as marks of Courage." *Wiseman, Chirurgicall Treatises. London, 1767. Page 362.*

"I was sent for to a young fellow who had been shrewdly cudgell'd about the Pate. He was sick in bed, and dozed with the pain. I looked upon his Head, and saw it swell'd in severall places: some of the Swellings were big and pappy, abounding with extravasated Serum. I presently looked for the Jugular Veins, and seeing them full, I opened the fairest, and took away at least a dozen ounces of bloud: then caused the Hair of his Head to be shaved off, and embrocated all his Head, Neck and Jaws with a Mixture of ol. rof. mytill, acet. cum album. ovor. and applied a Cartplasm over all his Head pr far. hord. fabar. flor. ros. rub. balaust. hacc. mytill. decoted in Oxymel. A Clyster was that evening administred, and an Anadyne draught disposed him to rest that night. The next morning I was informed he had slept at times, but I found him hot, and his Pulse quick. I opened the other Jugular Vein, and seeing him bleed with a full stream I permitted it to flow proportion-

ably: then having a Fomentation ready of Claret-wine wherein had been infused flor. rof. rubr. balaust. nuc. eupress. etc. I took off Dressings. and stuped them, and thought to have opened one of these Tumours: but seeing it diminishing, I forbare, and embrocated his Head again cum ol. rof. mytill. acto, and applied the Cataplasm as before. By these Applications I dried up the Tumour in a great measure before the seventh day; then added some Ca; halicks to the former Ingredients, and boiled them in Wine and Water, with which I caused his Head to be fomented, and afterwards applied Vigo's Cerat. ad contuf. During the first seven days I permitted him onely Water-grewell or Pando, and kept his Body solubly by Clysters; but afterwards gave him more liberty and purged him: by which method he recovered, without any manner of laying open. And thus all external Contusions may be happily cured.

"A Person of Quality, aged between thirty and forty years, by accident of a Fall out of her Coach bruised her Head a little above the right Temporal Muscle. She was stunned with the Fall, but did not vomit. She was dressed by some of her Servants with such Medicaments as those of her own Sex advised. About fourteen days after, being indisposed, she came to Town, and sent for me. I saw a

large Ecchymosis remaining, and a Tumour of the bigness of a Pheasant's egge: it was soft, and seemed to be full of a corrupt Serum. There appeared no hopes of discussing it, and yet it was not safe to permit it to lie longer so near the Bone, Wherefore I applied a mild Caustick upon it, and dividing the Escar gave vent to the Serum and some Clots of grumous bloud; then fomented it with Wine, and dressed it up with a Dossil spread with a Digestive ex terebinth. and unguent. basilic. over it upon the Escar, and embrocating the Parts about with ol. cham. applied empl. diapalm. with Compresse and Bandage. At the next opening I saw the Ulcer well digested, and no part of the Bone bare; nor was it painfull in the time of dressing or afterward: yet from the first day I dressed her, she usually fainted the while, and put us upon a necessity of laying her down in her Bed some time before we had finisht our Applications; where after she had lain an hour or two very sick, she recovered again, and walked about her Chamber very well. Her Friends and Relations, who visited her often, and saw her thus distempered, suspected it to arise from the Wound; but I supposed it Vapours, and prevailed with her to consult a Physician. The Physician being come, I took off Dressings, and shewed him the Ulcer well

digested, and disposed to heal, without the least sign of ill: the Physician also concluded so. But before I had dressed her up, she fainted, and was carried to her Bed sick. These Faintings increasing, her Physician began to suspect it proceeded from the Contusion; but her recovering again so well afterward, confirmed him that they were Vapours, and that by Purging would be relieved. She complied, and was moderately purged once in 3 or 4 days, whereby she was somewhat freed of these Fits, and I had the liberty to cicatrize the ulcer. After which I made her a Fontanell in her Leg, and she retired to her House in the Country, where she took Physick, and recovered perfectly well. If these fainting Fits had proceeded from Contusion, they would not so have intermitted and gone off as they did." *Chirurgicall Treatises, 1676. Page 386.*

CHAPTER IX

WILLIAM CHESELDEN (A Versatile Surgeon)

1688–1752

ANATOMIST, surgeon to St. Thomas' Hospital, lithotomist, ophthalmic surgeon, artist, architect, wit and bon vivant Cheselden spent a full and happy life. As an anatomist he was amongst the first to lay stress in his teaching on applied anatomy; as a surgeon he first adopted suprapubic lithotomy, found it too dangerous at a time when all wounds suppurated, and adopted the older lateral lithotomy and brought it to such a pitch of perfection that his method was followed with little or no change for more than a century after his death. Of these operations he says "the first 27 patients cut (by the lateral route) I believe are living. Indeed I had cut 31 who recovered before I had one died, having cut four more who recovered between the time the 28th was cut and the time he died. But I scorn to use any fallacious method of representing my success. Some of these being cut in the Hospital and some privately, the truth of

this account may be suspected by those who do not know me. I cannot take the liberty of mentioning the name of private patients, therefore I will give a detail of those only which I cut this way in the Hospital where the first 25 recovered, to the truth of everyone of which I had about 20 witnesses, and I do believe these patients are all living at this time. Many of the children had the smallpox during their cure, and some had the measles." *A short historical account of cutting for the stone. Anatomy Ed. 4.*

From the tables he supplies Cheselden seems to have had regular field days in his operating theatre; thus, on March 27th 1727 he cut three persons for the stone; on April 12th 1727, 4 patients; again 3, on May 15th, and so on to the end of the list in July 1730. But as he was accustomed to extract the stone in about half a minute to two minutes a morning's work did not take so long as it would nowadays.

Cheselden was of the company of the wits during the reign of Queen Ann and was highly esteemed by them. Pope who was a patient in his house writes of him in his Epistle to Lord Bolingbroke:

> Late as it is, I put myself to school,
> And feel some comfort not to be a fool.

Weak though I am of limb and short of sight,
Far from a lynx and not a giant quite;
I'll do what Mead and Cheselden advise
To help these limbs and to preserve these eyes.
Not to go back is somewhat to advance,
And men must walk at least before they dance.

The fine plates in his book on the Anatomy of the bones shows his artistic tastes. It is probable that he supervised the plans for the building for the Surgeons' Hall in the Old Bailey and of the wooden bridge over the Thames at Putney. He died at Bath of a surfeit of ale and hot buns or, perhaps, in modern language, of acute appendicitis.

EARLY SUPRAPUBIC LITHOTOMY

Cheselden says "I have only cut nine patients in this way (Suprapubic). James Shorter of Oxfordshire aged seven and John Deval of Shorn near Gravesend in Kent, aged 14, were cut May 5th 1722. They were both easy soon after the operation, and had no complaint until two hours after, when the bandage which was flannel, growing wet became too streight; but that being loosened they were easy and went to sleep presently after, and continued to sleep between three and four hours

without any opiate, when a quantity of urine coming through their wounds, gave them some uneasiness, and made me think it necessary to dress them. They took an opiate at night and slept well; next morning they complained of little soreness which fomentations and embrocations soon eased. Thus they continued five or six days, in which time their wounds were perfectly digested, and in about three weeks all John Deval's urine came the right way, which gave him some uneasiness for a day or two, after which his wound cicatrized apace, and in seven weeks was perfectly cured. But James Shorter, being the first patient I cut the high way, the operation was a little longer than any of the rest, which happened from my making the wound too small, and endeavouring to take out the stone with my fingers. From this smallness of the external wound, the urine was confined and made a large abscess between the bladder and the integuments; which I did not at first perceive, and hoping that it might contract, I took care to press the matter out often, nevertheless it increased even to the discharging near a pint of matter and urine at one dressing; upon which I dilated the wound with a gentian tent, which was taken out to let the matter discharge itself once in two hours; whereby I procurred in

six hours time a fair opening which perfectly cured all this impostumation in a few days time. If the amendment had not been so sudden I intended to have used a hollow tent.

"This abscess happening nearly three weeks after the operation, just when all the urine began to come the right way, it protracted the cure about a month longer than otherwise I should have expected. However, I think this accident can be no objection against the operation, since it is, what is not very liable to happen to any operator who is apprised of it, or if it should, I think the remedy both easy and certain.

"Richard Smith of London aged 11, Joseph Reynolds 12, William White 9, both living in Southwark, were cut May 22nd 1722. Joseph Reynolds never complained during the operation and they were all easy soon after. In these three there was nothing remarkable during the whole cure; the urine in Reynolds and White came all the right way in about three weeks; but in Smith (who was of a weak constitution) in a month and it was two months before he was perfectly cured; but the other two much sooner. (It was perhaps William White, aged 9, of whom the story was told that Cheselden promised him a sugar plum if he behaved himself during the operation. The

stone was removed in less than 30 seconds and as soon as the boy was unbound he sat up, shook his finger at Cheselden and said "now where is that sugar plum?")

"John Clark of Braintree in Essex, aged 18, was cut July 12th 1722, and thinking himself out of danger, on the fifteenth day when nobody observed him, he went to a pump soon after getting out of bed, and washed his hands and face in cold water and drank near a pint of it, which immediately disordered him, and through him into a diarrhoea which we could never stop, he languished for ten days and then died the twenty-fifth day after the operation.

"Stephen Jennings of Southwark, aged 19, and Henry More of Gloucestershire aged 11, were cut August 14th 1722. These operations though the stones were very large, (one weighing 3¼ ounces) were very quick and easy. These boys scarce complained during the operation and both went to sleep soon after and continued asleep four or five hours, after which they were dressed and declared themselves perfectly easy. The greatest part of the next day they played at cards, as I afterwards learned, and complained of nothing but hunger. They slept well every night without opiates, he only who had the largest stone taking one the

first night. The third day More was taken with a pain in his head and back with a reaching to vomit and the urine, instead of coming through his wound, passed through his penis, it was expected he would have had the small-pox, but a rash coming out the next day freed him from these symptoms. They both continued very well, their urine coming through their wounds for about three weeks, at which time it all began to pass the right way, which gave them some uneasiness for a day or two, soon after which their wounds healed and they are both perfectly well." *A Treatise on the High Operation for a Stone by William Cheselden, Surgeon to St. Thomas' Hospital in Southwark and F.R.S., London printed for John Osborn at the Oxford Arms in Lombard Street, 1723. Pages 11–19.*

CHAPTER X

PERCIVALL POTT (A Master Teacher of Surgery)

1714–1789

THE name of Percivall Pott is handed down to us by "Pott's Fracture," "Pott's disease of the spine" and "Pott's puffy swelling." It is usually stated that the fracture described by Pott was the one which he himself sustained when, as assistant surgeon at St. Bartholomew's Hospital he was riding down the Old Kent Road on a frosty day to visit the patients suffering from venereal disease in the Kentish Lock Hospital. There is no proof of this and in his essay on fractures and dislocations he describes fracture-dislocation at the ankle without making any reference to his own experience.

Pott's disease of the spine is hidden away in a short essay on palsy of the lower limbs. It describes the condition graphically but does not state definitely its relation to tuberculous, or as he would have called it scrophulous, inflamation of the spine.

Born in 1714 he was the son of the young widow of Lieutenant Houblon, who had been killed in action. Her second husband Percivall Pott, notary and scrivener by occupation, or as he would now be called a solicitor, died in 1715, two years after his marriage. Pott came of an old established city family who were so prolific that it was a standing joke among their friends of two generations that, although they were grocers by trade, they were the best pot makers in England. Percivall Pott therefore began life with every advantage. Allied to the Houblons by his mother's first marriage who were merchant princes and founders of the Bank of England he could command wealth, whilst his Pott connection in the City insured him many patients. Mrs. Pott herself must have been a charming personality and so long as she lived Percivall her only son remained unmarried. He was attached to St. Bartholomew's Hospital throughout the whole of his professional life, first as apprentice to Edward Nourse, then as assistant surgeon, surgeon and consulting surgeon saying with tears in his eyes when he resigned in 1787 that he had served the hospital as boy and man for half a century. His sterling honesty, his kindness of heart and his great teaching ability put him at the head of the surgical profession in England, whilst his writings, published for the most part as pam-

phlets, written in easy English made him well-known to the surgeons of Europe.

FRACTURE DISLOCATION OF THE ANKLE

He says of fracture-dislocation of the ankle: "If the tibia and fibula be both broken they are generally displaced in such manner that the inferior extremity or that connected with the foot is drawn under that part of the fractured bone which is connected with the knee; making by this means a deformed unequal tumefaction in the fractured part and rendering the broken bone shorter than it ought to be or than its fellow. And this is generally the case let the fracture be in what part of the leg it may.

"If the tibia only be broken and no act of violence, indiscretion or inadvertance be committed either on the part of the patient or of those who conduct him, the limb commonly preserves its figure and length; the same thing generally happens if the fibula only be broken within two or three inches of the ankle. It will obviously appear to every one who examines it, that the support of the body, and the due and proper use and execution of the office of the joint of the ankle, depend almost entirely on the perpendicular bearing of

the tibia upon the astragalus, and on its firm connection with the fibula. If either of these be perverted or prevented, so that the former bone is forced from its just and perpendicular position on the astragalus; or if it be separated by violence from its connection with the latter, the joint of the ankle will suffer a partial dislocation internally; which partial dislocation cannot happen without not only a considerable extension, or perhaps laceration of the bursal ligament of the joint, which is lax and weak, but a laceration of those strong tendinous ligaments, which connect the lower end of the tibia with the astragalus and os calcis, and which constitute a great measure the ligamentous strength of the joint of the ankle. This is the case, when, by leaping or jumping, the fibula breaks in the weak part already mentioned, that is within two or three inches of its lower extremity. When this happens, the inferior fractured end of the fibula falls inward toward the tibia, that extremity of the bone which forms the outer ankle is turned somewhat outward and upward, and the tibia having lost its proper support, and not being of itself capable of steadily preserving its true perpendicular bearing, is forced off from the astragalus inwards, by which means the weak bursal, or common ligament of the joint, is

violently stretched, if not torn, and the strong ones, which fasten the tibia to the astragalus and os calcis, are always lacerated; thus producing at the same time a perfect fracture and a partial dislocation, to which is sometimes added a wound in the integuments, made by the bone at the inner ankle. By this means, and indeed as a necessary consequence, all the tendons which pass behind or under, or are attached to the extremities of the tibia and fibula, or os calcis, have their natural direction and disposition so altered, and instead of performing their appointed actions, they all contribute to the distortion of the foot, and that by turning it outward and upward.

"When this accident is accompanied, as it sometimes is, with a wound of the integuments of the inner ankle, and that made by the protrusion of the bone, it not infrequently ends in a fatal gangrene, unless prevented by timely amputation, though I have several times seen it do very well without. But in its most simple state, unaccompanied with any wound, it is extremely troublesome to put to rights, still more so to keep it in order, and unless managed with address and skill, is very frequently productive both of lameness and deformity ever after." *Pott's Chirurgical Works, London, 1779, Vol. I, page 435.*

ON THE PALSY OF THE LOWER LIMBS

"The disease of which I mean to speak is generally called the palsy and it consists in a total or partial abolition of the power of using and sometimes even of moving the lower limbs, in consequence as is generally supposed, of a curvature of some part of the spine.

"To this distemper both sexes, and all ages, are equally liable. If the patient be an infant, it becomes an object of constant though unavailing distress to its parents; if an adult, he is rendered perfectly helpless to himself, and useless to all others, which, of all possible states, surely the very worst.

"When this disease attacks an infant of only a year or two old, or under, the true cause of it is seldom discovered until some time after the effect has taken place, at least not by parents and nurses, who know not where to look for it. The child is said to be uncommonly backward in the use of his legs, or it is thought to have received some hurt in its birth.

"When it affects a child who is old enough to have already walked, and who has been able to walk, the loss of the use of his legs is gradual, though in general not very slow. He at first com-

plains of being very soon tired, is languid, listless, and unwilling to move much, or at all briskly; in no great length of time after this he may be observed frequently to trip, and stumble, although there be no impediment in his way; and whenever he attempts to move briskly, he finds that his legs involuntarily cross each other, by which he is frequently thrown down, and that without stumbling; upon endeavouring to stand still and erect, without support, even for a few minutes, his knees give way and bend forward. When the distemper is a little further advanced, it will be found that he cannot, without much difficulty and deliberation, direct either of his feet precisely to any exact point; and very soon after this, both thighs and legs lose a good deal of their natural sensibility, and become perfectly useless for all the purposes of locomotion. When an adult is the patient, the progress of the distemper is much the same, but rather quicker.

"Until the curvature of the spine has been discovered, it generally passes for a nervous complaint; but when the state of the back bone has been adverted to, recourse is almost always had to some previous violence to account for it; some pulling, lifting, carrying, or drawing a heavy body, which is supposed to have hurt the back. In

some few instances, this exertion may have been such, as might be allowed to have been equal to the effect; but, in by much the majority, this is so far from being the case, that if it be admitted to have had any share at all in it, some predisposing cause, at least, must be looked for, in which, (in my opinion) consists the very essence of the disease.

"I have, in compliance with custom, called the disease a palsy; but it should be observed, that notwithstanding the lower limbs being rendered almost, or totally useless, yet there are some essential circumstances in which this affection differs from a common nervous palsy: the legs and thighs are, I have just said, rendered unfit for all the purposes of locomotion, and do also lose much of their natural sensibility, but notwithstanding this, they have neither the flabby feel, which a truly paralytic limb has, nor have they that seeming looseness at the joints, nor that total incapacity of resistance, which allows the latter to be twisted in almost all directions: on the contrary, the joints have frequently a considerable degree of stiffness, particularly the ankles, by which stiffness the feet of children are generally pointed downward, and they are prevented from setting them flat upon the ground.

"The curvature of the spine, which is supposed to be the cause of this complaint, varies in situation, extent and degree, being either in the neck or back, and sometimes (though very seldom) in the upper part of the loins; sometimes comprehending two vertebrae only, sometimes three, or more, by which the extent of the curve becomes necessarily more or less; but whatever may be the number of vertebrae concerned, or whatever may be the degree or extent of the curvature, the lower limbs only feel the effect – at least I have never once seen the arms affected by it.

"This effect is also different in different subjects: some are rendered totally and absolutely incapable of walking in any manner, or with any help and that very early in the course of the distemper; others can make a shift to move about by grasping their own thighs with their hands; some can sit in an erect posture, or in a chair, without much trouble or fatigue, which others are incapable of, at least for any length of time; some have such a degree of motion in their legs and thighs, as to enable them to turn and move for their own convenience in bed, others have not that benefit, and are obliged to lie till moved by another.

"The general health of the patient will not

Unable to display this page

POTT'S PUFFY SWELLING

"A poor fellow crossing Tower-hill, got, before he was aware of it, into a mob, that was endeavouring to rescue a sailor from a press-gang. The man was knocked down. When the crowd dispersed, he was found senseless, and in that state was brought to St. Bartholomew's hospital, where he was immediately let blood and put to bed. In an hour or two, he was so recovered, as to be able to give the preceding account.

"When Mr. Nourse (whose week it was for accidents) saw him the next day, the man appeared to be perfectly well, nor did any mark of violence appear on his head, except one small bruise, and that so slight, that it might, with more probability, be attributed to the fall, than the blow. However, as he was positive, that he had been knocked down by a very smart blow, from a heavy weapon; and as he certainly had been deprived of sense a considerable time thereby; Mr. Nourse bled him again, and ordered him to be kept in bed, and to a very low diet. At the end of three days the man found himself so well, as to leave the hospital, and go to work. On the twelfth day from that of the accident, he came to my surgery, and complained of being much out of order; said that he was very

uneasy; that he was hot, thirsty, got little or no sleep, and was, at times, so faint that he could not pursue his work. He looked ill, assured me he had lived very soberly, from the time of his leaving the hospital, and that he had been in his present state for three days past. I took him into the house again, bled him, ordered him a glyster immediately, and that he should be kept in bed.

"Next day, (13th) he was in much the same state as the preceding; he had passed a restless night, he dozed now and then but awoke with much disturbance. He had a hot skin, and a flushed countenance, mixed with a light yellow tint; he complained of general pain and tightness all over his head, but neither to the sight, nor to the touch, was there any appearance, or sensation, whereon to build a probable supposition of particular mischief. He was again, by the physician's order, let blood, and directed to take the sal absinthii mixture, with a few grains of rhubarb in it every few hours. He passed the ensuing night in a disturbed manner, and the next day, (the 14th) was apparently worse; his skin was hotter, his pulse quicker, and his pain more acute; he also now thought, that one part of his head was tender to the touch, and said, he was sure, that was the part that received the blow. This place I examined. The scalp

did seem to be rather fuller than natural, but by no means sufficiently so to enable me to form any judgment by. Toward the close of this day he had a slight shivering, was sick, and vomited, and passed the following night without any sleep at all; talking sometimes incoherently, but still capable of giving a rational answer to any question which engaged his attention. On the 15th day the tumour of the scalp was more apparent, but yet seemed to contain little or no fluid, and was about the breadth of a crown piece. I would have removed that portion of scalp; but while I was intending it, the poor man had a very severe rigor, which disordered him so much, that he begged to be let alone for the present. That afternoon he had two more shiverings, passed very ill the following night, and next morning was delirious. The tumor now was more risen, contained palpably a fluid, but was by no means tense; I took away the whole tumid piece, by a circular incision, gave discharge to a thin brown sanies, and found the cranium perfectly naked, altered considerably in colour from that of a healthy natural one, but without fissure, fracture, or other evil. That whole night and next day he was delirious; his skin burning hot; he had frequent spasms, which shook his

whole frame, and the next night (the 17th) he died.

"The whole scalp, except round the edge of the incision, was in a natural state; the pericranium in every other part, except the tumid one, adhered to the bone; and neither inflammation nor tumor of any kind all over the rest of the head. Under that part of the skull from which the pericranium had been detached, and from which the scalp had been removed, a very considerable collection of matter was found lying between the dura mater and cranium, but no appearance of disease anywhere else." *Pott's Chirurgical Works, London, 1779, Vol. I, page 68.*

CHAPTER XI

JOHN HUNTER (The Experimental Surgeon)

1728–1793

EVERY surgeon recognises that John Hunter was a scientific man; most think of him as a great collector of pathological specimens; few remember that he was one of the first exponents in England of experimental surgery. It would appear at first sight that his remarkable operation of ligature of the femoral artery was a mere inspiration of the moment. A careful examination however, shows that it was carefully planned and was the result of experiments performed long before upon animals. It had always been thought that an aneurysm was the mechanical result of a strain leading to thinning of the walls of an artery. Upon this theory it was looked upon as a fatal incurable condition to be treated by amputation of the limb or merely to be let alone until it burst and the patient died. Hunter took a different view and recognized as a result of his experiments that the thinning of an artery did not lead to its dilation but that there

must be some other factor. He set himself to work and came to the conclusion that the wall of the artery was diseased at the place where the aneurysm was formed. He decided therefore to try to cure the condition by tying the artery where it was healthy – that is to say at some distance from the swelling.

The story is well told by Sir Everard Home his pupil and brother-in-law who succeeded him as surgeon at St. George's Hospital. He says:

"Mr. Hunter finding an alteration of structure in the coats of the artery previous to its dilatation and that the artery immediately above the sac seldom unites when tied up in the operation for the aneurism, so that as soon as the ligature comes away, the secondary bleeding destroys the patient, was led to conclude that a previous disease took place in the coats of the artery in consequence of which it admitted of dilatation capable of producing aneurism. But not satisfied with the experiments on frogs, given by Haller in support of the opinion that weakness alone was sufficient to produce the dilatation, he resolved to try the result in a quadruped, which, from the vessels being very similar in their structure to those of the human subject, would be more likely to ascertain the truth or fallacy of Haller's opinion.

"Mr. Hunter laid bare the carotid artery of a dog for above an inch in length and having removed its external coat and afterwards dissected off the other coats layer by layer till what remained was so thin that the blood was plainly to be seen through it, left the dog to himself. In about three weeks the dog was killed and the parts examined, when it appeared that the two sides of the wound having closed upon the artery, the whole of the surrounding parts were consolidated, forming a strong band of union, and the artery itself was neither increased nor diminished in size.

"This experiment appeared very conclusive, as the coats of the artery were weakened to a much greater degree without dilatation than can ever happen from accident in the living body, independent of morbid affection. But it was objected on the other hand, that the parts having been left to themselves, immediately closed upon the weakened portion of the artery, and, being cemented together by the coagulated blood, effectually secured it against any dilatation. To try the force of this objection, I (i.e., Everard Home) made the following experiment.

"I laid bare the femoral artery of a dog, about two inches below Poupart's ligament, for about an inch in length and dissected off the coats till

the haemorrhage from the vasa vasorum was considerable, and the circulating blood was distinctly seen through the internal membrane of the artery. The haemorrhage soon stopped by exposure, the surface was wiped dry and afterwards covered with a dossil of lint to prevent the sides of the wound from uniting. The dog continued very well, and the wound healed up from the bottom; after six weeks the dog was killed and the artery was injected, that it might be examined with greater accuracy. It was not perceptibly enlarged or diminished and its coats at this part had recovered their natural thickness and appearance.

"The results of these experiments confirmed Mr. Hunter in his opinion that the artery, in cases of aneurism, is in a diseased state and led him to believe that the disease often extends along the artery for some way from the sac; and that the cause of failure in the common operation arises from tying a diseased artery, which is incapable of union in the time necessary for the separating of the ligature. The femoral and popliteal arteries are portions of the same trunk presenting themselves on different sides of the thigh, and are readily come at in either situation; but where the artery is passing from the one side to the other,

it is more buried in the surrounding parts and cannot be exposed without some difficulty.

"In performing the operation for the popliteal aneurism, especially when the tumour is large, the ligature is commonly applied on the artery at that part where it emerges from the muscles. This mode of performing the operation will be found inadequate if the disease of the artery extends above the sac; for if the artery should afterwards give way, there will not be a sufficient length of vessel remaining to allow of its being again secured in the ham. To follow the artery up through the insertion of the triceps muscle, to get a portion of it where it is sound, becomes a very disagreeable part of the operation; and to make an incision upon the fore part of the thigh, to get at and secure the femoral artery would be breaking new ground; a thing to be avoided, if possible, in all operations.

"Mr. Hunter, from having made these observations, was led to propose, that in this operation the artery should be taken up in the anterior part of the thigh, at some distance from the diseased part, so as to diminish the risk of haemorrhage and admit of the artery being more readily secured should any such accident happen. The force of the circulation being thus taken off the aneurismal

sac, the progress of the disease would be stopped; and he thought it probable, that if the parts were left to themselves, the sac with its contents, might be absorbed and the whole of the tumour removed which would render any opening into the sac unnecessary.

"Upon this principle Mr. Hunter performed the operation at St. George's Hospital.

"This first patient survived fifteen months and Hunter had the satisfaction of obtaining a post mortem examination. The second patient died on the 26th day after the operation. The third and fourth patients recovered, their aneurisms having been cured.

"The fifth patient upon whom Mr. Hunter performed this operation was Joseph Caswell, aged forty-two, a man not accustomed to horse exercise or any mode of life which could in the least assist in producing the disease. The aneurism was in the ham of the left leg.

"In performing the operation the artery alone was included in a strong single ligature, and the wound was healed by the first intention, leaving a passage for the ligature. The local inflammation was extremely small, and consequently attended with little sympathetic fever. The ligature came away on the eleventh day, and in five weeks he

went into the country, able to walk with a stick, the wound perfectly healed.

"In this case the heat of the two legs was carefully examined twice a day, from the second to the ninth after the operation, and the limb operated upon was uniformly colder than the other.

"He came to town six months after the operation, and said that the left leg was fully as strong as the right, but when exposed to cold he was more sensible of its effects upon that leg. About two months after the operation he had a violent pain in the upper part of the left foot, similar to what is felt when a nerve is pressed: this lasted for about six weeks, and afterwards went entirely off. As no nerve was included in the ligature, this affection probably arose from the nerve in its passage through the consolidated parts being deprived of its natural freedom. There was a small tumour, the remains of the aneurismal sac, very distinctly to be felt in the ham, but without pulsation, and to the feel perfectly solid." From *John Hunter's Works, London, 1835, Vol. III, page 594; Trans. Sec. for the improvement of medical and chirurgical knowledge 1793, I, page 138.*

CHAPTER XII

ABRAHAM COLLES

1773–1843

ABRAHAM COLLES pronounced his name in two syllables. He was born at Kilkenny in Ireland, the second son of William Colles who owned marble quarries. He was educated at Trinity College, Dublin, and after obtaining a license to practice from the Royal College of Surgeons of Ireland he took a postgraduate course and graduated from there as M.D. in 1797. He afterwards walked to London, a distance of 400 miles at the rate of 50 miles a day. Returning to Dublin he was appointed resident surgeon at the Steevens Hospital and rose so rapidly in his profession that he was elected President of the Irish College of Surgeons in 1802. In the following year he was appointed Professor of Anatomy, Physiology and Surgery at the College of Surgeons and held office from 1804–1836. He died in 1843 and his eldest son was President of the College of Surgeons in 1863. He wrote on surgery and on venereal disease. His name is

preserved in "Colles' Fracture" and in "Colles' Law" where he stated that a child born of a mother who is without any obvious venereal symptoms shows the disease when a few weeks old and will infect the most healthy nurse though it is never known to infect its own mother.

COLLES' FRACTURE

"The injury to which I wish to direct the attention of surgeons has not, as far as I know, been described by any author; indeed the form of the carpal extremity of the radius would rather incline us to question its being liable to fracture. The absence of crepitus, and of the other common symptoms of fracture, together with the swelling which instantly arises in this, as in other injuries of the wrist, render the difficulty of ascertaining the real nature of the case very considerable.

"This fracture takes place at about an inch and a half above the carpal extremity of the radius, and exhibits the following appearances: —

"The posterior surface of the limb presents a considerable deformity; for a depression is seen in the fore-arm, about an inch and a half above the end of this bone, while a considerable swelling occupies the wrist and metacarpus. Indeed, the

carpus and base of the metacarpus appear to be thrown backward so much as on first view to excite a suspicion that the carpus has been dislocated forward.

"On viewing the anterior surface of the limb we observe a considerable fullness, as if caused by the flexor tendons being thrown forwards. This fullness extends upwards to about one-third of the length of the fore-arm, and terminates below at the upper edge of the annular ligament of the wrist. The extremity of the ulna is seen projecting towards the palm and inner edge of the limb; the degree, however, in which this projection takes place is different in different instances.

"If the surgeon proceed to investigate the nature of this injury he will find the end of the ulna admits of being readily moved backwards and forwards.

"On the posterior surface he will discover, by the touch, that the swelling on the wrist and metacarpus is not caused entirely by an effusion among the softer parts; he will perceive that the ends of the metacarpal and second row of carpal bones form no small part of it. This, strengthening the suspicion which the first view of the case had excited, leads him to examine, in a more particular manner, the anterior part of the joint; but the

want of that solid resistance which a dislocation of the carpus forward must occasion forces him to abandon this motion, and leaves him in a state of perplexing uncertainty as to the real nature of the injury. He will, therefore, endeavour to gain some information by examining the bones of the fore-arm. The facility with which (as was before noticed) the ulna can be moved backward and forward does not furnish him with any useful hint. When he moves his fingers along the anterior surface of the radius he finds it more full and prominent than is natural; a similar examination of the posterior surface of this bone induces him to think that a depression is felt about an inch and a half above its carpal extremity. He now expects to find satisfactory proofs of a fracture of the radius at this spot. For this purpose he attempts to move the broken pieces of the bone in opposite directions; but, although the patient is by this examination subjected to considerable pain, yet neither crepitus nor a yielding of the bone at the seat of fracture, nor any other positive evidence of the existence of such an injury, is thereby obtained. The patient complains of severe pain as often as an attempt is made to give to the limb the motions of pronation and supination.

"If the surgeon lock his hand in that of the patient and make extension, even with a moderate force, he restores the limb to its natural form, but the distortion of the limb instantly returns on the extension being removed. Should the facility with which a moderate extension restores the limb to its form induce the practitioner to treat this as a case of sprain, he will find, after a lapse of time sufficient for the removal of similar swellings, the deformity undiminished. Or, should he mistake the case for a dislocation of the wrist, and attempt to retain the parts *in situ* by tight bandages and splints, the pain caused by the pressure on the back of the wrist will force him to unbind them in a few hours; and if they be applied more loosely, he will find, at the expiration of a few weeks, that the deformity still exists in its fullest extent, and that it is now no longer to be removed by making extension of the limb. By such mistakes the patient is doomed to endure for many months considerable lameness and stiffness of the limb, accompanied by severe pains on attempting to bend the hand and fingers. One consolation only remains, that the limb will at some remote period again enjoy perfect freedom in all its motions, and be completely exempt from pain; the deformity, however, will remain undiminished through life.

"The unfavourable result of some of the first cases of this description which came under my care forced me to investigate with peculiar anxiety the nature of the injury. But while the absence of crepitus and of the other usual symptoms of fracture rendered the diagnosis extremely difficult, a recollection of the superior strength and thickness of this part of the radius, joined to the mobility of its articulation with the carpus and ulna, rather inclined me to question the possibility of a fracture taking place at this part of the bone. At last, after many unsuccessful trials, I hit upon the following simple method of examination, by which I was enabled to ascertain that the symptoms above enumerated actually arose from a fracture seated about an inch and a half above the carpal extremity of the radius.

"Let the surgeon apply the fingers of one hand to the seat of the suspected fracture, and, locking the other hand in that of the patient, make a moderate extension until he observes the limb restored to its natural form. As soon as this is effected let him move the patient's hand backward and forward and he will, at every such attempt, be sensible of yielding of the fractured ends of the bone, and this to such a degree as must remove all doubt from his mind.

"The nature of this injury once ascertained, it will be a very easy matter to explain the different phenomena attendant on it, and to point out a method of treatment which will prove completely successful. The hard swelling which appears on the back of the hand is caused by the carpal surface of the radius being directed slightly backwards instead of looking directly downwards. The carpus and metacarpus, retaining their connections with this bone, must follow it in its derangements, and cause the convexity above alluded to. This change of direction in the articulating surface of the radius is caused by the tendons of the extensor muscles of the thumb, which pass along the posterior surface of the radius in sheaths firmly connected with the inferior extremity of this bone. The broken extremity of the radius being thus drawn backwards causes the ulna to appear prominent towards the palmar surface, while it is possibly thrown more towards the inner or ulnar side of the limb by the upper end of the fragment of the radius pressing against it in that direction. The separation of these two bones from each other is facilitated by a previous rupture of their capsular ligament, an event which may readily be occasioned by the violence of the injury. An effusion into the sheaths of the flexor

tendons will account for that swelling which occupies the limb anteriorly.

"It is obvious that in the treatment of this fracture our attention should be principally directed to guard against the carpal end of the radius being drawn backwards. For this purpose, while assistants hold the limb in a middle state between pronation and supination, let a thick and firm compress be applied transversely on the anterior surface of the limb, at the seat of fracture, taking care that it shall not press on the ulna; let this be bound on firmly with a roller, and then let a tin splint, formed to the shape of the arm, be applied to both its anterior and posterior surfaces. In cases where the end of the ulna has appeared much displaced, I have laid a very narrow wooden splint along the naked side of this bone. This latter splint, I now think, should be used in every instance, as, by pressing the extremity of the ulna against the side of the radius, it will tend to oppose the displacement of the fractured end of this bone. It is scarcely necessary to observe that the two principal splints should be much more narrow at the wrist than those in general use, and should also extend to the roots of the fingers, spreading out so as to give a firm support to the hand. The cases treated on this plan have all re-

covered without the smallest defect or deformity of the limb, in the ordinary time for the cure of fractures.

"I cannot conclude these observations without remarking that were my opinion to be drawn from those cases only which have occurred to me, I should consider this as by far the most common injury to which the wrist or carpal extremities of the radius and ulna are exposed. During the last three years I have not met with a single instance of Dessault's dislocation of the inferior end of the radius, while I have had opportunities of seeing a vast number of the fracture of the lower end of this bone." *Medical Surgical Journal, 1814, Vol. X.*

CHAPTER XIII

SIR CHARLES BELL (Surgeon and Artist)

1774–1842

Sir Charles Bell was one of the six children of a Scotch Episcopalian minister. He was equally distinguished as a surgeon, a teacher of medical students, an experimental physiologist, and an artist. For a short time he acted as a surgeon at the Edinburgh Infirmary, but coming to London in 1804 he bought the Windmill Street School of Medicine which had been founded by William and John Hunter more than fifty years before. He was appointed surgeon to the Middlesex Hospital in 1814 where his teaching did much to increase the number of students and add to the reputation of the hospital. He resigned his office in 1836 having been decorated a Knight of Hanover of the Order of the House of Guelf. He then returned to Edinburgh as the University Professor of Surgery and died of angina pectoris on the 28th of April, 1842, whilst on a visit to a friend near Worcester.

Bell wrote on Anatomy and Surgery but his most lasting work was in connection with the nervous system. He pointed out in 1811 as a result of experiment that the posterior roots of the spinal cord had a sensory function whilst the anterior roots were concerned with motion. "The nerve of Bell" and "Bell's Palsy" have preserved his name for posterity.

BELL'S PALSY

At Middlesex Hospital, in a clinical lecture on partial facial paralysis he spoke in connection with the following case: Daniel Quick, age 70, had been brought to him by one of his students, who had observed him sweeping the streets and had noticed that one of his eyes was staring wide open and red: the cheek on the same side was loose and pendulous, and the mouth was dragged to one side. His attention being attracted by these appearances, he was led to question the man as to the cause of them.

Twelve years ago his face was "all right," but, he said, pointing to the scar in the angle of the jaw on the left side, ever since he received a wound in that part, from being tossed by a bullock, his face has been in the same condition in which it

Unable to display this page

it was always observed that the cornea was tilted upwards so as to be completely concealed behind the upper eye-lid. This is a motion of the eye-lid which Mr. Bell first described in his papers upon the nerves within the orbit; and he has on former occasions pointed it out to the pupils of this hospital. Being curious to discover the position of the eye during sleep, the reporter of this case went to the patient's house. His wife told him, that what her husband said about his closing the left eye was correct, and that it was open even when he was sound asleep. Being then asked in what direction he appeared to be looking while he was asleep, whether he fixed his eyes on her? "No sir," she said, "that cannot be, for there is only the white of his eye seen." Being further questioned, she said, that a small part only of the black of his eye could be perceived; at the margin of the eyelid; but she was quite sure he could not see her.

The muscles of the cheek on the left side are wasted, and there appears to remain nothing but the thin integuments, which hang upon the side of the face, as if dead, without having any action in them or wrinkles, as in the right cheek; and when he speaks, this cheek is alternately puffed out and then collapsed, the air first distending it,

as it were a bag, and then escaping at the angle of the mouth.

The left nostril lies flat and is not at all distended while he draws a deep breath, or makes the motion of sniffing up.

His whole mouth is drawn to the right side, thus producing a most remarkable distortion of the face. Whatever action there is in the mouth it is altogether owing to the contraction on the right side of it; the left angle hangs loose, and is quite passive; and the saliva is allowed to flow constantly out upon the lower lip on this side.

In regard to sensation, that is wanting only in the integuments over the cicatrix, and a little way above it, just before the ear. Otherwise, in all the parts of the head and face, it is quite perfect. *Nervous System of the Human Body, London, 1830. Pp. vii and viii, appendix.*

CHAPTER XIV

JOHN COLLINS WARREN (The Advocate of Ether Anesthesia)

1778–1856

COMING of prosperous farming stock, John Collins Warren was the son of a doctor, one of the founders of the Harvard Medical School and the father of more than one generation of distinguished doctors. His mother Abigail was the daughter of the Governor of Rhode Island (1786–1789). Educated at Harvard, John Collins Warren took postgraduate courses at Guy's Hospital on coming to London in 1799. Here he became the lifelong friend of Sir Astley Cooper. He went on to Edinburgh, then the centre of clinical teaching, and on returning home settled at Park Street, Boston, where he soon attracted notice and was offered various chairs on anatomy and surgery. As surgeon to the Massachusetts General Hospital he is remembered as operating on the first patient under ether on the 16th of October, 1846, the anaesthetic being given by the dentist, W. T. G.

Morton. He published in 1828 surgical observations on tumours with cases and operations. The work is well written and is evidently based upon the lectures which he delivered in Harvard University. It is also charmingly written and the cases are told most graphically. It may be remembered that no anaesthetics were used. Here is an example:

A TUMOUR OF THE THYROID GLAND

"Eunice Young, Aet. 45, married, entered the M.G. Hospital, Sept. 14, 1836. Two years ago, she perceived a tumour growing on the left side of the neck, slowly at first, but rapidly of late. It is about three inches long and two broad, and situated on the left side of the trachea and larynx, is so intimately connected with these parts, that every motion of swallowing gives a correspondent movement of the tumour. The sternomastoid muscle lies over it. It has no pulsatory motion. She experiences an increasing difficulty in swallowing, amounting to what she calls choking.

"The patient being in the upright posture, an incision nearly four inches long was carried along the anterior edge of the sterno-mastoid muscle.

This exposed the platysma, which being incised, the edge of the sterno-mastoid muscle presented. On turning this aside the sterno-hyoid and sterno-thyroid muscles were perceived to cover the tumour in such a way that it was necessary to separate these muscles from each other and dissect between them. The surface of the tumour being brought into view, was fully exposed by dissection. Then by the handle of the knife it was separated from the sheath of the carotid artery, and there was appearance of its coming out without difficulty; but on getting under it, a solid adhesion was found to the trachea for one or two inches, and also to the oesophagus for a small extent. These adhesions required the knife. The dissection then being pursued upwards and backwards to extract the superior cornu of the gland, the superior thyroid artery was divided in so deep a situation, that it was impossible to draw it from between the muscles. The carotid artery having its sheath already exposed for some extent, was tied. The inferior thyroid artery either did not exist, or did not bleed.

"The patient had a sense of sinking at the epigastrium, in the afternoon, and, in the following day, a pain in this part, which continued forty-

eight hours. As she had bled freely from the thyroid artery, it was not thought expedient to bleed from the arm; although the symptoms arose probably from a change in the course of the circulation, in consequence of the ligature of the carotid artery. By the use of injections, and of hot applications to the part, she obtained relief, and had no other bad symptom till the fifth day. On the day preceding that, she was clamorous for food, and not being allowed it, she left her bed when unobserved, in the evening, and got a biscuit which she had secretly treasured up. Not satisfied with this imprudence, after the nurse had retired, she arose, and with naked feet crossed the floor of the apartment to blow out the lamp, which was set for the night. In consequence of these acts, she was seized with a bad chill, pain in the stomach, and subsequent fever, which kept her down some time. The ligature separated from the carotid on the thirteenth day.

"The wound healed soon after, and she left the hospital in about a month from the operation.

"The tumour, on being examined, was found to be covered with a firm fibrous sheath, and to consist of a spongy texture, in which appeared a considerable number of cells, some of them of a large size, containing a bloody fluid. In colour

it resembled the usual appearance of the thyroid gland. Its consistence was firm, but not scirrhous, excepting at its upper horn, which had begun to assume a scirrhous texture in consistence and had a white colour.

"The fact of there being no bleeding from the inferior thyroid is remarkable, and I was at a loss to understand it, till, in the subject which I used in my lectures to demonstrate the arteries, this artery, as you may recollect, was wanting. In that case, no inferior thyroid proceeded to the thyroid gland on the right side; but the right inferior thyroid, arising further outwards than usual towards the shoulder, instead of going to the gland, entered the vertebral cavity between the fifth and sixth cervical vertebrae. This peculiarity led me to preserve the head and upper part of the trunk of the subject, which had been dissected and dried, and you may now see the whole system of arteries, from the subclavian, exhibiting this peculiarity, and another, which consists in the entrance of the right vertebral into the spine, two vertebrae higher than usual.

"At this time, I have under treatment the case of a young lady, of this vicinity, who has a tumour situated precisely like that I have described, and of the same form and appearance, though not so

large. I have not yet advised its removal, believing it proper to try every expedient for its cure, before resorting to operation." *J. C. Warren, Surgical Observations on Tumours, Boston, 1837, London, 1838, p. 304.*

CHAPTER XV

SIR BENJAMIN COLLINS BRODIE
(President of the Royal Society)

1783–1862

BENJAMIN BRODIE was a great gentleman at a time when few surgeons were gentlemen. The fourth son of a Wiltshire clergyman, he was educated by his father and was indirectly connected with William and John Hunter. He was for many years surgeon to St. George's Hospital. He was amongst the first to make a special study of diseases of the bone, joints and breast. His name is still attached to "Brodie's abscess of bone" and "Brodie's disease of the breast." He did something for scientific surgery and caused the order of Fellows of the Royal College of Surgeons of England to be established in 1844. For his services at court he was made a baronet and he was the only surgeon who had the triple distinction of being President of the Royal Society, President of the Royal College of Surgeons in England, and President of the General Medical Council.

BRODIE'S ABSCESS OF BONE

He quotes the following case which appears to have been the first patient in whom he recognized the localized abscess at the lower end of the tibia which afterwards came to be known as "Brodie's abscess":

"Mr. P., about twenty-four years of age, consulted me in October, 1824, under the following circumstances:

"There was a considerable enlargement of the lower extremity of the right tibia, extending to the distance of two or three inches from the ankle-joint. The integuments at this part were tense, and they adhered closely to the surface of the bone.

"The patient complained of a constant pain, referred to the enlarged bone and neighbouring parts. The pain was always sufficiently distressing; but he was also liable to more severe paroxysms, in which his sufferings were described as most excruciating. These paroxysms recurred at irregular intervals, confining him to his room for many successive days, and being attended with a considerable degree of constitutional disturbance. Mr. P. described the disease as having existed more than twelve years, and as having rendered his life miserable during the whole of that period. In the

course of this time he had been under the care of various surgeons, and various modes of treatment had been resorted to without any permanent advantage. The remedies, which I prescribed for him, were equally inefficacious. Finding himself without any prospect of being relieved by other means, he made up his mind to lose the limb by amputation; and Mr. Travers having seen him with me in consultation, and having concurred in the opinion that this was the best course which could be pursued, the operation was performed accordingly. It is right that I should state briefly the termination of the case; especially as the circumstances attending it were probably connected with a peculiar condition of the nervous system occasioned by the long continuance of the local disease. Unfortunately I preserved no notes of this part of the case at the time; but I have no doubt that my recollection is accurate as to the following particulars. The patient bore the operation with the utmost fortitude, but immediately afterwards he was observed to become exceedingly irritable, restless, and too much disposed to talk. Unfortunately, in the evening, there was haemorrhage from the stump: which ceased, however, on the removal of the dressings and coagulum. During the night he had no sleep; and on the follow-

ing day he was restless and incessantly talking, with a rapid pulse. These symptoms became aggravated. There was no disposition to sleep, and the pulse became so rapid that it could be scarcely counted. Until the third or fourth day the tongue remained clean and moist. After this period it became dry, and somewhat brown, and there was constant delirium. The pupils were widely dilated, and the sensibility of the retina was totally destroyed; the glare of a candle not being perceptible even when held close to the eye. Death took place on the fifth day after the operation. No morbid appearances were observed in the post-mortem examination.

"On examining the amputated limb, it was found that a quantity of new bone had been deposited on the surface of the lower extremity of the tibia. This deposition of new bone was manifestly the result of inflammation of the periosteum at some former period. It was not less than one third of an inch in thickness; and, when the tibia was divided longitudinally with a saw, the line at which the new and old bone were united with each other was distinctly to be seen.

"The whole of the lower extremity of the tibia was harder and more compact than under ordinary circumstances, in consequence, as it ap-

peared, of some deposit of bone in the cancellous structure; and in its centre, about one third of an inch above the ankle, there was a cavity of the size of an ordinary walnut, filled with a dark-coloured pus. The bone immediately surrounding this cavity was distinguished from that in the neighbourhood by its being of a whiter colour, and of a still harder texture, and the inner surface of the cavity presented an appearance of great vascularity. The ankle-joint was free from disease.

"It seems highly probable that, if the exact nature of the disease had been understood, and the bone had been perforated with a trephine, so as to allow the pus collected in its interior to escape, a cure would have been effected, without the loss of the limb, and with little or no danger to the patient's life. Such, at least, was the opinion which the circumstances of the case led me to form at the time; and I bore them in my mind, in the expectation that, at some future period, I might have the opportunity of acting on the knowledge, which they afforded me, for the benefit of another patient." *Brodie Diseases of the Joints, London, 1836, Ed. 4. Page 299.*

CHAPTER XVI

SIR JAMES PAGET (The Very Wise Surgeon)

1814–1899

"Go to Sir James Paget to tell you what is the matter with you and then to Sir William Fergusson for the operation" was a common saying in the middle of the last century. The advice was excellent, Paget had great wisdom gained partly by his knowledge of surgical morbid anatomy, partly from his unrivalled clinical experience. For many years patients with rare or obscure surgical conditions were sent to him from all parts of Great Britain. Through the two small rooms — a dining-room serving as a waiting-room separated by a twelve foot passage from the tiny study used for examination of the patient — passed all that was worth seeing in the world of surgery. Perfectly honest, not self-seeking, not grasping for money and never late for an appointment, he gave of his best to everyone who consulted him. A charming speaker and a master of perfect English the cadences of his voice still ring in the sen-

tences of his writings. His home life was perfect and simple. Two of his sons became bishops, the one of Oxford, the other of Chester and the third, Stephen, inherited his father's gifts both of writing and speaking. The name of Sir James Paget is associated in surgery with "Paget's disease of the nipple" and "osteitis deformans."

THE FIRST CASE OF OSTEITIS DEFORMANS

Paget says "The patient on whom I was able to study it was a gentleman of good family, whose parents and grand-parents lived to old age with apparently sound health, and among whose relatives no disease was known to have prevailed. Especially, gout and rheumatism, I was told, were not known among them; but one of the sisters died with chronic cancer of the breast.

"Till 1854, when he was forty-six years old, the patient had no sign of disease, either general or local. He was a tall, thin, well-formed man, father of healthy children, very active in both mind and body. He lived very temperately, could digest, as he said, anything, and slept always soundly.

"At forty-six, from no assigned cause, unless it were that he lived in a rather cold and damp place

in the North of England, he began to be subject to aching pains in his thighs and legs. They were felt chiefly after active exercise, but were never severe; yet the limbs became less agile or, as he called them, "less serviceable," and after about a year he noticed that his left shin was misshapen. His general health was, however, quite unaffected.

"I first saw this gentleman in 1856, when these things had been observed for about two years. Except that he was very grey and looked rather old for his age, he might have been considered as in perfect health. He walked with full strength and power, but somewhat stiffly. His left tibia, especially in its lower half, was broad, and felt nodular and uneven, as if not only itself but its periosteum and the integuments over it were thickened. In a much less degree similar changes could be felt in the lower half of the left femur. This limb was occasionally but never severely painful, and there was no tenderness on pressure. Every function appeared well discharged, except that the urine showed rather frequent deposits of lithates. Regarding the case as one of chronic periostitis, I advised iodide of potassium and Liquor Potassae; but they did no good.

"Three years later I saw the patient with Mr.

Unable to display this page

Unable to display this page

"The spine very slowly became curved and almost rigid. The whole of the cervical vertebrae and the upper dorsal formed a strong posterior, not angular, curve; and an anterior curve, of similar shape, was formed by the lower dorsal and lumbar vertebrae. The length of the spine thus seemed lessened, and from a height of six feet one inch he sank to about five feet nine inches. At the same time the chest became contracted, narrow, flattened laterally, deep from before backwards, and the movements of the ribs and of the spine were lessened. There was no complete rigidity, as if by union of bones, but all the movements were very restrained, as if by shortening and rigidity of the fibrous connections of the vertebrae and ribs.

"The shape and habitual posture of the patient were thus made strange and peculiar. His head was advanced and lowered, so that the neck was very short, and the chin, when he held his head at ease, was more than an inch lower than the top of the sternum.

"The short narrow chest suddenly widened into a much shorter and broad abdomen, and the pelvis was wide and low. The arms appeared unnaturally long, and, though the shoulders were very high the hands hung low down by the thighs and in front of them. Altogether, the attitude in stand-

ing looked simian, strangely in contrast with the large head and handsome features.

"But with all these changes in shape and mobility of the head, spine, and lower limbs, the upper limbs remained perfect, and there was no disturbance of the general health.

"In December, 1872, sight was partially destroyed by retinal haemorrhage, first in one eye, then in the other, and at nearly the same time he began to be somewhat deaf. In the summer of 1874 he had frequent cramps in the legs, and neuralgic pains, which were described as "jumping over all the upper part of the body except the head," but change of air seemed to cure them.

"In January, 1876, he began to complain of pain in his left forearm and elbow which, at first, was thought to be neuralgic. But it grew worse, and swelling appeared about the upper third of the radius and increased rapidly, so that, when I saw him in the middle of February, it seemed certain that a firm medullary or osteoid cancerous growth was forming round the radius.

"Still the general health was good. Auscultation could detect mitral disease, but the appetite and digestion were unimpaired, the urine was healthy, the mind as clear, patient, and calm as ever. As letters about him at this time said "his

general health has been excellent"; "he is free from pain except in the left arm; he sleeps well, enjoys himself, and does not know what a headache is."

"After this time, however, together with rapid increase of the growth upon the radius, there were gradual failure of strength and emaciation, and on the 24th of March, after two days of distress with pleural effusion on the right side, he died."

Some of the bones showing the changes described by Sir James Paget are preserved in the Pathological Museum of St. Bartholomew's Hospital. *Medico-Chirurgical Transactions, 1877, Vol. 60, pp. 37–41.*

WHAT BECOMES OF MEDICAL STUDENTS

Sir James once wrote as follows:

"It is said that, on entering the anatomical theatre for one of his Introductory Lectures, Mr. Abernethy looked round at the crowd of pupils and exclaimed, as if with painful doubt: *God help you all! what will become of you?*

"I am not aware that any attempt has hitherto been made to answer such a question. The grounds on which I venture an answer are in the

knowledge of what became of a thousand of my pupils within fifteen years of their entrance at St. Bartholomew's Hospital. The number may suffice for the grounds of that degree of general belief which, in a matter of this kind, is as near an approach to knowledge as we are likely to attain. And I believe that what may be told of the pupils of St. Bartholomew's would hold true of those of all the metropolitan schools, for with us the varieties of students, according to difference of birth, wealth, and previous education, are collected, I believe, in very nearly the same proportions as would be found in all the other metropolitan schools together.

"The pupils from whose careers the following notes are derived were among those who attended, either my Demonstrations of Morbid Anatomy between 1839 and 1843, or my Lectures on General and Morbid Anatomy and Physiology between 1843 and 1859. Of the former, I kept no complete lists, but have the names of 95; of the latter, I have complete lists, containing 1,131 names. Of the total, 1,226, many have been quite lost sight of. The career of 1,000 are known either to myself or to Mr. G. W. Callender or Mr. Thomas Smith, or all of us; for we have worked together for this essay.

Of the thousand:

23 achieved distinguished success.
66 " considerable success.
507 " fair success.
124 " very limited success.
56 failed entirely.
96 left the profession.
87 died within twelve years of commencing practice.
41 died during pupilage.

"In this table, they are classed as having achieved distinguished success who, within fifteen years after entering, gained, and to the end of the time maintained, leading practices in counties or very large towns, or held important public offices, or became medical officers of large hospitals, or teachers in great schools, as the Professors of Anatomy in Oxford, Cambridge, and Edinburgh, all of whom it was my singular good fortune to have for pupils.

"Considerable success is ascribed to those who gained and still hold high positions in the public services, or leading practices in good districts, or who retired with money earned in practice, or gained much more than ordinary esteem and influence in society.

The fair or moderate success which was the

lot of rather more than half those whose histories are known, was that measure of well-doing which consisted in having a fair practice — enough to live with — maintaining a good professional and personal reputation, or in holding ordinary appointments in the public services, or in the colonies, and gaining promotion in due course of time.

"Very limited success is assigned to those who, within the fifteen years, were not even in moderately good practice, or apparently likely to attain it; or who were just living, and that not very well, by their work; or still employed as assistants in ordinary practices, or erratic and never prosperous; or doing much less than, with their education and other opportunities of success, they should have achieved.

"They who failed entirely were a very mixed class, agreeing only in their total want of success. Of the 56 who made up the gloomy total, 15 were never able to pass examinations — some because of idleness or listlessness, a very few though sheer want of intellect. Of those who did pass, 5 failed because of scandalous misconduct; 10 through ill-health, or misadventure, sheer ill-luck as it seemed; and 10 through their continuance in the same habits of intemperance, or dissipation as had

made us, even while they were students, anticipate their failure. Of the remaining 16 we only know that they have failed; they are not in disrepute, but they are barely maintaining themselves.

"It will seem strange to everyone, I think, that so many as 96 that is, nearly 10 per cent. of the whole number, left the profession after beginning either its study or its practice; and it is even less flattering to our calling that, to set over against those who left us, there were only 7 who came to us from other studies or pursuits in life, and 5 of these again changed their minds and never engaged in practice.

"Of the whole number, 13 while pupils left or were expelled in disgrace, and 3 were wisely removed by their friends. Of the remaining 80, 1 while still a pupil, and 1 after beginning practice, retired on private means, too rich to need to work; 4, after beginning practice, had to leave in disgrace — 1 of these was rather sinned against than sinning; another, who had been a good student, speculated in mines, lost money, forged, and is in prison; 3 became actors — of whom 2 are in obscurity, and 1 is well esteemed in genteel comedy; 4 entered the army with commissions, 1 after and 3 before obtaining a diploma for practice; 3 pupils enlisted as privates, and 1 of these distinguished

himself by courage and good conduct sufficiently to win a commission; 1, while a pupil, left for the bar, and has succeeded; 5, after passing, took orders in the Church of England, 2, in the Church of Rome; 10 pupils, and as many after having begun practice, left for different forms of mercantile life at home or in the colonies; 3 pupils and 6 young practitioners took to farming. The remaining 27 left the profession for various pursuits, which need not be specified, unless to say that 3 became homeopathic practitioners, but took to that class no repute for either wisdom or working power.

"On the whole, looking over the list and remembering the characters of those who left the profession for other pursuits, there appears no reason for believing that they have 'bettered' themselves. Some have succeeded, some have failed; the result would have been, I think, the same if they had remained in their first calling.

"Last comes the melancholy list of deaths, telling that of those who entered nearly 13 per cent. were dead within fifteen years. Of these 41 died while yet pupils, including 17 who died of phthisis, 4 (at least) of fever caught in the Hospital, and 2 who committed suicide; 87 died after beginning practice, some after attaining great suc-

cess, some after long and vainly struggling in ill-health; 21 died of diseases incurred in their duties; 5 committed suicide, 2 of them under circumstances of great disgrace; 1 was hung, the notorious Palmer, who committed murder at Rugeley — he was an idle, dissipated student, cursed with more money than he had either the wisdom or the virtue to use well.

"This, then, is what became of a thousand medical students; and, probably, the same lots, or nearly the same, in life have fallen or will fall to as many thousands more. It would be interesting if, with facts such as these, one could compare our profession with others, as to the chances and degrees of success that it offers to its students. But I know no facts that would serve for a comparison; nor would any be fair unless account were taken of the several amounts of capital in time or money expended upon each pursuit, and the times of reaching and the securities of retaining success in each, and their various social advantages and happinesses. On all these points we are without knowledge.

"There might seem more hope of being able to tell the influence of different modes of education on the afterlife of medical students; and thence of deducing some scheme that should

greatly increase the successes and decrease the failures. But to do this with accuracy would require many more facts than any one is likely to obtain. Of course in watching and reflecting on the careers of my pupils, I have come to some strong beliefs on subjects of medical education; but this is not the place for publishing them. Only one I will set down, which may be of use to future pupils, and is justified by some hundreds of personal recollections. In remembering those with whom I was year after year associated, and whom it was my duty to study, nothing appears more certain than that the personal character, the very nature, the will, of each student had far greater force in determining his career than any helps or hindrances whatever. All my recollections would lead me to tell that every student may draw from his daily life a very likely forecast of his life in practice, for it will depend on himself a hundredfold more than on circumstances. The time and the place, the work to be done, and its responsibilities, will change; but the man will be the same, except in so far as he may change himself. *St. Bartholomew's Hospital Reports, Vol. V, 1869, p. 238.*

CHAPTER XVII

JOSEPH, LORD LISTER

1827–1912

LORD LISTER requires no introduction to the present generation of surgeons. Born into a Quaker family he inherited many of the qualities which have rendered members of the Society of Friends successful in business and respected by all with whom they were brought into contact. His originality, his doggedness, his courtesy and the imperturbability of his temper were clearly inherited qualities. He had the good fortune to be the son of a father who was interested in science and had made a competence in the port wine trade. He was educated at the University of London and at University College Hospital. Passing from there he went to Edinburgh as assistant to James Syme the great Scotch surgeon whose daughter he afterwards married. From Edinburgh he passed to Glasgow and from there returned to Edinburgh. At Glasgow and in Edinburgh he developed a surgical technique which resulted in a

complete revolution in the practice of surgery throughout the world. It abolished suppuration and enabled surgeons to perform with safety operations upon every part of the body. His methods met with bitter opposition and neglect both in England and in Scotland but were received with greater tolerance in Scandinavia, France, Germany and Austria. Returning to England as surgeon to Kings College Hospital in London he hoped to spread his knowledge amongst his countrymen. He had a long and arduous struggle in which he sometimes lost heart but eventually the younger generation of surgeons became convinced. To show how difficult was his task the following extract is taken from an address which he delivered at the Medical Society of London on the 29th of October 1883. It is notable because it concluded with the words "Gentlemen, I thank you most heartily for that cheer; for there was a time when such remarks proceeding from me might have met with a different reception." He said afterwards that it was the first occasion when he had been cordially received by his surgical colleagues in London. The subsequent reports, however, showed that the discussion had not been entirely in his favour. It is noteworthy that the

first case mentioned was as far back as 1877 and he was speaking in 1883.

TREATMENT OF FRACTURE OF THE PATELLA

"In October 1877 a patient with transverse fracture of the patella was admitted under my care in Kings College Hospital. He was a man of forty years of age, who, while riding, was thrown over the horse's head, and fell on the right knee. He could not rise, and was brought to the hospital. In the first instance, I attempted with this patient to bring the upper fragment down so that it should be in contact with the lower. For this purpose I applied an apparatus which was so arranged that the upper fragment could be drawn down by means of weights and pulleys. Four days later, however, I found that there was still a quarter of an inch interval between the fragments, and I suggested the operation of cutting down and applying the wire suture. This, however, he would not then consent to, and preferred returning home to be under the care of his ordinary medical attendant. Eight days later, or fourteen days after the accident, he was readmitted, expressing a wish

to be operated upon. On October 26th I accordingly proceeded to operate, making a vertical incision about two inches in length over the patella, exposing the fragments, which were then one inch apart. My inability to bring down the upper fragment into contact with the lower became explained when the parts were exposed; for there were found between the fragments exceedingly firm coagula, with fibrous tissue, fascial and periosteal, mingled with them. The clots having been cleared away from between the fragments and from the interior of the joint, I applied a common bradawl in the middle line of the patella, drilling each fragment obliquely so as to bring out the drill upon the broken surface a little distance from the cartilage. Pretty stout silver wire was then passed through the drilled openings and the fragments brought accurately into position. Before they were brought together, however, an arrangement was made for the drainage of the joint. This was done on the same principle in all the cases that I have to record, and I may therefore describe the matter once for all. A pair of dressing forceps with the blades closed were passed through the wound to the most dependent part of the joint at its outer aspect. The instrument was then forcibly thrust through the synovial

membrane, the fibrous capsule, and the fascia, until the point of the forceps was felt under the skin. An incision was next made with a knife through the skin upon the end of the dressing forceps so as to allow it to protrude. The blades of the forceps were then expanded so as to enlarge the opening which they had made in the deeper structures without risk of causing haemorrhage. The drain was then seized in the forceps that protruded through the wound and drawn into the joint. The ends of the wire were now twisted together and the twisted ends brought out at the wound, which was closed with sutures and a small drain inserted. The limb, enveloped in an antiseptic dressing, was placed in a trough of Gooch's splint, with the upper end oblique, corresponding to the line from the tuberosity of the ischium to the great trochanter, and the lower end excavated in the form of a horseshoe, while the horns of the horseshoe were well padded to support the sides of the foot. It is unnecessary for me to enter into details as to the progress of this case. The temperature chart indicates, after a little temporary disturbance immediately after the operation, an entirely afebrile condition. The wounds healed without any suppuration. At the end of eight weeks the wire was removed by an

incision through the cicatrix. Eight days later the wound made for the removal of the wire had healed. At the end of ten weeks from the operation the patient was allowed to get up; and though no passive motion had been employed he could move the limb freely through an angle of about 30°. Two days later he was discharged, and, unfortunately, nothing has been heard of him since."

The subsequent discussion showed that a fractured patella which was not operated upon usually invalided the patient for a period of four to twelve months, and the result even then was unsatisfactory. *The Medical Society's Proceedings, Vol. VII, 1884. Pp. 12 and 13.*

A CASE OF COMPOUND FRACTURE TREATED BY CARBOLIC DRESSINGS

The first case which Lister treated with carbolic dressings was a boy of eleven who recovered; the second case was a man of 32 who was well on the way to recovery until he ceased to be under Lister's treatment when he died of hospital gangrene; the third case is here given in his own words:

"John H., aged twenty-one, a moulder in an iron foundry, was admitted on the 19th of May,

1866, with compound fracture of the left leg, produced in the following manner. He was superintending the raising by crane of an iron box containing sand ready for a casting, the box and its contents weighing about 12 cwt., when one of the chains by which it was suspended slipped, and the box fell from the height of four feet with unbroken force upon the inner side of his leg, which was planted obliquely beneath it. Both bones were fractured, the tibia about its middle, and a wound an inch and half in length, and three-quarters of an inch broad, was made at the inner aspect of the limb, on a level with the fracture of the tibia, and obviously communicating with it. At the same time the soft parts generally were much contused, as was evident from the great distension of the limb with extravasated blood. Dr. A. Cameron, my house surgeon, finding, on manipulating the limb, that bubbles escaped along with the blood, implying that air had been introduced during the movements of the leg as the patient was being carried to the infirmary, thought it best that I should see the case, which I did at three P.M., three hours and a half after the accident. In order to expel the air I squeezed out as much as I could of the clotted and fluid blood which lay accumulated beneath the skin,

and then applied a bit of lint dipped in carbolic acid slightly larger than the wound, and over this a piece of sheet-tin about four inches square. Finally the limb was placed in pasteboard splints, resting on its outer side with the knee bent. At eight P.M. some more acid was added with another piece of lint, so that the crust of clots, carbolic acid, and lint was about one-third of an inch in thickness. A hot fomentation also was applied over the inner aspect of the leg, the crust being protected by the tin. Next day he was pretty easy and had passed a quiet night, though occasionally awakened by starting pains; the pulse was 90, but he took some food with relish. The surface of the crust was touched again with carbolic acid, and the fomentation was continued, and in place of the internal pasteboard splint, a large sheet of tin was applied over the flannel from the knee to the ankle, being retained in position by looped bandages. This proved a very satisfactory arrangement, the tin having sufficient firmness to answer the purpose of a splint, while it most effectually retained the moisture of the flannel, which again served as an excellent padding. The fomentation was changed night and morning, and gave great comfort to the patient, and once a day carbolic acid was applied lightly to the crust.

"Two days after the accident the limb was easier, but the circumferential measurement of the calf continued the same, and the pulse was 96, thought soft. On the fourth day – the critical period with reference to suppuration – the limb was free from pain, and the calf less tense, and distinctly reduced in dimensions; while the pulse had fallen to 80, and the patient had enjoyed his food after a good night's rest. After this the swelling steadily subsided, the skin remaining, as it had been from the first, free from the slightest inflammatory blush, and his general health was in all respects satisfactory. Seven days after the receipt of the injury there was some puriform discharge from the surface of the skin where the carbolic acid, confined by the smaller piece of tin that covered the crust, had produced excoriation by its caustic action; and to prevent needless irritation from this cause, the tin was reduced so as to leave only a narrow flat rim round a bulging part which corresponded to the crust.

"About a fortnight after the accident a sense of fluctuation was experienced over the seat of fracture, but, as all was going on favourably otherwise, I hoped that this was due simply to serum from the effused blood; and in a few days it had completely disappeared, not a drop of pus mean-

while having escaped from beneath the crust. About this time the edges of the crust became softened by the superficial discharge from the surrounding parts, and these softened portions were daily clipped away with scissors. Thus the circumferential part of the crust which had overlapped the skin was removed, and that which lay over the extravasated blood in the wound was also reduced to smaller and smaller size.

"On the 7th June, nearly three weeks after the accident, an observation of much interest was made. I was detaching a portion of the adherent crust from the surface of the vascular structure into which the extravasated blood beneath had been converted by the process of organization, when I exposed a little spherical cavity about as big as a pea, containing brown serum, forming a sort of pocket in the living tissues, which, when scraped with the edge of a knife, bled even at the very margin of the cavity. This appearance showed that the deeper portions of the crust itself had been converted into living tissue. For cavities formed during the process of aggregation, like those with clear liquid contents in a Gruyère cheese, occur in the grumous mass which results from the action of carbolic acid upon blood; and that which I had exposed had evidently been one

of these, though its walls were now alive and vascular. Thus the blood which had been acted upon by carbolic acid, though greatly altered in physical characters, and doubtless chemically also, had not been rendered unsuitable for serving as pabulum for the growing elements of new tissue in its vicinity. The knowledge of this fact is of importance; as it shows that, should circumstances appear to demand it, we may introduce carbolic acid deeply among the blood extravasated in a limb, confident that all will nevertheless be removed by absorption. A few days later all traces of the little cavity had become obliterated by the granulating process.

"At the close of the third week the application of carbolic acid to the crust was discontinued, and the original internal pasteboard splint padded with cotton was again employed, instead of the tin and fomentation. What remained of the crust was still kept protected with the tin cap, with the view of ascertaining how long it would continue to adhere; and at length, nearly four weeks after the accident, I tore it off from the vascular surface beneath, which bled as I did so. The crust had preserved the subjacent parts from disturbance as effectually as if it had been a piece of living integument; and it is worthy of remark that the

vascular surface below had not the pulpy softness of granulations, but was comparatively firm and substantial. The bit of crust still smelt of carbolic acid, though none had been applied for five days.

"At the expiration of six weeks from the receipt of the injury the fragments were found firmly united in good position, just as if the fracture had been a simple one, though the cicatrization of the rather extensive sore was not complete till a later period." *Lister's Collected Papers, Oxford, 1909, Vol. II, p. 7.*

ON THE CATGUT LIGATURE

The following extract shows the care which Lister exercised in all his experiments. For in preparing catgut ligatures he visited the slaughter houses to see the process by which they were obtained:

"Catgut, as you are all doubtless aware, is prepared from the small intestine of the sheep. The gut is treated in what seems an exceedingly rude manner for so delicate a structure. It is scraped with some blunt instrument, such as the back of a knife, over a board; and by this means, as the people express it, the dirt is scraped out. That which these persons call the dirt is the exquisite

and complicated structure of the intestinal mucous membrane. But while the mucous membrane is scraped out from within, there is also scraped off from without, the circular coat of muscular fibres. The result comes to be that the intestine is converted into a comparatively unsubstantial material, consisting of two parts, or bands, one more slender than the other. When the intestine is stripped from the mesentery by the butcher, the peritoneal covering of the gut shrinks into a narrow strip, and this, with some longitudinal fibres, constitutes the more slender of the two parts to which the intestine is reduced by the process of scraping. The other part is the essential material from which the catgut is prepared, and this is neither more nor less than the submucous cellular coat of the intestine. When I first visited a catgut manufactory I was astonished to find that, after this scraping process, the intestine could be blown up still as a continuous tube, as you see can be done with this specimen, which has been treated in the manner I have described. This translucent membranous tube is a beautiful anatomical preparation of the submucous cellular tissue, though made in so rude a fashion. This coat of the intestine, which in the sheep has such extraordinary toughness, is the material out of which the catgut

is prepared. For what the manufacturer terms the "ones" — the thicker form of ordinary catgut — all that is done is to twist the entire tube by means of a wheel, like a rope in a rope-walk, up to a considerable degree of tightness, and then allow it to dry. It is afterwards exposed to the fumes of burning sulphur, and for some more special purposes it is bleached by the action of potash. But the essential thing is the twisting and drying. It can be manufactured without sulphur, as well as without potash. Some specimens which I have here were made by means of water only without the use of any other ingredient. This exceedingly beautiful material, as fine and smooth as a horse-hair, is nothing but the animal tissue twisted and dried. For the finer kinds the submucous coat is split up by means of razor blades, more or less numerous, according to the degree of splitting required, connected with a conical piece of wood which is pushed along the tube. Such then is the material with which we have to deal." *Lister's Collected Papers. Oxford 1909, Vol. II, p. 107.*

CHAPTER XVIII

SIR JONATHAN HUTCHINSON
(A Great Teacher)

1828–1913

A YORKSHIREMAN by birth and a Quaker by religious profession Jonathan Hutchinson was equally at home in the diagnosis of patients suffering from surgical diseases and affections of the eye and skin. He was a great advocate for post-graduate teaching and collected such a mass of material to illustrate his lectures that many duplicates were sent to the United States. Syphilis was amongst his many interests and as early as 1876 he stated (*Path. Soc. Trans. 1876 — xxvii — 341*) that the cause of the disease was a microbe contagious and transmissible only so long as the microbe retained its vitality. "Someone will see it one day for it is beyond doubt that it must be there." (Page 440.) He was fortunate in living to see the fulfilment of his prophecy, when on March 3rd 1905 Fritz Schaudinn showed Erich Hoffman the spirillum afterwards called the spirochaete

pallidum. Hutchinson was instrumental in causing syphilis to be treated continuously for long periods of time with small doses of grey powder. Before his time it had been customary to treat the symptoms and not the disease itself. He lives in the history of surgery as "Hutchinson's Triad" that is to say Interstitial Keratitis, deafness and deformed teeth which are sometimes characteristic of inherited syphilis. The first fruits of his observation appeared in the paper contributed to the Pathological Society, May 10th, 1858 (*Trans. Pathol. Soc., 1857–8, IX, pp. 449–456*).

HUTCHINSON'S TEETH

Hutchinson says: "For a considerable time past I have been in the habit of recognizing in a certain very peculiar development of the permanent teeth an indication that their possessor had in infancy suffered from hereditary syphilis. A remark to this effect, which I made at a meeting of the Pathological Society early in the past session being received with expressions of incredulity, it occurred to me, that it might be well to make public such evidence as I possessed on the subject. With that view, the facts which are the basis of the following report were collected. My friend Mr. Coleman,

our dentist at the Metropolitan Free Hospital" entered with zeal into the subject, and readily agreed to take casts of the teeth of any patients I should send him.

"Most of the cases taken, were those of patients attending at the Royal Ophthalmic Hospital on account of chronic interstitial keratitis, an affection which is, I believe, almost always a result of inherited syphilis. Their ages varied from twenty-eight years to five years. In all a clear history of syphilis was established, either by the free confession of the patient's parents, or by the account given of symptoms of undoubted character during infancy. The number of casts taken was thirteen and in all instances a stereographic portrait of the patient was also secured, which in many cases, illustrates very well the peculiar physiognomy impressed by the disease. With these remarks as to the nature of the evidence I will now pass to the conclusions arrived at.

"That there is a peculiar condition of the teeth, which results from the influence of hereditary syphilis and that the most frequent features of this condition are the following:

"*a.* Smallness. – The teeth stand apart with interspaces, and are rounded and peggy in form, instead of flat.

"*b.* Notching. — They usually exhibit in their border a broad shallow notch, or at times, two or three (serrated). Owing to their softness; these teeth rapidly wear away, and this notching is thus often obliterated, but when markedly present, it is one of the most decisive conditions.

"*c.* Colour. — Instead of the clear smooth, white exterior of good teeth, they present a dirty greyish surface, totally destitute of polish and rarely smooth. No amount of cleaning will materially alter this feature which owes its existence, I believe, to the great deficiency of enamel.

"*d.* Wearing down. — As before observed their softness from deficiency of enamel renders them liable to premature wearing down. The teeth of a syphilitic patient not twenty will often be ground down as much as those of a very old person should be, and this in cases in which there is no peculiarity as to position, such as the front teeth meeting in the bite. An unusual degree of wearing down if coexistent with other peculiarities is then a suspicious condition.

"*e.* — The signs mentioned apply almost exclusively to the incisors and canines, and in fact the grinders are usually altered in a very much less degree. Their surfaces are often more uneven than those of healthy teeth, and now and then

they present tubercular projections of a very peculiar character.

"These conditions are totally distinct from those produced by the ravages of caries. Very often the mouth of an hereditarily-syphilitic patient will present a full set of teeth quite free from decay, but all of them marked with features of unmistakable peculiarity. As a general rule, however, they are very liable to caries. Of course it is only when several of the conditions enumerated exist together, that a confident opinion can be given, and then it is the regularity of the type, and the fact that it marks all the front teeth in both jaws, which offers the best means of distinguishing it from other forms of disease or irregularity.

"The above remarks apply only to the permanent set. The milk-teeth of syphilitic-infants, are liable to exfoliate before being cut, and after having been cut, are often of small size, bad colour, and very liable to decay, but the notching and the peg-like form are rarely noticed."

Fifty-one years later he writes: "Although my opinions concerning the value of malformed teeth as indicative of congenital syphilis have undergone no important modifications since the publication of my first papers on this subject in 1858, yet I have in various directions become acquainted

with details with which at that time I was not familiar. If I were now asked whether the teeth may be treated as conclusive, in the absence of history and of corroborative conditions, I would answer, without hesitation — as, indeed, I have done in an earlier chapter — that in many cases they may. There are teeth — and they are seen not very infrequently — so characteristic that I should feel sure, in the absence of all other facts, that the possessor of such teeth must have inherited syphilis. In a large majority of cases, however, the teeth are not so characteristic as to justify such an opinion; they suggest suspicion only, and are to be allowed more or less weight in different instances, and in relation with the corroborative facts. That the employment of the malformations of the teeth, as symptoms, is a matter of much practical difficulty I have had abundant opportunities for knowing. In many cases patients have been sent to me as "obviously syphilitic," and as having "typical teeth," in whom I could not find any reason to suspect inherited taint. It may be worth while, therefore, that I should endeavour to specify some of the more common risks of error.

"The first danger is forgetfulness of the fact that the milk teeth are never characteristically malformed; and the next, neglect of the rule that

it is to the upper central incisors, almost solely, that we should look. It is quite true that the other teeth, more especially the incisors of the lower set, are often malformed at the same time, but their peculiarities are not characteristic; and although these may be very conspicuous, they may be, and usually are, due to other causes than syphilis.

"It is quite true that the milk teeth in syphilitic children are often very peculiar. In my original papers, as well as subsequently, I gave some good pictorial illustrations of the manner in which the milk teeth usually suffer. Sometimes the tooth-sacs suppurate, and the crowns of the teeth, almost always the upper central incisors, are exfoliated before they are cut. The occasional occurrence of this is one of the strongest facts which I can adduce in support of the assertion that the gums and tooth-sacs are liable to congestion and inflammation during the secondary stage of syphilis in infants. I have never witnessed this suppurative exfoliation of the upper incisors excepting in those who were syphilitic.

"In looking at the "test teeth," the upper central incisors, we must observe chiefly their size and their edges. Typical teeth have always a single notch, usually shallow, in the middle of

their edges. The notch is more or less crescentic, and is accompanied by a rounding off of the angles. The tooth is almost always dwarfed, both as regards its length and width; often very much so. It is not flattened out as a normal incisor is, but rounded, and more or less peg-like. In most cases the enamel is deficient in the middle of the notch, but not always. The teeth are often not properly placed, but incline either towards each other or in the divergent direction. They are seldom large enough to touch their neighbours on both sides." *Trans. Path. Soc. 1857, 58, IX, pp. 449–456, Syphilis, New and enlarged ed., London, 1909, p. 457.*

CHAPTER XIX

SIR WILLIAM MACEWEN (A Pioneer in Surgery)

1848–1924

WILLIAM MACEWEN, Professor of Surgery at the University of Glasgow, was a man of great originality and masterful withal. He adopted Lister's principles but not his methods for he struck out a line for himself and approached nearly to what is now called asepsis. The most active period of his professional life coincided with the advances made by Broca, Hughlings Jackson and Ferrier in localising the functions of the brain. He quickly took advantage of their results and within three years of the publication by Ferrier of his experimental work Macewen was operating upon a cerebral abscess the position of which had been previously diagnosed. The development of bone was amongst the problems he was always interested in and as an operating surgeon in the cure of knock-knee, and his name is handed down in "Macewen's Osteotomy" which was very often

performed when rickets in children was more common than it is at the present time. He also invented an operation for the radical cure of hernia.

ANTISEPTIC OSTEOTOMY

"The most suitable age for operating in knock-knee and bow-leg is from eight to about twenty years but it may be extended to thirty years. The operator must however bear in mind that osteotomy in the older patients is quite a different thing from that in the adolescent. The bones are much softer in young patients and yield more readily whilst as age increases they become harder and tend to split at right angles to the instrument unless the manipulation is proceeded with carefully.

"This leads to the consideration of the kind of instruments which ought to be employed, and the method of using them. It may be premised that some surgeons have expressed their belief that it is a matter of little moment what kind of chisel is used, provided it is strong enough; while others who practise the simple incision state that, as far as form is concerned, the ordinary carpenter's chisel is quite suitable. I cannot agree with these

opinions, believing, as I do, that the form and quality of the instrument are of very great moment. If one wishes to remove a wedge of bone, a chisel having the same form as the carpenter's would be suitable; the carpenter's chisel having one straight and one bevelled edge. In using such an instrument, the straight edge ought to be kept towards the surface which is to remain in the limb, the bevelled edge towards the part to be removed.

"If this chisel were used to divide by simple incision the femoral shaft at the knee, where there may be one to three inches of thickness, there would be a decided tendency for it to take a wrong course, in spite of the efforts of the surgeon to keep it correct. Instead of going directly in, it would incline toward the straight edge, and the further it penetrated the greater would this inclination become. To attempt to correct this wrong course half way through the shaft, would be making matters worse. On one occasion, a gentleman, while operating for knock-knee, introduced a chisel with the straight edge downwards, which penetrated a short distance and then sloped downwards instead of going straight in. The instrument, for some reason, was then removed and placed on the table. Afterwards it was picked up

and reinserted; this time, however, with the straight edge upwards. After traversing the aperture first made, it began to cut a course for itself, and soon turned upwards; so that the incision, instead of being straight, was zig-zag. It is, perhaps, needless to say that such a result would be serious in any case; and, in order to obviate this tendency, another form of instrument ought to be used.

"The form most suitable for the simple osseous division is one bevelled on both sides, so as to resemble a very slender wedge. Such an instrument passes easily into the bone, and maintains the direction given to it by the hand, having no tendency to glide either to one side or to the other. It is very easily withdrawn, and does not tend to become fixed in the same way as a chisel with a shoulder such as the carpenter's. If the bone be large and very dense, several chisels ought to be used. The first, being thick, makes the incision through the dense osseous surface on the inner side of the femur; the second, finer, is introduced into the groove made by the first, and comes into play directly on the deeper layers of the bone. A third may be used if necessary. On the other hand, in the adolescent, the bone may be found sufficiently yielding to permit the osteotomy to be completed by a single instrument; the aperture

assuming the shape of the instrument, v-shaped, with the base inwards. In performing such operations, the instrument must be thoroughly trustworthy. From what I have been able to gather through others, ordinary carpenter's chisels have been used by some surgeons, and they have been surprised that some of them have broken, leaving small pieces of steel in the interior of the bone. Now, the chisel ought to be made to suit the material upon which it is to act, not only in respect to its form, but also as to its temper and the "stuff" of which it is made. It ought to be made of very fine steel, tempered so as to prevent brittleness or too great softness. If it be brittle, it may leave a portion of metal in the tissues; if too soft, it will turn and curl up at the edge; of the two evils, the latter is the least.

"I have had several sets of instruments manufactured for me. The one I am now using has the handle and the blade all in a single piece. The handle is octagonal as it gives a better grip and enables the operator to detect more readily any deviation which the instrument may assume. The top of the chisel is furnished with a rounded projecting head, against which the thumb of the operator rests as he steadies the instrument; it also serves as a support whereby the instrument may

be gently levered out of the section. The figures 1 and 2 are placed near the head on the surfaces which correspond to the thickness of the blade in order that they may serve as a means of distinction when the blade is obscured in the tissues. The borders of the blade are marked with ½ inches, the figures being extremely light. The thickness of the bone can be ascertained in many cases and thus the distance to be penetrated can be predetermined. The figures on the border of the instrument point out the depth to which it has penetrated and thus serve as a guide. They are finally polished not for appearance but because the finer the surface the less opportunity will organic matter have of becoming adherent and afterwards decomposing.

"Now although there is nothing new in the principle on which this instrument is formed, yet its exact counterpart cannot be found out of surgery; and though clearly of the chisel order it has sufficient individuality to enable it to take a distinctive name. As the blade in shape resembles somewhat a transverse section on the blade of a pocket-knife and as it cuts much in the same way, it might be described as a knife for cutting bone; or, to employ a single word which would at once distinguish it from the ordinary chisel, and at the

same time be more euphemistic to a patient's ear it might be called an osteotome." *A Clinical Lecture on Antiseptic Osteotomy, The British Medical Journal, 1879, Vol. 1, p. 656.*

TWO CASES OF CEREBRAL SURGERY

"1. Case in which the Symptoms of Focal Cerebral Disease led to Diagnosis of Lesion in Broca's Lobe: 1876. While in possession of this knowledge a case of cerebral abscess presented itself to me in July, 1876. The general symptoms of this affection were clearly manifest. A cicatrix on the forehead marked the site of an injury under which the skull was bare. Had this cicatrix been taken as a guide to the localisation of the abscess, and an operation performed there, no abscess would have been found. But other phenomena were exhibited which enabled its seat to be definitely recognized. A convulsion, accompanied by loss of consciousness, commenced on the right side, and gradually involved the whole body. On its cessation absolute hemiplegia of the right side was present, and remained for two hours, during which the patient was aphasic. Both these phenomena became much less marked at the end of this period. From these symptoms the abscess was

diagnosed to be situated in the immediate vicinity of Broca's lobe. It was evident that the whole of the base of the left third frontal was not involved in a destructive lesion, otherwise the aphasia would have persisted for a much longer period, and it was probable that Broca's area had become involved in the inflammatory zone surrounding the abscess. Trusting to these localising symptoms, it was proposed to open the abscess aseptically by exposing Broca's lobe. Unfortunately, the result of a consultation was decidedly to negative this proposal. The parents then refused consent, notwithstanding the assumption by myself of the sole responsibility of advising and performing the operation. Thirty-six hours afterwards the convulsions returned and persisted until a fatal issue ensued. After death the friends acquiesced in the proposal to have the operation performed just as it would have been had permission to do so been granted during life. The skull was trephined, the brain exposed, and an instrument was introduced through the third frontal convolution for half an inch, when pus flowed through the incision, proving the accuracy of the diagnosis and giving poignancy to the regret that the operation had not been permitted during life. The abscess, about the size of a pigeon's egg, was situated in the white matter

of the basis of the second and third frontal convolutions.

"The blade of the bistoury which had been left in situ after insertion through the trephine opening, was found to have penetrated its outer wall. The congested zone in the periphery of the abscess extended from the anterior horn of the lateral ventricle to the cortex of the base of the second, but especially that of the third left frontal convolution.

"Here the precise spot in the brain which the abscess occupied was accurately determined from the localising phenomena induced by the focal lesion, which were trusted as indicating its position, though pointing to a different part of the brain from that which would have been selected had the seat of injury been accepted as a guide. The operation showed how easily the pus could have been evacuated, though the unfortunate refusal to allow it to take place during life leaves uncertain the ultimate issue, but judging from my subsequent experience, worse cases have recovered after operation.

"2. Case in which Motor Phenomena were the sole Guides to the Cerebral Lesion: 1879. In 1879, a case with definitely localising motor symptoms was seen by me, occurring in a boy who had had

a fall six days previously, which occasioned some slight bruising about the face and head, accompanied by a shade of mental obscuration. At the termination of forty-eight hours he was so well that his parents could with difficulty be dissuaded from allowing him to rise from bed. On the sixth day he had a series of convulsions, the twitchings beginning in the left side of the face, gradually involving the left arm and subsequently the left leg, during which consciousness was preserved. Paresis of these parts remained, though sensation was unimpaired. On the following day there was a renewal of the convulsions, the parts being affected in the same order, but the convulsions persisted and finally became general, with loss of consciousness. Those motor phenomena indicated a lesion on the right side of the brain, pronounced at the middle and lower portion of the ascending convolutions, as the face and arm centres were the first to show evidence of stimulation. The lesion was evidently of an irritative nature, such as might be occasioned by a spiculum of bone driven into the brain or by a degree of pressure exercised on its surface. It was clearly not destructive, such as might be occasioned by severe cerebral contusion. Dr. Alex. Robertson was asked to see the case, and agreed with me that the motor symptoms pre-

sented a sufficiently clear guide to the localisation of the lesion in the lower parts of the fissure of Rolando. It was therefore resolved to expose that portion of the brain. As a preliminary, the head was shaven, when a scarcely perceptible irregularity was detected in the cranial vault near the coronal suture. When the skull was exposed a fissure was discovered running across the coronal suture. Trephining was performed at a point slightly behind the auriculo-bregmatic line, and midway between the external auditory meatus and the vertex. This point *happened* to correspond to the posterior extremity of the fissured fracture. There was no blood between the dura mater and the skull, but the dura had a very dark colour. This membrane was opened and gave vent to two ounces of fluid and coagulated blood contained in the subdural cavity. The operation was conducted aseptically and the patient made an uninterrupted, typical, afebrile recovery. There was no recurrence of the fits; paralysis of the left arm soon disappeared, and he is living now and in perfect health." *British Medical Journal, 1888, Vol. 11, p. 302.*

CHAPTER XX

WILLIAM STEWART HALSTED
(The Reformer of Breast Surgery)

1852–1922

As Surgeon to the Johns Hopkins Hospital William Stewart Halsted did much to advance the surgery of hernia and mammary cancer, the arteries and aneurysm, the gall ducts and the thyroid. He was an early advocate of Listerian principles and he was insistent to establish a school of surgery by training assistants thoroughly and for comparatively long periods of time. His name is more especially handed down in "Halsted's operation for cancer of the breast" and "Halsted's radical operation for the cure of hernia." He was thorough, absolutely honest, scientifically accurate and gifted with foresight.

HALSTED'S BREAST OPERATION

"Wealthy Mason, aged 47, was admitted to the hospital March 20, 1890.

"About one year ago the patient noticed a lump no larger than a pea just external to the left nipple. The lump has gradually increased in size and is now about as large as a hen's egg. The axillary glands are large enough to be felt.

"Operation, March 21, 1890. The knife was introduced at a point from 3 cm. to 5 cm. below the middle of the clavicle and drawn outwards on to and down the arm to a point a little below the insertion of the pectoralis major muscle. The knife was then reintroduced at the starting point and the tumor circumscribed by a skin incision which gave the diseased tissues at every point a wide berth — a berth of at least 5 cm. Each bleeding point as it presented itself was caught at once by an artery clamp. The tumor, the entire breast and all of the healthy tissues which had been circumscribed by the skin incision were removed in one piece from within outwards, by cutting and tearing, from the ribs and from the fascia which covers the greater pectoral muscle. The triangular skin flap was dissected back to its base. The loose fascia which stretches from the lower border of the free edge of the pectoralis major muscle of the chest wall was torn through with the fingers, the major muscle was raised up from the chest wall and from the pectoralis minor muscle and

cut away close to its trunk attachments and at about 5 cm. from its insertion into the humerus. The pectoralis minor muscle was divided transversely at about its middle and drawn upwards so as to completely expose the extreme apex of the axilla under the clavicle. The loose cellular tissue about the first portion of the axillary vein was dissected away with the fingers so as to clearly expose the axillary vein. Starting from this point the tissues were dissected clean from the axillary vessels and nerves, down almost to the lower limit of the skin incision on the arm. Going back again to the apex of the axilla, the axillary contents and with them all the cellular tissue and fat which covers the front and side of the exposed chest wall were dissected off, clean from the ribs. The somewhat wedge-shaped contents of the axilla were thus removed in one piece from the apex to the base or floor of the axilla. The floor of the axilla had already been reflected in the triangular skin flap. The last cutting act of the operation, therefore, was to dissect the base of the wedge-shaped contents of the axilla from the reflected triangular flap of skin.

"Two strong silk approximation sutures were taken from the under side of the skin at about 1.5 cm. from its cut margins. These sutures,

stretched across the open wound, did not touch the ribs but were suspended in the air about midway between the ribs and the level of the skin. The flap was then pressed up into the axilla to as high a point as possible and was held there by an assistant while its edges were stitched with buried skin sutures to the skin of the chest wall. The open wound was allowed to fill with blood. The approximation sutures became completely buried in the blood clot. The blood clot was protected from the dressing by strips of gutta-percha tissue. The fornix of the axilla was made as high as possible and its high position was maintained by a wedge of gauze which was held in place by a firmly applied bandage. The inner dressing was of sterilised gauze and the outer dressing of cyprus moss.

"April 7th. The wound is dressed. It has healed in the typical way. The blood clot, which is already almost completely organised, fills the open wound up to the level of the skin. The approximation sutures are buried out of sight in the blood clot. The positions of the approximation sutures were indicated by little convexities of the skin at the margins of the blood clot. The granulation tissue had reached the surface nearly everywhere. Sometimes at the first dressing the approximation

sutures may be seen shimmering through the surface of the blood clot. They soon become entirely concealed by the granulation tissue.

"*About eight years ago (1882) I began not only to typically clean out the axilla in all cases of cancer of the breast but also to excise in almost every case the pectoralis major muscle, or at least a generous piece of it, and to give the tumor on all sides an exceedingly wide berth.* It is impossible to determine with the naked eye whether or not the disease has extended into the pectoral muscle.

"From the careful microscopical examination of many very small cancers of the breast I am convinced that the pectoralis major muscle is usually at the time of the operation involved in the new growth. Strange to say, no authority so far as I know suggests the advisability of always removing the pectoralis muscle or a portion of it in operations for the cure of cancer of the breast, and still stranger there are many surgeons of the first rank — surgeons in favor of methodically cleaning out the axilla — who instead of recommending the excision of the muscle advise the removal of the *fascia* only from the pectoral muscle."

HALSTED'S RADICAL CURE OF HERNIA

Henry Smith, negro, aged 37, was admitted to the hospital February 19, 1890. For two years the patient has had a small right oblique inguinal hernia. At present the hernia is about as large as an orange and is easily reducible.

"Operation, February 20, 1890. The skin incision extended from a point about 2 cm. internal to the anterior superior spine of the ilium to the spine of the pubes. The subcutaneous tissues were divided so as to expose clearly the aponeurosis of the external oblique muscle, the external abdominal ring and the sac of the hernia. The aponeurosis of the external oblique muscle, the internal oblique and the transversalis muscles and the transversalis fascia were severed to the outer extremity of the skin incision. An incision large enough to admit two fingers was then made into the sac. The index and middle fingers of the left hand, and a small piece of sterilised gauze were passed into the sac. By then the hernial contents were pressed back into the abdominal cavity and over the fingers the sac, first on one side and then on the other, was drawn tense and held by the thumb of the same hand, while the tissues in which the sac was imbedded were stripped off

from it by the other hand. With the division of the abdominal muscles and transversalis fascia the so-called neck of the sac vanishes. There is no longer a constriction of the sac. The communication between the sac and the abdominal cavity is more than large enough to admit one's hand. The sac having been completely isolated, was torn more widely open, and the peritoneal cavity was closed as deeply as possible by seven or eight quilted sutures of fine silk. The sac was then cut away quite close to the line of the peritoneal sutures. The vas deferens and its vessels having been isolated, they were hooked up into the outer angle of the wound by a quilted suture, which included the transversalis and internal oblique muscles and the aponeurosis of the external oblique muscle. This suture was the first of a row of seven or eight quilted sutures of strong silk, which were passed deeply through the pillars of the ring, and through the divided muscles of the abdominal wall. These sutures were taken very close together, were made to include the deepest tissues available and were tied tight enough to bring into close apposition the broad surfaces which they embraced.

"Great care having been taken to ligate every bleeding point, the wound was closed with buried

skin sutures of fine black silk. A pad of sterilised gauze about 3 cm. broad and a little longer than the wound was pressed over the line of the skin incision. The skin of the abdomen, thigh and scrotum was carefully dried. The pad was bound firmly in position by a few spica turns of a gauze bandage which had been soaked in absolute alcohol. Finally thin collodion was poured over the entire dressing. In a few moments the dressing was quite hard and the patient was transferred to the stretcher.

"March 1. The wound is dressed. The wound is perfectly healed. Nothing but the finest linear scar is to be seen.

"March 6. Thirteen days * after the operation the patient is allowed to get out of bed and walk about.

"November, 1890. Nine months after the operation the scar from the operation is scarcely visible. There is no return of the hernia." *Surgical Papers by William Stewart Halsted, Baltimore, 1924, Vol. I, pp. 87–90.*

* The patients, as a rule, are not allowed to walk about until the twenty-first day after the operation.

CHAPTER XXI

HENRY JACOB BIGELOW (Surgeon, Teacher and Inventor)

1818–1890

BORN in Boston on March 11th, 1818, of a highly respected family. His grandfather the Rev. Jacob Bigelow "served the same people for more than forty years without schism or division among his parishoners"; his father, also named Jacob, was a distinguished physician with a large practice in Boston. Henry Jacob, the son, was educated at Harvard and afterwards paid a prolonged visit to Europe. In Paris he came under the influence of P. C. L. Louis at the Charité Hospital and he made special visits to London for the purpose of hearing James Paget lecture on Pathology at the Royal College of Surgeons.

Returning to Boston he was appointed a surgeon to the Massachusetts General Hospital, in 1847, watched Morton's demonstration with ether, and for the rest of his life, was an ardent advocate of anaesthesia. In 1849 he was chosen Professor of Surgery at Harvard and in this posi-

tion soon showed himself to be an excellent lecturer and a great teacher of medical students. He first came into general notice in 1869 when he published his studies on dislocation of the hip and the function of the Y-ligament. Much of his time in the interval had been occupied with the invention or modification of various surgical instruments; tourniquets, needle holders, mouth gags, autopsy tables, an operation table and the like.

Turning his attention to the treatment by crushing of stone in the bladder he revolutionised the method in common use by employing an improved lithotrite, a larger catheter and an effective evacuator. By these means he was able to remove the fragments of the calculus at a single sitting. His operation was so unheard of and so novel that it met with considerable opposition and only came slowly into world wide use. He died on October 30th, 1890, leaving a son by his wife Susan who was the daughter of the Honourable William Sturgis.

LITHOTRITY BY A SINGLE OPERATION

"When Sydney Smith asked, "What human plan, device, or invention two hundred and seventy years old does not require reconsidera-

tion?" he would no doubt have regarded with favour an occasional reconsideration of the theory and practice of medicine and surgery – especially in view of the current belief, that their traditions have been kept alive and their rules prescribed in part by authority. The surgical literature of lithotomy, both French and English, so long showed the influence of the early specialists, that we have hardly now escaped from its exaggerated circumstance and detail. And yet, with attention to a few precise rules, the operation of lithotomy is quite a simple one – much less difficult, for example, than the dissection of tumours. It is not impossible that convictions in some degree traditionary may prevail in regard to certain points connected with the practice of the more recent art of lithotrity.

"Civiale was among the first to inculcate the excessive susceptibility of the bladder under instruments. Later surgeons, perhaps influenced in part by his teaching, have continued to invest the operation of lithotrity with precautions, which, though by no means groundless, because under certain conditions both the bladder and urethra are actively resentful of even slight interference, are nevertheless greater than this operation generally requires. As a rule, there is little difficulty

in it. The stone is readily caught and broken into fragments, of which a few are pulverized; a large-eyed catheter is then sometimes introduced; a little sand and a few fragments of stone are washed out; after which the patient is kept quiet to discharge the remainder, and await another "sitting." Under favourable circumstances, such an operation, lasting a few minutes, is not only simple, but safe. Yet the fact that it is not always so could not fail to arrest the attention of surgeons. It may happen that during the succeeding night the patient has a chill: not the chill of so-called "urethral fever," which sometimes follows the mere passage of a bougie, and which is of little consequence; but one accompanied or followed by other symptoms, such as tenderness over the region of the bladder, a quickened pulse, and the frequent and painful passage of urine. These symptoms may insidiously persist, rather than abate; others may supervene. The surgeon vainly waits for a favourable moment to repeat his operation; it becomes too evident that the patient is seriously ill, and it is quite within the range of possibilities that in the course of days or weeks he may quietly succumb. An autopsy discloses a variety of lesions; some of them remote or obscure, others of more obvious origin; and among these, not the least

common, an inflamed bladder, upon the floor of which angular fragments and chips of stone are resting. It is then evident that during a certain interval before death the bladder was not in condition for further instrumental interference; and although, in view of the fatal result of delay, lithotomy or active lithotrity, to both of which in cases like this I have resorted, might have been on the whole the least of evils, it is plain that either operation would have furnished in itself an additional cause of serious inflammation.

"Such a result might be supposed to point to the necessity of extreme precaution; and it will be justly urged that the purpose of such interference at an unfavourable moment is the removal of the offending fragments as a last resource. But if at the first operation the bladder could have been completely disembarrassed of every particle of stone, even with the risk of irritating its lining membrane, we can hardly doubt that the relief would then have been followed by ready repair. In short, it is difficult to avoid the conviction, that, in an average case, damage to the mucous membrane, and quite as great, is as likely to follow the persistent irritation of angular fragments as the protracted use of instruments for

the entire removal of a stone, provided only this can be accomplished.

"It is probable that the injury from the use of instruments has been in some measure confounded with that resulting from the presence of fragments in the bladder. That the average bladder and urethra have no extreme susceptibility is attested by the generally favourable results of lithotrity, and even of catheterism, which are practised with very varying skill everywhere; also by the singularly innocuous results of laceration of the contracted urethra, by an instrument like that of Voillemier for example; so, too, by their recovery from the considerable injury inflicted during the extraction of a large and rough stone in lithotomy. The bladder is often also tolerant to an extraordinary degree of the presence even of a mulberry calculus. When we remember that in this case it clasps the stone at every micturition, often with a persistent gripe, the comparative immunity of its tender mucous membrane is quite remarkable. But when sharp fragments are thus embraced, presenting fresh and acute angles, which do not soon become blunted, and to which the bladder is unaccustomed, it is more remarkable that serious consequences are the exception,

and not the rule, in lithotrity. Polished metallic surfaces carefully manipulated can hardly do such damage as the agencies here enumerated.

"Gentleness, dexterity, and experience are especially to be valued in lithotrity. It has been well said, that no novice should undertake this operation. But the habit of confounding the symptoms resulting from the presence of fragments with those following the use of instruments originally led to precautions in the introduction and manipulation of the latter which were sometimes excessive. Civiale, with an almost unparalleled experience, introduced a small lithotrite with much less pressure than its own weight, and with uniform and great slowness. And yet, in a healthy urethra, it is only at the triangular ligament and beyond it that such extreme care is called for. Civiale, who had no means of evacuating fragments in the bladder, restricted the length of his operation to two or three or perhaps five, minutes. The same solicitude seems to have led Sir Henry Thompson, in his admirable and standard work upon this subject to assign two minutes as the proper average duration of a sitting; a period which his exceptional skill has often in his own practice enabled him materially to reduce. I have been gratified to find, however, that since he has

availed himself of the advantage of etherization he recognises the benefit to be derived from somewhat more prolonged manipulation. My own conviction is, that it is better to protract the operation indefinitely in point of time, if thus the whole stone can be removed without serious injury to the bladder. I believe, that, in any case which is as favourable to lithotrity as the average in these days when stones are detected early, this can be effected; and that, if the bladder be completely emptied of detritus, we have as little to apprehend from the fatigue of the organ consequent upon such manipulation as from the alternative of residual fragments and further operations. The duration of the sittings in the cases reported at the end of this paper varied from three-quarters of an hour to three hours, and three-quarters. The bladder can be thus completely and at once evacuated, in a majority of cases. The stone, after crushing, can be removed through the urethra by a tube contrived for the purpose.

"My own practice has always been to etherize for lithotrity. Each operator prefers the position to which he is accustomed and when the urethra is healthy, this is of very little importance. But if there be stricture or prostatic obstruction, a position at the patient's left side enables the op-

erator to hold and direct the instrument to advantage with the right hand, leaving the left hand free to act in the perinaeum. After the instrument is introduced, and both hands are required above the pubes, they are most available, if the surgeon changes his position and stands upon the patient's right.

"It is well, by a preliminary injection, to ascertain carefully the capacity of the bladder by emptying it and then refilling it slowly with warm water, previously measured, until the water is expelled through the loosely held urethra, by the side of the tube. In the etherized subject a short pipe or nozzle suffices for this purpose. I have for many years employed a common Davidson's syringe. An unetherized patient may for a moment resist this injection through a short tube, by contracting the sphincter of the bladder; but this readily yields. Except in a large bladder, a capacity of eight or ten ounces need not be increased. The smaller the injection, the more readily, indeed, do fragments fall into the blades of the instrument. But, unfortunately, so also does the mucous membrane. In fact, with too little fluid in the bladder, the use of a lithotrite in unpractised hands is attended with danger; and in a long sitting, and injection which will render the walls moderately

tense is the only really safe way of keeping the bladder from between the blades. After careful examination of the action of a lithotrite through an opening in the summit of the bladder, I have returned to this opinion, which was held by the older writers on this subject. From time to time the diameter of the collapsing bladder should be estimated by carefully opening the blades of the lithotrite, and water should be introduced when necessary; but care should be taken not to injure a contracted bladder by first distending it, and afterwards adding to it the contents of the aspirating bottle.

"A tape or an elastic band wound lightly once or twice around the penis retards the escape of injected water, and yet allows the movements of the tube or lithotrite.

"In order to ascertain the maximum calibre of the urethra, before introducing a tube, it should be measured by an instrument which will enter more readily than the tube. Such instruments we have in Van Buren's sounds, which are slightly curved at the end, and a little conical. Being made of solid metal, and nickel-plated, they traverse the urethra with singular facility. Otis's sounds also answer admirably for this purpose.

"The successful evacuation of the bladder de-

pends upon several conditions, both upon the apparatus and its use, which, for distinctness may be enumerated separately. 1. A large calibre of the evacuating tube; 2. Its shape; 3. The shape of its receiving extremity; 4. The assembling of fragments around this extremity; 5. The immediate recognition and removal of any obstruction in the tube.

"The lithotrite which I have invented closes the lock by rotation of the right wrist without displacement of the fingers and is stronger than that in ordinary use. I have therefore substituted a knob instead of a wheel in the handle. I have too modified the shape of the blades and have provided a larger slot to enable the fragments to pass more easily. If the sitting be protracted the water dribbles away and the collapsing bladder, especially if trabeculated, is liable to serious damage from the lithotrite. To meet this difficulty my lithotrite contains a tube or groove between the blades for the injection of water without removal.

"CASE I. Dec. 14, 1875. Age, 64. Date of symptoms, six years. Two or three stones, measuring from half an inch to more than three-quarters. Three sittings. First sitting: No fragments were removed through a tube. Second sitting: Interval, seven days; duration, forty-five minutes, under

ether; quantity removed, "a few fragments." Result: The patient was discharged well, one week after.

"CASE VIII. (Dr. C. B. Porter's case) Aug. 19, 1877. Age 61. A large, flabby man, with a feeble pulse. Date of symptoms, twenty-six years. Two stones, one of which is so large that it is barely possible to lock the lithotrite. Passes water every fifteen or twenty minutes. Three sittings. First sitting: Duration, one hour and a half, under ether: size of tube, twenty-eight; quantity removed, two hundred and twenty-eight grains; passed afterwards one hundred and eight grains. Second sitting: Interval, four days; duration, three hours, under ether; size of tube, thirty; quantity removed, seven hundred and forty-four grains; passed afterwards sixteen grains. No after symptoms of importance. Third sitting: Interval, five days; duration, three and three-quarters hours, under ether; size of tube, thirty-one; quantity removed, seven hundred and six grains; no pain nor discomfort afterwards; total number of grains after drying, one thousand eight hundred and two. Result: Discharged well, two weeks from the date of the first operation. After a few weeks the patient could retain his water from three to four hours.

"REMARKS. The details of the earlier of these operations are expressed with less exactness than I might now desire, but were dictated by myself at the time, and are within the fact, as to the duration of each operation, and the size of the stones. These cases, all of soft stone (i.e. not oxalate of lime) are the only ones by which the method which is the subject of this paper has been tested as statistics are not so numerous as to have importance. One of the eight cases was fatal but it was not possible to get an autopsy, a circumstance I greatly regretted. The other cases abundantly illustrate what this operation is able to accomplish in removing at once a large quantity of stones by the urethra and demonstrate a tolerance by the bladder of protracted manipulation which had not hitherto been recognized." From *Lithotrity by a Single Operation,* by Henry J. Bigelow, Professor of Surgery, Harvard University, Surgeon to the Massachusetts General Hospital; *The American Journal of the Medical Sciences, 1878, N.S. Vol. 75. P. 117.*

CHAPTER XXII

JAMES MARION SIMS (Surgeon and Pioneer Gynaecologist)

1813–1883

MARION SIMS is an outstanding example of one who raised himself by his own ability from nothing to an international reputation. Without any advantages of rank or fortune (it is said that his father never learnt to read until after his son married) Marion Sims was born in the Lancaster district of South Carolina on January 23rd, 1813. Deciding to practice as a doctor he settled at Montgomery, Alabama, until in 1853, having obtained an M.D. from the Jefferson Medical College in 1835, he moved to New York where he established the New York Women's Hospital. During the Civil War, as his sympathies were still with the South, he left the City and from 1862 to 1871 lived in Europe where he made a large and influential practice both in London and Paris. During the Franco-Prussian War of 1870 he served as surgeon-in-chief of the Anglo-Ameri-

can ambulance. He returned to New York soon after this war was ended, was elected President of the American Medical Association and, five years later, of the American Gynaecological Society. He died suddenly on November 13th, 1883, probably of angina.

Sims is thought of as an operator who invented a duck-billed vaginal speculum and repaired vesico-vaginal fistulae very skillfully. He was much more than this; his early training as a village practitioner gave him a wide insight into human character both in sickness and in health. His urbanity and tact, therefore, endeared him to a very wide circle of lay and professional friends making him welcome wherever he went. His boldness as a surgeon shows that he would have risen to great heights had he chosen to devote himself to that branch of his profession. Without skilled help and before the introduction of anaesthetics he undertook operations of such magnitude as the removal of the upper jaw and exploration of the gall bladder. His writings are for the most part scattered through contemporary medical journals, his only book being "Clinical Notes on Uterine Surgery" which was published in London by Robert Hardwicke of 192 Piccadilly in 1866.

REMOVAL OF THE SUPERIOR MAXILLA FOR A TUMOUR OF THE ANTRUM; APPARENT CURE. RETURN OF THE DISEASE. SECOND OPERATION. SEQUEL

"The subject of this operation was a negro boy, George, aged 18, the property of Dr. Thomason, of Loundesboro, Ala. The disease first manifested itself some time in the spring of '44, and was supposed to be merely an excrescence from the gum, which was several times removed and cauterized; being always reproduced very soon afterwards. In the course of five or six months his master discovered that the cheek began to bulge out, and, in fact, that he had some serious affection of the bone.

"I saw the case early in January, 1845. The tumour appeared to be as large as a good sized orange, occupying the entire extent of the left upper jaw, and involving to some degree the malar bone. The mouth was in a bad condition; the gums purple, tumid, and bleeding on the slightest touch; the teeth decayed, with the fangs here and there exposed, while at other points they were firmly anchylosed with their alveoli. The free scarification of the gums, the extraction of the decayed molars, and attention to his

general health, soon had him in a proper condition for an operation, which was performed on the 22nd of January, 1845, with the assistance of Drs. Ames, Boling, and Baldwin, and in the presence of a large number of medical friends.

"The cheek was opened by the curvilinear incision, according to the process of Warren and Velpeau, taking particular pains to avoid the parotid duct. The facial artery being secured, the anterior flap was dissected up to the edge of the orbit. The ala nasi and frenum of the lip were cut up to permit the more easy elevation of the flap. The origin of the inferior oblique was divided, and the contents of the socket separated from the orbitar plates of the maxillary and malar bones. The zygomatic face of the maxilla was freed by a downward dissection of the lower flap.

"It now remained to attack the hard parts. The left lateral incisor being extracted, an incision was made through the mucous membrane near to and parallel with the longitudinal palatine suture. Two or three nips of Liston's bone forceps easily divided the alveolar and palatine processes. The eye and its appendages were then supported by the handle of a light silver spoon bent at right angles, while the nasal process was divided obliquely downwards so as to avoid injur-

ing the nasal duct. The broad part of the malar bone was next divided into the spheno-maxillary fissure, because it was more accessible. The separation of the palate plate from the palate process of the maxilla was effected by a thrust with a strong pointed bone knife.

"The only remaining bony attachment, being that with the pterygoid process of the sphenoid bone, was separated by another thrust with the knife laterally.

"The diseased mass being now movable was started slightly downwards, thus exposing to view the second branch of the fifth pair of nerves, just as it enters the infra-orbital canal, when it was easily divided, producing excessive but momentary pain.

"The operation was now quickly completed by clipping the remaining attachments with the scissors.

"The bottom of the wound presented a smooth concavity, filling accurately the ovoid appearance of the tumour, thus showing that not a vestige of the disease was left behind.

"It was supposed by the gentlemen present that the hemorrhage did not amount to more than eight or ten ounces. No ligature was applied save to the facial artery, and that was removed before

the wound was dressed. The boy bore the operation (which lasted thirty-five minutes), with wonderful fortitude. During its performance, he was allowed brandy and water as occasion seemed to require. At its completion he was permitted to lie down. After waiting half an hour and compressing a single bleeding vessel, the posterior palatine artery, the wound was closed by the interrupted suture and adhesive plaster. There was no stuffing of the cavity and no other dressing. At 2 o'clock, one hour after he was put to bed, his pulse was 81. At 9 p.m. it was 96. He rested well all night.

"Jan. 23rd. 8 a.m. There is a large quantity of bloody pus secreted this morning. It appears to trickle down the fauces, being easily hawked out in large mouthfuls. Lies on his right side altogether; pulse 104; no pain; disposed to sleep. Ordered cold water dressings to the face.

"9 p.m. Purulent secretion moderated; cold water continued; pulse 110.

"24th. 8 a.m. Skin cool; no thirst; no pain; rested well all night; pus diminished in quantity; improved in appearance; left off the water dressing. He convalesced very rapidly from this time. On the third day he could eat a little. On the eighth the plasters and sutures were removed and

the wound in the cheek found to be healed up entirely. On the ninth day he walked out in the streets perfectly well.

"His rapid recovery from an operation of such magnitude, was a matter of astonishment to all who observed it. In a short time, the cavity was filled up, all to two small openings about the size of a goose quill; the one leading up to the orbit, the other into the nostril. He kept these little passages stuffed with small pledgets of cotton, which for cleanliness were renewed after each meal. He left Montgomery on the first of March in excellent health and fine spirits, apparently cured; with no deformity but that from the cicatrix, and a slight twisting of the face to the right side when he laughed.

"The tumour is as large as a medium sized orange, having rather a tense elastic feel. The only portions of bone visible are, the alveoli of the lateral incisor and cuspidatus, with the tooth attached; a bit of the palatine and nasal processes, and a part of the malar bone. The orbitar plates were entirely destroyed by the pressure of the tumour; so were the inferior spongy bones of the nose. The orbitar edge of the maxilla was transformed into a sort of spiculated osteo-fibrous structure.

"The tumour is almost perfectly round. That segment of it extending from the eye to the alveolar region forming about one third of its circumference. The next largest part extends from the alveoli along the hard palate, the third projected under and back of the eyeball; while the last and smallest projection was that in the nasal cavity. The surfaces of all these segments are smooth and round, and that portion behind the eye fitted its concavity as accurately as a hard boiled egg does its shell.

"The proper substance of the tumour is osseous and scirrhous, and might be termed an osteo-scirrhoma. The central portions of it are filled with stellations of bony matter sending off spangled radiations towards the circumference of the scirrhous mass.

"I sincerely wish that the history of this case could end here, but the whole truth must be told.

George had been at home but two months when he began to complain of pain in his cheek. His master immediately discovered that the disease was being reproduced, and sent him back to me early in May. He had so much pain in and about the eye as to require, particularly at night, large doses of morphine for its mitigation. The

growth of the tumour was remarkably rapid, so much as to be perceptible from day to day. From its reappearance about the first of May, it had in three weeks time got to be a great deal larger than the first tumour. The left eye was bulged out of its socket, deeply injected and lachrymose; vision greatly impaired, with very little power of moving the eye, and none of closing the lids. The skin of the cheek was thinned, reddened, and seemed to be in danger of ulcerating, simply by the mechanical pressure exerted by the rapid development of the morbid mass, which was greatly enlarged not only here, but in every other direction. The cicatrix left by the first operation had become elevated, broad, hard, and painful, having very much the appearance of the dermoid tumour, termed keloides.

"His condition was looked upon now as being perfectly helpless and hopeless, but he begged for a repetition of the operation, which was accordingly performed on the 24th of May (about four months after the first). Several medical friends were present, and I was assisted particularly by Drs. Ames, Baldwin, and Vickers.

"It is unnecessary to give the details of the operation, as I simply followed the tumour, separating its attachments on every side, for it was

reproduced from every portion of the cavity made by the removal of the first tumour. It was the most tedious and painful operation I have ever witnessed; but the most difficult and perplexing part of it was the dissection of the mass from its attachments at the back of the socket, and as it were, from the very base of the brain. The tumour was pushed downwards by an assistant, while the dissection under the eye was conducted slowly and cautiously, now with the scalpel and again with scissors; all the time cutting deeply in the dark, guided only by the forefinger of the left hand. During the greater part of the operation, he evinced wonderful fortitude, but at the close his strength was almost exhausted, and often he would cry out in the bitterest agony "oh! how long! how long will it last!" and it lasted, I am sorry to say, one hour and twenty-nine minutes.

"The hemorrhage was much more than at the preceding operation. A small artery at the bottom of the cavity was compressed for several minutes by the finger, and very soon the oozing of blood seemed to cease. I then introduced a piece of fine sponge (wet) just large enough to fill the cavity and adjusted the flaps over it, securing them by the interrupted suture. Its presence was very injurious. It appeared to invite the flow of blood

and there was a gradual hemorrhage kept up for some time, till, in the course of two or three hours, his case presented altogether a very alarming aspect.

"From the loss of blood during the operation, and from its gradual draining afterwards, as well as from the excessive shock to the nervous system, he passed into a perfect state of collapse. His pulse at one time but 80 in a minute; instantly rising to 140, and even becoming extinguished on the slightest exertion; his respiration 36 in a minute, suddenly mounting to 60; with great restlessness; burning heat of stomach; nausea and vomiting; sinking; excessive prostration; cold extremities, and cold clammy sweat, indicated but too plainly the imminent danger he was in of dying by the hands of the surgeon. I was exceedingly alarmed about him; cut loose the stitches; laid open the wound; removed the sponge saturated with blood; wiped out a few coagula; saw that there was a gradual oozing from the bottom and sides of the cavity; plugged it up with a bit of charpie wet in creosote water (twelve drops to the ounce of distilled water); watched it for a short time and discovered that it had the happy effect of checking the hemorrhage. The flaps were readjusted and held merely by adhesive plaster.

Brandy and carb. ammonia were administered very freely. He had a most uncomfortable night; the cold hands and feet; the nausea and occasional vomiting; the jactitation; internal heat and thirst; the thready frequent pulse, in short all the symptoms of collapse continued unabated for nearly twenty-four hours, at the end of which time, reaction was pretty well re-established, the pulse falling from 160 down to 120 per minute.

"As he was now considered safe, the gaping wound was closed by suture. He improved very fast, and his face was well in a week.

"The tumour removed was nearly twice as large as the first, presenting the same peculiarities.

"It was very soon discovered that the operation was fruitless, for the internal surface of the cavity showed evident symptoms of a reappearance of the disease at every point. As soon as he was sufficiently recovered, he went home, saying, that he intended to return for a third operation if it became necessary. The disease gradually increased, destroying entirely the vision of his left eye, filling up his mouth and throat so as to prevent deglutition and he died (in four months) comatose, doubtless from the encroachment of the disease on the brain. He was emaciated to a mere skeleton simply from inanition.

"Remarks: There can be but a common feeling of regret at the unfortunate issue of this case.

"The first operation was justifiable, and every one was satisfied with it. The propriety of the second might possibly be questioned, but almost any one would have performed it when an apparently healthy young man was begging for it. I committed two errors in the last, which it may be of some practical importance to remember:

"The first was in attempting to follow the tumour as though it had been perfectly encysted. Instead of separating it from the remaining portion of the malar bone I ought to have removed the bone with it by dividing the zygoma and frontal process which would have allowed me to get better at the mass. The operation would have been facilitated very materially, and therefore the pain and loss of blood would have been less.

"The next mistake (and it was a horrid one) was stuffing the cavity with a bit of wet sponge. This substance absorbed the oozing blood which, not coagulating, was conveyed to the most dependent part of the sponge, whence it fell into the throat or ran from the mouth. If the sponge had been permitted to remain for two hours longer, it would certainly have killed him.

"I shall always regret that I did not tie the

carotid, as was suggested to me by my friend Dr. Ames. It would most assuredly have retarded the reproduction of the disease and thus have prolonged life." *American Journal of Medical Science, 1847, xiii, 310–314.*

SIMS' DUCK-BILL SPECULUM

"The object of this speculum is to elevate the perineum and to partially support the posterior wall of the vagina; the pressure of the atmosphere with the gravitation of the viscera does the rest. All other specula act directly on the walls of the vagina, which they mechanically distend. This one, as a rule, touches but a small portion of the posterior wall.

"I was led to the invention of this speculum by a singular incident. As showing from what trifles important results sometimes spring. I venture to record here the circumstances. In December 1845 a lady was riding on a pony in the suburbs of the city of Montgomery, Alabama, where I then resided. It took fright and suddenly jumped from under her – she fell, striking her pelvis on the ground. I saw her soon afterwards; her suffering was very severe. Besides the contusions from the fall, she complained of rectal and

vesical tenesmus. On examination I found a complete retroversion of the uterus. I had been taught by lectures and books that the best method of reducing a recent luxation of this organ was to place the patient on the knees, and then act on the uterus through the rectum and vagina. This lady, covered with a sheet, was so placed across her bed. I then introduced a finger into the vagina, but effected nothing by it. Not wishing to pass the finger into the rectum, which is always disagreeable and to be avoided if possible, I introduced the middle and index fingers together into the vagina, and while I was making efforts to replace the uterus, all at once it happened that I could not touch the uterus, nor even the walls of the vagina, and my fingers were swept around in the pelvis without touching or being touched by anything except just where they were grasped by the mouth of the vagina. While I was wondering what could be the cause of this anomaly, my patient said she was relieved from the symptoms of which she was complaining so seriously but a few moments before. As she was relieved, although I did not understand how it was done, my duties to her were of course at an end. She was large and heavy; letting her go, I requested her to lie down. Being quite exhausted from pain and the unnatu-

ral position in which she had been placed, she threw herself quickly down on her side, when the sudden escape of air from the vagina gave a ready solution of my dilemma, as well as of the rationale of the reduction of the dislocated uterus, which was now found to be in its normal position. And what was its rationale? When the patient was in the position described, there being a natural tendency of the pelvic viscera to gravitate towards the epigastric region, it would require no great *vis a tergo* to produce the desired result in a recent case of this kind. One finger, however, was not long enough to throw the organ up, nor were the two; but when they were both introduced, in my varying manipulations and strenuous efforts, the hand was accidentally turned with its palm downwards, which thus brought the broad dorsal surface of the two parallel fingers in contact with the vulvar commissure, thereby elevating the perineum and expanding the sphincter muscle, which allowed the air to rush into the vagina under the palmar surface of the fingers, where, by its mechanical pressure of fifteen pounds to the square inch, this canal was suddenly dilated like a balloon, and the uterus replaced by its pressure alone. Having at this time a patient with a vesico-vaginal fistula, which I could not understand, I

placed her in the position above described, and used the handle of a spoon, (pewter and, it is said, bought at the neighbouring village store, Au.) curved at right angles, to open the vagina, elevate the perineum, and allow the air to enter, which afforded me a complete view, not only of the fistula, but of the whole vagina; whereupon this instrument was a self-suggested affair.

"During my residence in Alabama, up to 1853, I had no need of any better form of instrument, or any other position for its application than that above described; but when I went to New York, a larger field of observation soon proved to me that it was essential to modify both instrument and position, if they were to be used in the every-day treatment of the ordinary affections of the uterus; for while a patient afflicted with such a terrible infirmity as vesico-vaginal fistula is ready and willing to be placed in any position, however fatiguing, a moment's reflection will show that this kneeling posture would be quite out of the question in the treatment of the simple forms of uterine disease, as they occur in the higher grades of life.

"With this necessity before me, I went to work to improve my speculum, and at the same time I discovered that it could be used quite as effi-

ciently with the patient on the left side as on the knees. For nearly twenty years I have used no other speculum, and whenever in these pages, I have occasion to speak of the speculum, let it be remembered that I allude always and only to this one, with the patient necessarily on the left side. It is the best speculum for any purpose, whether it be for the application of the simplest dressing, or for the execution of the most difficult operation." *Clinical Notes on Uterine Surgery, J. Marion Sims, Pages 16–18.*

Unable to display this page