

MAISTER PETER LOWE (CIRCA 1550-1610): FOUNDER OF THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF GLASGOW

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Stay passenger and viow this stone
 For under it lyis such a one
 Who cuired many whill he lieved
 Soe gracious he noe man grieved
 Yea when his phisicks 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 soul his corps this stone
 Sigh Passinger and soe be gone.

Inscription on Peter Lowe's tomb in the cemetery of the Glasgow Cathedral^{1,2} (Figure 1).

Craig³ in his monumental History of the Royal College of Physicians of Edinburgh describes how it took four attempts for the Edinburgh College of Physicians to obtain its Royal Charter: the first in 1617 when the then King James I of England (previously VI of Scotland) (1566-1625) visited his homeland; the second in 1630 when application was made to Charles I (1600-1649); the third to the Lord Protectorate, Oliver Cromwell (1599-1658) in 1656; and the fourth, which was finally successful, to Charles II (1630-1685) in 1681. This is in marked contrast to the celerity of the Glasgow College of Physicians and Surgeons obtaining their charter in 1599 from King James V,⁴⁻⁶ and all the more surprising since Edinburgh was the capital city, and Glasgow, although having a University founded in 1451⁷ comprised fewer than 5,000 in population, and was only the eleventh city in Scotland in size at the time.⁸⁻¹⁰ The clue to the Glasgow College's immediate success is to be found in its Charter¹¹ where it is stated that the applicant, Maister Peter Lowe (1550-1610) (Figure 2) was:

...our Chirurgiane and
 chief chirurgiane to
 our dearest son the Prince.

The prince referred to was Henry Frederick (1594-1612), Prince of Wales, to whom his father's *Basilikon Doron* was dedicated¹² and who died at the early age of 18.¹³ The Glasgow Charter is anonymous, but one suspects the author was King James himself, especially as the language and phraseology is so similar to his *Counterblaste to Tobacco*.¹⁴⁻¹⁶ The task was one well within the King's powers since he was one of the most learned men in Europe,¹⁷ having been educated by the great literatus, George Buchanan

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FIGURE 1

Maister Peter Lowe's tombstone on the South wall near the gate of the cemetery of the Glasgow Cathedral. In the mid-nineteenth century the tomb was surrounded by iron railings, presumably as an anti-grave-robbbery device.⁶ The date of death is given as 1612, but this is debatable (in his will it is given as 15 August 1610).¹⁹ There is another barely legible inscription below the one cited in the Introduction which Lowe may have written himself, and reads:

Ah me I gravell am and dust
 And to the grave deshend I most
 O painted piece of liveing clay
 Man be not proud of thy short day

A bronze memorial tablet was placed in the Cathedral commemorating Peter Lowe in 1895.



FIGURE 2

Copy of a painting of Maister Peter Lowe (circa 1550-1610) done in 1822. The original by an unknown artist had deteriorated beyond repair.⁶ The painting now hangs opposite the entrance to the College Hall.

(1506-1582) whom, Dr Samuel Johnson (1709-1784) opined, was 'the only man of genius his country ever produced'.¹⁸ James, it should be noted, concerned himself with medical matters, and in 1605 granted a charter to The Company of Barber Surgeons of London, and in the following year did the same for The Society of Apothecaries of London.¹⁷ The failure of submission for a Charter for the Edinburgh College of Physicians in 1617 was not due to opposition by King James, who in fact issued orders to Parliament directing a College of Physicians be established in Edinburgh, but to opposition by the Scottish Universities, The Corporation of Surgeons as the Edinburgh College of Surgeons was then called, and by the Bishops of the Church.^{3,17} It was King James's great-grandfather, James IV (1473-1513) who granted The Royal College of Surgeons of Edinburgh their charter in 1506.¹⁹

But questions remain: who was this Maister Peter Lowe of whom King James VI of Scotland had such a high opinion, and what, if any, were his achievements?

LOWE'S LIFE

There is a paucity of information about the life of Maister Peter Lowe.^{4-6,17,19,20} One fact, however, is certain: he was a Scot and proud of it. Seldom did he sign his name without describing himself as a 'Scotchman' or 'Scottishman'²¹ (Figure 3). He also frequently used the descriptive term 'Arelian',

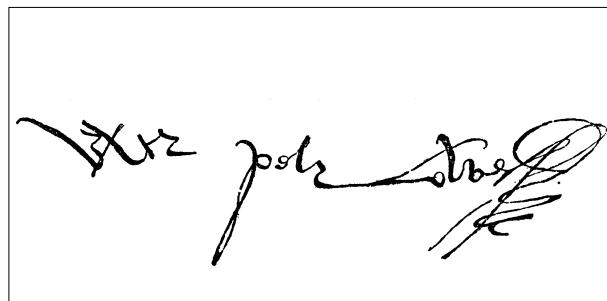


FIGURE 3

The signature of Maister Peter Lowe. The scribbles on the right may be for Scottishman or Scotchman, or even Arelian, but it takes a lot of faith to believe so.

which has been considered the latinised form of 'Orleans' or of his birthplace in Scotland (Airlie, Ayr, or Errol).^{17,20} Scott opined it was probably the latter, Errol, since another inhabitant of the parish, and a later associate of Lowe, referred to himself as Arelius.¹⁹ But could it also be a reference to the famous Marcus Aurelius Antonius (AD 121-180), who was Roman Emperor from 162-180, and author of the celebrated book on Roman Law (*Institutes of Galus*) and the even more celebrated book of soliloquies, entitled *Meditations*,²² one of the most personal and moving works in ancient literature? Lowe and his colleague may have wished to emulate the deeply thoughtful admirer of stoical philosophy, Marcus Aurelius: this is our own speculation. The exact date of Lowe's birth is unknown but was probably about 1550, or a little later.^{19,20} It seems likely that as a boy Lowe received a good education, perhaps as Scott¹⁹ has suggested, if his birthplace was Errol, at the grammar school in Perth.

In the first edition of his surgical textbook²³ (Figures 4 and 5), Lowe explains why he chose to study surgery in

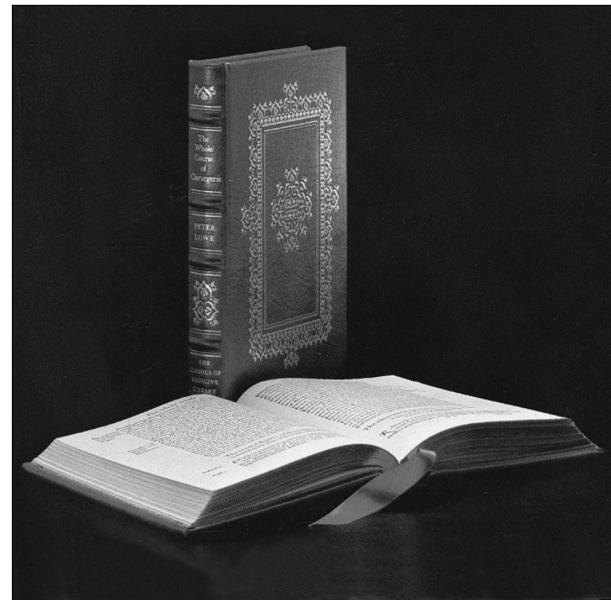


FIGURE 4

The elegant reproduction of Peter Lowe's *The Whole Course of Surgery* (1597) by The Classics of Medicine Library, Birmingham, Alabama, USA, 1981.

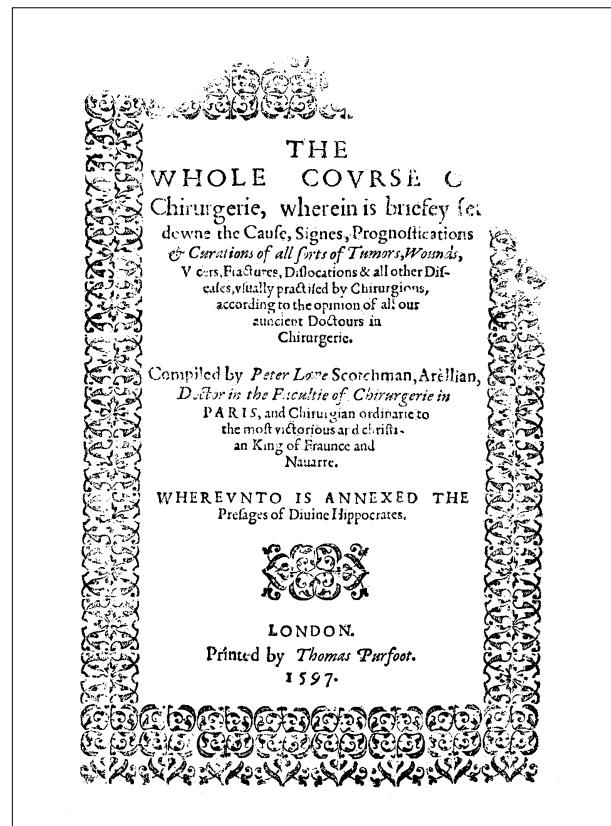


FIGURE 5

The frontispiece of the first edition of Peter Lowe's textbook on surgery. A second edition was published posthumously in 1612.

Paris, which in the latter half of the sixteenth century was an international centre for education, and had a long tradition of welcoming Scots, as a result of The Auld Alliance.²⁴

I impart to you my labours, hidded secrets
And experiments by me practised and dayly
Put in use, to the great comfort, ease and delight
Of you and such as have had occasion to use my
Helpe in France, Flaunders and elsewhere, the
Space of 22 years.¹⁹

Considering with my selfe that all men are naturally obliged to serve the common wealth by some honest profession, and that no man is able to discharge their dutie, and benefit to his native countrie, except he learn in his tender age, the science wherin the ornament therof consisteth: after full Deliberation I applied my selfe to the studie of Chirurgerie... in the auncient cittie of Paris, where the professors are learned, wise and grave men who are so careful of the weale-publique that they admit no man into their Colledge except that he hath past his whole course in the science of Chirurgerie.²³

It is not certain whether Peter Lowe remained in France for three decades, or whether he returned for a time to Scotland. In the second edition of his surgical textbook, published in 1612, he suggests that he spent his service as a surgeon over a period of 30 years, without returning to his native land:

I impart to you my labours, hidded secrets and experients by me practised and dayly put in use, to the great comfort, ease and delight of you and such as have had occasion to use my helpe in France, Flaunders and elsewhere, the space of 22 years: thereafter Being Chirurgian major to the Spanish Regiments at Paris, 2 yeares: next following the French King my Master in the warres 6 years.¹⁹

Lowe, however, as Scott suggests, must have been in Scotland in 1589 when the English ambassador in Edinburgh sent a letter to the Chief Minister of Queen Elizabeth I (1533-1603), William Cecil, Lord Burghley (1520-1598), about Peter Lowe.¹⁹

There is one Peter Lowe, a Scotchman and a pirate; he has taken an English ship laden with corn. He came to Montrose and there sold the corn. The master of the ship came to me to procure the King's warrant for the ship and corn. I sent him to Montrose but for all the King's warrant the poor man could get neither ship nor goods. This pirate is borne out by the Lord Admiral of Scotland, so the town of Montrose dare not deal with him. It were good if a man-of-war were sent by her majesty to these coasts to keep this pirate and his fellow Haggerston in awe, for they will do hurt on the coast of England as they did last besides they might intercept messengers coming and going from the King of Spain and the Prince of Parma.¹⁹

Lowe might therefore be unique among founders of medical institutions as having practised piracy on the high seas! However, this was the year of the execution of Mary, Queen of Scots, which was deeply resented in Scotland. In the present-day *Zeitgeist* of situational and relative morality, Lowe's piracy, may be excused as a simple act of revenge

on the auld enemy, England, rather than as an act of piracy.

After the assassination of King Henry III of France (1551-1589), Lowe served in the Spanish regiments in Paris according to his own testimony (*vide supra*) for a period of two years. Philip II of Spain (1527-1598) had undertaken to provide military support for the French Catholics, and this is the reason why there were Spanish regiments in Paris. The French Catholic army proved no match for the Protestant army of Henry of Navarre (1553-1610) who was the rightful successor to the throne; and the city of Paris fell despite fanatical resistance. Sometime later Lowe became surgeon to Henry of Navarre, and again, according to his own testimony (*vide supra*), served him for six years. Thus it was that Lowe was able to act as surgeon to two separate armies, despite one being Catholic and the other Protestant. Presumably it was during the time Lowe was in service to Henry of Navarre that he became a Protestant. There is no evidence that Lowe was a man of strong religious conviction, and so changing his faith would probably have presented little difficulty to him.

Henry of Navarre changed his religion five times in the course of his life. He realised the crown of France could only be his at the price of conversion. He abjured his Protestant faith in 1594, and was once again accepted as a Catholic, so ensuring his acceptance as king. If Lowe had converted to the Protestant faith this may have prompted him to return to his homeland. The following year, 1595, the English ambassador in Edinburgh received the information:

There is a new admittit chirurgien to the King of France,
called Mr. Lowe, Scottishman who...
has blokket [planned] the matter of
the casket and brought it to perfection.¹⁹

This would suggest that Lowe's presence in Edinburgh was not simply a return of a Scottish surgeon to his homeland, but a matter of some political importance. In 1583, Peter Lowe was in London and provided the French ambassador with details of naval and military defenses of England.

A report of all the musters
of all the shires of England;
a scroll of the charges her
Majesty is at for entertainment
and furniture of some strengths
within the realm, as the
Tower, Dover, Berwick, and
others, a minute of her Majesty's
ships, their number, names and charges.

This was the information contained in the casket, and clearly shows that Lowe was involved in espionage. However, like his piracy, this was directed against England: at no time, it should be noted, did Lowe betray his own country, Scotland. Being in the service of the Spanish regiments would make it dangerous for him in the later 1590s to travel to London, especially as the memory of the Spanish Armada (1588) was still fresh in the minds of the English. Nevertheless Lowe returned in 1596 to London to have the first of his two books published. The first was a small treatise on treatment of *The Spanish Sickness* (syphilis), which was dedicated to Robert Devereux Essex, 2nd Earl of Essex (1566-1601).²⁵ Syphilis first affected the troops of Charles

VIII of France (1470-1498) after the conquest of Naples in 1498.²⁶ The French called it the Neopolitan or Italian disease, the Spaniards the French disease, while the English, including the bard of Avon,²⁷ referred to it as the French disease. The name 'syphilis' was first given to the disease in 1530 when a physician from Verona, Girolamo Fracastoro (1478-1553) wrote a poem entitled '*Syphilidis Sive De Morbo Gallico Libri Tres*' in 1530.²⁸ For once the Scots did not blame the English; the disease in Lowland Scots (Lallans) being 'grandgor' or 'glengore', a corruption of the French 'la grande gorre'.⁵ Lowe knew well that the correct name for syphilis at the time was *el mal gallico* but despite the comment, 'There are some ignorant and malicious people who call it the French sickness without any cause or reason', he refers to the disease in the second edition of his surgical textbook, written at a time when he was safely back in Scotland, to 'my booke of the French or Spanish sickness! The book on syphilis is a slim volume (Figure 6) and contains nothing of interest other than to historical bibliophiles.

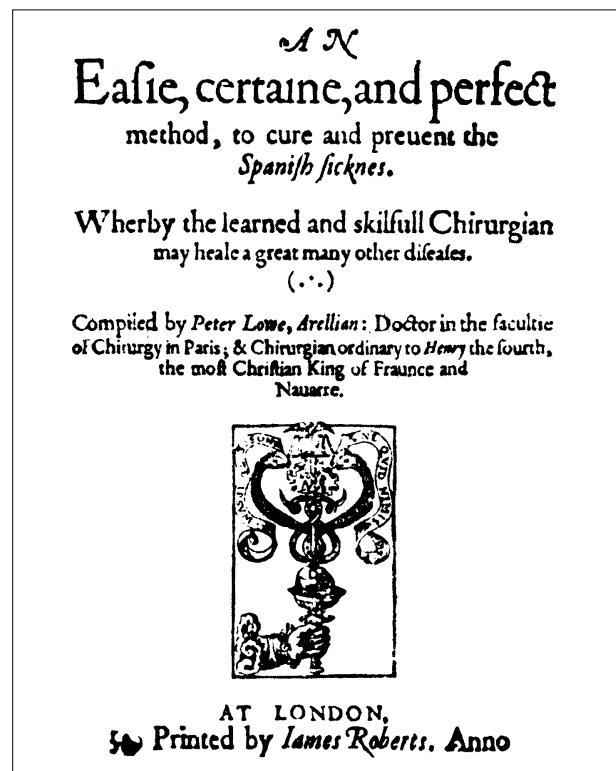


FIGURE 6
Frontispiece of Peter Lowe's slim volume on the Spanish sickness i.e. syphilis, published in London in 1596.

LOWE'S SURGICAL TREATISE

In the following year, 1597, he had his second book, *The Whole Course of Chirurgerie*, published in London. Although there had been previous books on aspects of surgery, this was the first complete and systematic treatise on surgery written in English, and the first to be designed with the student in mind. The book is dedicated 'to the most puissant and mightie Prince James the Sixte, by the grace of God, King of Scotland'.²³ The preface in English contains references to classical authors and the one in Latin confirms Lowe to be a scholar. He was referred to as Maister, which

is not the Lowland Scots for mister, but a corruption of *Le Magister*, the French for a pedagogue, signifying he had graduated Magister Artium, either at Orleans or Paris.⁶

The book is unique in that it has not only a foreword by a well-respected surgeon, William Clowes (1544-1604) of St. Bartholomew's Hospital, London, but also seven poems (two in Latin) in praise of the author and his book. Clowes was considered the best surgical writer of Elizabethan times and had published the first original treatise on syphilis in English in 1579,²⁹ and in 1588 one on surgical treatment of gunshot wounds, also in English.³⁰ In the latter, Clowes describes a method for covering the stump of an amputation with integument, being an earlier form of the flap methods of reconstruction.

But why would it have been important for Lowe to have the support of a well-known and respected English surgeon? There are perhaps two reasons. The first is that Lowe was not only a Scot, but one who had indulged in espionage and piracy against England, and had served in the armies of the enemies of England. The second is that it would be a defense against criticism of those London surgeons who held it as unscholarly to write in the vernacular, rather than in Latin. Clowes comments in his foreword:

And further I have thought it good, here to foretell, he [i.e. Peter Lowe] is fully determined to publish in the English tongue, other very briefe and pithie workes of Chirurgerie, unlesse he be stayd by the wronges and injuries of a rude multitude of subtil Sicophants or ungratefull Emulators, men indeede defective in their Art, and foully faultie in their judgmentes... who have most unseemely behaved themselves behind his backe,... and, have ploughed themselves againe and againe in the flouds and streames of unquenchable hatred against all men whatsoeuer (English or stranger) that publisheth foorth bookees of Physicke or Chirurgerie In the English toungue.²³

It is likely that Clowes had been criticised for publishing his two books^{29,30} in English, although he makes no comment on this. Even later, in 1649, there was a storm of protest by the medical establishment of the Royal College of Physicians of London when the likeable astrologer-physician, Nicholas Culpeper (1616-1654) dared to publish an English translation of the College's Latin *Pharmacopoeia*, which he called *A Physical Directory* or a *Translation of the London Dispensary*.³¹ Of course, the translation was unauthorised by the College, and the learned physicians certainly had a complaint that their rights had been contravened, but their indignation was as much for their secret formulations being available in the vernacular than for copyright infringement.³¹ Culpeper, today, is remembered for his 1653 publication, *The School of Physick*.³²

Scott¹⁹ considered it took courage for Lowe to go to London and have his books published there, especially with his history of anti-English activity. But he was probably protected by being a friend of the heir to the English throne,

King James VI of Scotland. It does appear from what Clowes had to say in his foreword to his book that he had several eminent friends in London. Clowes refers to him:

...not as a stranger, but as a deere Friend.²³

The book on surgery is, as one might expect, essentially practical. However, the early part deals with the philosophy and theory of surgery, taking the form of a dialogue between 'John Cointret, Deane of the facultie of Chirurgerie in Paris,²³ and Peter Low, his Scholler',²³ in which the latter is questioned and answers in the manner of a catechism, similar to George Buchanan's 1579 *Dialogus de Jure Regni Apud Scotos*.²⁴ For example, to the question: What is surgery? Lowe answers:

It is a science of Art,
that sheweth the maner how to
worke on mans bodie,
exercising all manuell
operations necessarie to heale
men in as much as is
possible by the using of
the most expedient medicines.²³

To the question: *How aught the chirurgian to learne his art?* Lowe considers a gradual progression from simple concepts to more difficult procedures appropriate, as guided by the deity.

Christ, the Prince of Philosophers,
counselleth to thinges more
particular, from easie and
facile things, to obscure and
difficile, as is observed
in other sciences.

To the question: *What methode is to be observed of the Chirurgian in working these operations?* Lowe gives sound advice on first knowing the disease and when to operate, and to be honest in explanation to the patient. He also makes some pithy remarks about barbers doing surgery. Noteworthy is the fact that the barber surgeons were excluded from 'The Brethern of Chirurgerie', later known as the Royal College of Physicians and Surgeons of Glasgow. Indeed, this was the only surgical college in the British Isles to do so. Lowe's answer to the question was:

First to knowe the disease next to doe
the operation as soone as may be, surely, without
false promises or deceyte to heale thinges, that
cannot be healed, for there are some, who, voyde
of knowledge and skill, promise for lucres to heale
infirmaties, being ignorat both of the disease, and
the remedies thereof, have scarce the skill to cut a
beard which properly petayneth to their traide.²³

On the qualities required of a surgeon, Lowe states:

...there are divers, and first of all as Celsus sayth, that he bee learned chiefly in those things that appertaine to his art, that he be of a reasonable age, that he have a good hand, as perfitt in the left as the right, that hee bee ingenious, subtil, wise, that he tremble not in doing his operations, that hee have a good eye, that hee have good experience in his art, before he begin to practise the same. Also that he have seen and observed of a long

time, of learned Chirurgians, that he be welmanered, affable, hardy in things certaine, fearefull in thinges doubtfull and dangerous, discrete in judging of sicknesses, chast, sober, pitifull, that hee take his reward according to his cure and habilitie of the sicke, not regarding avarice.

Lowe's textbook it should be noted is only partly in dialogue form, some later parts being purely didactic. In the second edition of 1612 it is Lowe who questions while his son John provides the answers.

SURGICAL TREATMENTS

The treatment recommended for simple and gunshot wounds, and the descriptions of various operations such as amputation and repair of hernia make interesting reading, even if the orthography presents some difficulty.

WOUNDS

Lowe recognised that wounds could be of varying severity, some being easily treated while others presented considerable difficulty. Wounds he stated:

...differ also in that some
heale easily, some are difficill,
and some are mortall, some without
intemprie, some little, other great,
superficiall, profound in the simple
or similar, others in the instrumentall
or orgaine parts, some in soft,
some in hard partes.²³

Those which heal easily:

...are in the flesh not touching
veines, nerves, nor arterys.²³

SIMPLE WOUNDS

In the treatment of simple wounds of the flesh Lowe considered healing to be promoted 'by joyning the lippes of it together' and also to 'dresse it with a clean cloth or soft sponge...' and put on it the white of an egge with lint', the latter he considered prevented 'inflammation, heate, dolor, and bleeding'. If the edges of the wound could not be joined by a simple 'legator' (i.e. bandage) it was to be sutured. Finally the wound was to be washed and treated with wet 'plumations' of claret wine, 'which have the vertue drie and comfort'. Lowe advocated closure of 'the lippes of the wounde by suture bandage and ligators'. Suturing was to be done by 'needle and thread', but 'in greate woundes...where there is great distance betwene the brimms' he considered that 'ciatrize bee the surer'. Suturing must not be attempted 'if the lippes of the wound be swollen and inflammed....till the inflammation be past'. Lowe comments on the time for taking out the stitches, 'in our ordinarie practise we limit no time, for some conglutine sooner than others, so when the part devided beginneth to conglutinate assuredly we take out the stitches'. Bandages in the treatment of wounds 'must be soft, cleane without hem or seame, and more slack in woundes than in fractors'. Débridement of wounds was to be performed by:

...taking away of that which is noysome,
as Iron, Balles, Stones, Wood, Cloth,
and such like, peeces of bones and congealed
blood.

Treatment of inflammation included treating the wound

with 'oyle of roses, with a white of an egge' and 'if the Dolor be great stupifie the part with oyle of popie and opium with mandrager, also the root of solanum brayed'.

Thomas Clifford Allbut (1836-1925) in a historical review of medicine and surgery to the end of the sixteenth century,³⁵ implied that prior to the period of antiseptic surgery introduced by Joseph Lister (1827-1912), in the 1860s, there existed a widespread rejection of the healing of wounds by first intention, i.e. without infection. However, it is quite clear that Peter Lowe expected simple wounds to heal by primary intention, and indeed this was desired by many surgeons from earliest times. Aulus Aurelius Cornelius Celsus (25 BC-AD 50) expected wounds to heal by primary intention, and that suppuration defeated the purpose of suturing, which should only be done after the wound had been cleaned.³⁶ Healing of wounds by primary intention was strongly welcomed by Henri de Mondeville (circa 1260-1320),³⁷ and later by Lorenz Heister (1683-1758)³⁸ and John Hunter (1728-1793).³⁹ The latter clearly recognised that 'pus was unfriendly to union' and that 'a wound is either simple or compound; the simple...is such a nature as to admit of union by the first intention'.³⁹

RELATIONSHIP TO AMBROISE PARÉ

Peter Lowe was a contemporary of the greatest surgeon of the era, Ambroise Paré (1510-1590). Of the 91 authorities cited by Lowe, there is a singular omission, that of Paré. There is no evidence that Lowe ever met Paré, despite the fact they both lived and worked in France for nearly three decades. Paré described himself as Maistre Barbier, Chirurgien, a class of surgeons Lowe despised (*vide supra*). The distinction between the barber and the educated surgeons was made on the length of the gowns they wore. The surgeons of the long robe were educated and scholarly, and felt superior to those of the short robe i.e. the barber surgeons. It was natural for Lowe to despise surgeons of the short robe, and perhaps the reason why he never quoted Paré. *The Oevres of Paré*⁴⁰ were published in 1575, in French, as he was not a scholar and knew no Latin. His works were quickly translated into Dutch, English, German, and even Japanese. It is therefore inconceivable that Lowe would not have been acquainted with Paré's publication or of his famous statement: 'Je le pansay, Dieu le quarit' ('I treated him, God cured him'), even if they had never met. Paré was a staunch Huguenot, whose life was saved by King Charles IX (1550-1574) who hid him in his bedroom, during the St. Bartholomew's Day Massacre in Paris in 1572. When the mob dispersed the king is reported to have asked Paré whether he was ready to change his faith, to which Paré gave his famous reply:

You have promised never to
ask me four things: to return to
my mother's womb... to fight in
a battle... to leave your services... to
go to mass.

Lowe until late in his life was a Catholic, but probably not particularly devout. Lowe and Paré served in opposing armies, and perhaps may also have been professional rivals. Peter Lowe's book differs little from the writings of Paré. For example, let the reader compare the description of débridement of wounds by Lowe (*vide supra*) and that of Paré:

...if there bee any strange bodies, as

peeces of Wood, Iron, Bones, bruised flesh, congealed blood, or the like....';
the surgeon, '...must take them away'.⁴¹

The reader will immediately recognise the similarity of the illustrations of surgical instruments (reproduced in The Classics of Medicine Library issue of 1981) in Lowe's 1612 edition to those in the works of Paré, who clearly exerted a strong influence on Lowe's surgical training in Paris. It is therefore not to the credit of Lowe that he omitted any mention of Paré in his textbook. John Hunter (1728-1793) also did not cite Paré in his treatise on the blood, inflammation, and gunshot wounds³⁹ but, unlike Lowe, cited no other authority. Hunter was a man who wrote the literature rather than read it. If Lowe cannot be accused of flagrant plagiarism, he can be criticised for lack of generosity in recognising the contributions of one of the greatest surgeons of all times.

GUNSHOT WOUNDS

In Paré's time there was widespread belief that gunshot wounds were poisoned by the gunpowder burns⁴² and that they should be cauterised by pouring a boiling mixture of oil and treacle⁴³ over them, or by applying scalding irons.⁴⁴ When the army of Francis I, King of France (1494-1547) invaded northern Italy in 1537, the bloody battle of the siege of Torino (Turin) produced so many casualties that the supply of oil ran out, and the young Paré was forced to use a cool paste of 'the yolke of an egge, oyly of Roses, and turpentine'.⁴⁵ Paré was surprised that his makeshift preparation did better than treatment by cauterisation. Paré concluded 'that Gun-powder did not participate anything of poyson', and vowed never to 'cauterize any wounded with Gun-shot'.^{41,46} Lowe, like Paré, considered that there was no 'venenositie in the pouder, and burning in the bullette',²³ and considered five steps to be followed in the treatment of gunshot wounds:

First, to draw the ball, secondly,
to appease the dolor, thirdly, to
cause suppuration, fourthly, in
mundifying generation of flesh and
consolidation, fiftly, in correction
of the accidents.

Lowe surprisingly makes no comment on cauterisation, but recommends the same topical applications employed by Paré including 'yolkes of egges' and 'oyle of roses'. He also recommends vinegar which, though unknown as such at the time, is a good antiseptic,⁴⁷ and although for simple wounds he suggested cleansing with 'plumations' of claret wine, he considered 'abstaying from wine' *per os* was important in the promotion of healing of gunshot wounds.²³ It is perhaps worth noting that ethyl alcohol in ordinary wines has little effect on bacteria.⁴⁸ The antibacterial effect is due to anthocyanes, a subgroup of polyphenols, the most important members being the red pigments malvaviscoside and oenoside, colourless equivalents being present in white wine.⁴⁹ The effect of wine is bactericidal not bacteriostatic, and this effect increases with ageing.⁴⁸ Wine therefore may be considered the forerunner of Lister's carbolic acid treatment! (The recent demonstration of the protective effect of alcohol consumption against *Helicobacter pylori* infection probably is not the effect of the alcohol, as has

been suggested, but the polyphenols in wine.)⁵⁰

In the discussion of gunshot wounds again there is no reference by Lowe of Paré, his comment on citing others being somewhat arrogant:

I will shewe my opinion touching the same, not making any mention of others, who have written on the same.²³

It is perhaps worth noting that prior to Paré's publication of 1545⁴⁶ several surgeons, notably Hieronymus Brunschwig (also Braunschweig) (1450-1553)⁵¹ and Bartolomeo Maggi (1477-1552),⁵² did not believe that gunshot wounds were 'poisoned'. None other than Paracelsus (1493-1541) had put forward the view that wounds should be left alone, or either treated by dried body juices, which he named *Mumie*.⁵³ The latter was heartily disapproved of by Paré.⁴¹ Sir William Osler (1849-1919) called Paracelsus the 'Luther of Medicine', since he was a spirit of revolt, standing out for *Der Geist der stets verneint*⁵⁴ and independent study.⁵⁵ It may seem strange to the reader that a physician, as Paracelsus was, should have had opinions on a surgical topic such as wound healing; perhaps not for one who gave the English language the adjective 'bombastic'.⁵⁶

It is surprising that none of the ancient remedies, known as enhemes, used to prevent suppuration e.g. copper salts or honey, which is sterile,⁴⁸ were used by either Paré or Lowe. The third recommendation of Lowe in the treatment of gunshot wounds, to cause suppuration, is perhaps the most persistent mistake in the history of surgery, dating back to ancient Egypt,⁵⁷ and persisting until the time of Lister. The formation of 'Good and natural' pus, *Pus Bonum et Laudabile*, was encouraged and indeed considered necessary in the healing of wounds.⁴⁸ Of course, suppuration does help to clean out dead tissue, although this today is done by débridement. However, it was appreciated by the ancients, including Hippocrates (460-375 BC) that not all pus was 'laudable', especially that which was sero-sanguinous and malodorous.⁵⁸ Occasional voices such as that of Theodoric, Bishop of Cervia (1210-1298), maintained that the formation of pus was not necessary, and indeed may delay healing of wounds.⁵⁹ Nevertheless, the necessity of pus formation for healing wounds remained surgical gospel until the era of antiseptic surgery.

Today it is recognised that the thick laudable pus is demonstrating the body's ability to localise infection, and usually due to infection with *Staphylococcus aureus*. Thin pus tends to be due to infection with *Streptococcus pyogenes*, while serosanguinous is not, strictly speaking, really pus. Malodorous pus is usually associated with infection with intestinal bacteria, such as *Pseudomonas aeruginosa*. The ancients recognised the clinical implications in different purulent discharges, but were unaware of the different bacteria causing them.

AMPUTATIONS

Treatment of gangrene of a limb by amputation shows a considerable amount of common sense.⁶⁰ Lowe advocates that, when faced with gangrene, the apprentice surgeon should select his site well proximal to damaged tissue.

...but wheresoever you make your amputacion, remember to cut rather a little of the whole,

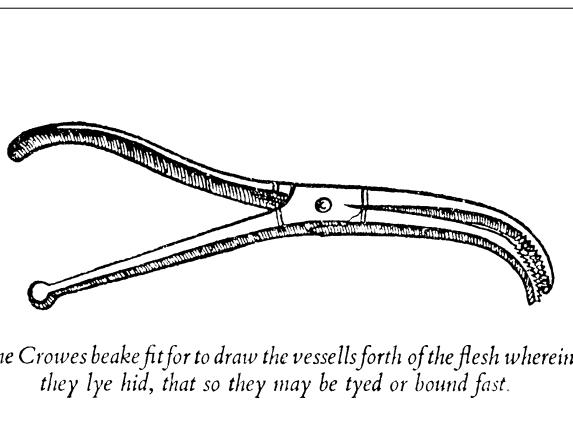
than to leave any of the infected, for if any remaine, it infecteth the rest, and so requireth nerve amputacion.²³

If there is a considerable amount of putrefaction Lowe suggests that the vessels be allowed to bleed:

If there be great putrifaction, let it bleede a little, for that dischargeth the part, and so its less subject to inflamation.²³

According to F.H. Garrison (1870-1935) Peter Lowe was the first to employ ligation of arteries in amputation.⁶¹ However, this is an error since this was first done by William Clowes.

...ut yee shall heere further note that one Gulemen,⁶² a famous Chirurgeon in Fraunce, with other very learned and skilful men, counseleth us to drawe out the veins and arteries with an instrument called a Ravensbill,⁶² (Figure 7) and then they tie those vessels with a double strong ligature or thread, and so safely stay the bleeding....⁶³



The Crowes beake fit for to draw the vessells forth of the flesh wherein they lye hid, that so they may be tyed or bound fast.

FIGURE 7

Illustration with footnote in The Apologie and Treatise of Ambroise Paré.⁴¹ This is probably the same instrument referred to by William Clowes (1544-1604) as a Ravensbill.⁶³

Both Lowe and Paré⁴⁰ recommended the use of cautery to stop bleeding, especially when putrefaction was present. However, both were strongly opposed to cauterisation of the stump with hot oil or metal cautery especially when the tissues of the stump were healthy.⁶⁴

Lowe advised cutting:

...foure inches from the joynt, either above or under...which is both more easie, and sure than in the joynt.²³

Lowe advised the use of a tourniquet:

The Chirurgian shall pull up the skin and muscles, as much as he can, afterwardes he shall take a strong ribband, and bind the member fast, above the place two inches, where

the amputacion shall be....²³

Paré also advocated the use of a tourniquet,^{41,65,66} but neither he nor Lowe were the first to do so, since there is an illustration of the use of a tourniquet in an amputation by Hans von Gersdorff (circa 1456-1517).⁶⁷ Lowe believed that the use of a tourniquet made the:

...skin, veines and arters may be more lengthened, that after the amputacion, they be more apparent so be knitte or cauterized.²³

Paré considered that:

This ligature hath a threefold use; the first is, that it hold the muscles drawne up together with the skin, so that retiring backe presently after the performance of the worke, they may cover the ends of the cut bones, and serve them instead of boulsters or pillowowes when they are healed up, and so suffer lesse paine the compression in sustaining the rest of the body.⁴⁰

This clearly antedates the first flap operation for amputation by James Yonge (1646-1721)⁶⁸ and the first double-flap procedure by Hugues Ravatot (fl 1755).⁶⁹

Once again the writings of Lowe and amputation are singularly similar to those of Ambroise Paré.

HERNIAL REPAIR

Lowe was conservative in his approach to hernial surgery:

I am of the opinion with the learned, not to attempt this operation, but rather to use a trusse, so in processe of time, nature ingendreth certaine peice of flesh in the hole of descent.²³

However, Lowe's prudence seems to have left him in his recommendation for intractable 'tumor inguinall called Bubonocle' i.e. one which descends into the 'coddes' (testicles):

If by these remedies, it reduce not being great abundance of winde, yee shall use five, or sixe punctios with a needle for the purpose, which dissipeth the winde, and reduceth easily.²³

Paré gives a detailed description of operations which can be performed for hernias, but does not mention 'puntios with a needle', which appears an idiosyncrasy peculiar to Lowe. How much described in the works by Lowe and Paré is original, and how much represents previously unrecorded accretions of earlier workers, remains to be researched. It is worth noting in this regard that Pierre Franco (1500-1561) was the first to describe an operation for strangulated hernia.^{70,71}

GLASGOW DAYS

We know that Lowe was in Edinburgh in 1595, for the English ambassador was informed that there was in town a 'new admittit chirurgien to the King of France, called Mr. Lowe, Scottishman'.¹⁹ The reason why Lowe left France for his homeland at this time is not known, but may have

been his concerns over religion as previously mentioned. It is probable that while serving in the army of the Protestant Henry of Navarre, Henry IV of France, protector of the Huguenots, Lowe converted from Catholicism to Protestantism. With the tergiversation of Henry IV to catholicism in 1594 in order to take the throne, Lowe may have considered it prudent to leave for home. As it was, Henry IV was murdered by a mad fanatic in 1610, the same year that some believed Lowe to have died.⁵ More puzzling was Lowe's decision to settle in Glasgow, which although a town of great antiquity with a University since 1451, was of no great size and had an inferior civic position in point of status. Perhaps then in his late forties he desired to be free of the *Sturm und Drang* of major centres, and so chose Glasgow for his semi-retirement. In this regard it is noticeable that Lowe never held the chief office of the college he helped found.

Lowe was certainly in Glasgow in the early part of 1598, since a minute of the town council in the following year records, 'it is agreit of new and contradit betuix the towne and Doctor Lowe for 80 merkis be yeir', which would suggest renewal of some financial contract.¹⁹ Although Lowe was acceptable as a surgeon, and had been admitted as a burgess of the town gratis, he felt the displeasure of the church. The Kirk session censured him ordering his 'repentance on the Piller', an erection where penitents had to stand during the sermon,¹⁹ not unlike the later ecclesiastical discipline of the cutty-stool. The nature of Lowe's offence is not known, but probably was trifling in nature as the punishment otherwise would have been more severe.⁵ Lowe was a man of wit and humour, if his epitaph is to be believed, and may unwittingly have not complied with the rigid Presbyterian motions of decorum and solemnity.¹⁹

THE CHARTER

In May 1599, Lowe memorialised King James VI on the appallingly low standards of medical care in Glasgow and the West of Scotland which probably did not differ materially from other parts of Scotland.⁵ He would certainly draw the King's attention 'of certain abusers of our Art', namely the barber surgeons whom he never missed an opportunity to scorn, and perhaps as previously discussed the reason for him never making a reference to Ambroise Paré. The introduction of the charter certainly shows Lowe's influence, and gives the clue why barber surgeons were excluded from 'the brethern of chirurgerie' as the College was originally called. The Charter notes:

...the grit abuisis quhilic has
bene committed in time begane,
and zit daylie continuis be
ignorant, unskillit and
unlernit persons, quha, under
the colour of Chirgeanis,
abuisis the people to their
pleasure, passing away but
tryel or punishment, and
thairby destroyis infinite number
of aure subjectis.⁵

The charter goes on to lay down in precise terms the duties of the 'brethern' which, as Scott¹⁹ has suggested, almost certainly was written or at least influenced by the King himself. The first duty was to examine and to licence all

those who were found properly trained to practise surgery and who were of good character. The second duty was medico-legal, the 'visitor of the college' being ordered to visit 'everie hurt, murtherit, poisonit, or onie other persoun tane awa extraordinarilie, and to report to the Magistrate of the fact as it is'.⁵ The third obligation was to make regulations for the good of the lieges in medical matters: to 'mak statutis for the comoun weill of our subjects anent the saidis artis'.⁵ The fourth statement of the charter gave power to inspect the diplomas of physicians requiring them to produce 'ane testimonial of ane famous universite quhair medecine be taught'.⁵ This is a clear reference to the need for foreign study, since at the time no university in the British Isles taught medicine. The next two statements, the fifth and sixth, refer to the control of the sale of medications and the regulation of poisons. As for the former 'an manir of personis sell onie droggis within the Citiie of Glasgow, except the same be sicktit be..(the) apothecar, under the pane of confiscastioune of the droggis'.⁵ As far as poisons were concerned, 'nane sell retoun poison, arsenik, or sublemente, under the pane of one hundred merkis, excep onlie the apothecaries'.⁵ The seventh statement makes provision for free health care of the poor, members being required, 'to visite and give counsell to pure disaisit folkes gratis'.⁵

The late Regius Professor of Surgery and President of the Glasgow College during the years 1962 to 1964, Sir Charles Illingworth (1899-1991) considered that, as an instruction for the regulation of medical and surgical practice, the Glasgow College's Charter was unprecedented in the British Isles; indeed, a veritable Magna Carta of health.⁷² Certainly it set up the first medical teaching body, the first medico-legal protocol, the first drug and poisons regulation, and the first medical charity in Glasgow and the West of Scotland.⁷³

Peter Lowe was buried in the cemetery of the Glasgow Cathedral (Figure 1). The tombstone bears the date of his death as 1612, not 1610, although most consider the latter as his date of death.¹⁹ Duncan considers the former, 1612, as probably accurate.⁵ He was survived by his second wife and his children, but the line subsequently became extinct⁶ (Table 1).

CONCLUSION

Peter Lowe's major achievement was in uniting physicians and surgeons into one corporation. The physicians and surgeons of London were united in one faculty in 1421, but the union did not last long.⁶ Lowe achieved this union in 1599, thus creating the third oldest of the medical corporations in the British Isles, being preceded only by the Royal College of Physicians of London (1518) and the Royal College of Surgeons of Edinburgh (1505). The Royal Charter he obtained from King James VI of Scotland (1566-1625) was possibly written by the King himself. The comprehensiveness of the charter in providing guidelines for the regulation of medical practice is remarkable for its time; it is certainly superior to anything that had been written before 1599. The expectations for the proper practice of medicine, surgery and pharmacy are clearly defined, and the foundation of a forensic medical service instituted, and perhaps most important of all, a free service for the sick poor ordered. Maister Peter Lowe can be fully credited for this remarkable achievement. His other major achievement was the publication of a textbook of surgery. Although there had been other publications in English on

aspects of surgery this was the first comprehensive textbook of surgery in English. Moreover, it was written with the student in mind. The book is a historical landmark as it defines the practice of surgery at the end of the sixteenth century, taking its place alongside the *oeuvres* of Ambroise Paré. Lowe's piracy and espionage can be excused, since it was directed against an inimical England, not his homeland. His lack of magnanimity in citing his famous contemporary Ambroise Paré anywhere in his book on surgery does him no credit.

TABLE 1

The known descendants of Maister Peter Lowe* (based on Alexander Duncan's account).⁶

Peter Lowe (circa 1550-1610)
II
First wife Grizell Pollart by whom he had a daughter Christine
II
Second wife Helen Weems or Wemyss by whom he had a son: John Lowe merchant burgess of Glasgow, who died about 1670
I
James Lowe . Edinburgh writer to the Signet. Dates of Birth and Death unknown
I
Robert Lowe , only son of James Lowe, and like his father writer to the Signet, Edinburgh. Dates of birth and death unknown. Had two children by his wife Jean Gray of Carntyne and Dalmarnock
I
William Lowe , 'late of Newbern, North Caroline' died towards end of eighteenth century without issue. Date of birth unknown.
I
Anabella Lowe , died a spinster

Note: John, James, and Robert, although not medically qualified were all admitted to fellowship of the College on the basis of their being descendants of the founder. The veneration of Maister Peter Lowe thus spans nearly two centuries.

* II = marriage
I = descendant

NOTES AND REFERENCES

- The last line is somewhat reminiscent of the epitaph which William Butler Yeats (1865-1939) wrote for himself at the end of the poem:
'Under Ben Bulben:
Cast a cold eye
On life, on death
Horseman, pass by!'
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- ¹² Bingham C. *James VI of Scotland* London, England Weidenfeld and Nicolson, 1979, p 142-151.
- ¹³ Fraser A. *King James VI of Scotland and I of England* London: Sphere Books Ltd, 1977; 127.
- ¹⁴ Jack RDS (ed.). *Scottish prose 1550-1700* London: Calder and Bayars Ltd, 1971; 111-8.
- ¹⁵ Buchanan WW. Jamie the Saxt's a counterblaste to tobacco *Ann Roy Coll Phys Surg Canad* 1996; **29**:417-20.
- ¹⁶ The language of the Glasgow charter and 'A Counterblaste to Tobacco' is what literary scholars refer to as Middle Scots i.e. 1450-1700. This was used by poets such as Robert Henryson (c1420-c1490), William Dunbar (1476-1522) and influenced by the Inglis of Geoffrey Chaucer (c1340-c1400). As such it is distinct from the Lallans of Robert Burns (1759-1796) and from modern Scots i.e. 1700 to present.
- ¹⁷ Scott L. Peter Lowe, surgeon to Henry IV of France and James VI of Scotland. *Coll Bull R Coll Physicians Surg Glasg* 1980; **9**:12-19.
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- ¹⁹ Scott, L. *A note on the life of Peter Lowe, Scotchman, Arellian, doctor in the Facultie of Chirurgerie in Paris, and chirurgeon ordinarie to the most victorious and Christian King of France and Navarre* Birmingham, Alabama, USA: The Classics of Medicine Library, 1982.
- ²⁰ Finlayson J. *Maister Peter Lowe* Glasgow: James Maclehose and Sons, 1889.
- ²¹ Cowan EJ. *The myth of Scotch Canada, celtic heritage* 1996; 10, 28. The adjective 'Scotch' was what Scotsmen called themselves until the late nineteenth century. The English began at that time to use the term 'Scotch' in a pejorative sense in order to reduce Scots when they virtually ran the British Empire to their proper colonial status.
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- ²³ Lowe P. *The whole course of chirurgerie* London: Thomas Purfoot, 1597. (Reprinted by The Classics of Medicine, Birmingham, Alabama, USA, 1981.)
- ²⁴ The Auld Alliance was both an offensive and defensive treaty against England established between John Balliol (1249-1313) of Scotland and Philip IV (1285-1314) of France in October 1295, on the eve of the War of Independence (1296-1328). In addition to its political dimension, social and cultural exchange between Scotland and France certainly enriched the former country. Scottish enthusiasm waned after the defeat at Flodden (1513) but the alliance was renewed by the Treaty of Haddington (1548) after the 'rough wooing' of Henry VIII (1491-1547). James V (1512-1542) had a French wife, Mary of Guise (1515-1560) and the first husband of the luckless Mary Queen of Scots (1542-1587). Francis II (1544-1560) was the dauphin of France.
- ²⁵ Lowe P. *An easie, certaine, and perfect Method, to cure and prevent the Spanish sickness* London: James Roberts, 1596.
- ²⁶ Cartwright FF. *Disease and history* New York: Dorset Press, 1972; 58-9.
- ²⁷ William Shakespeare referred to 'the malady of France' in at least seven of his plays. For example the humble English soldier named Pistol reminisces at the end of a battle with the French in King Henry V, Act V, Scene i, 75:
- 'News have I that my Nell is dead
i' the spital
Of malady of France'
- ²⁸ Van Wyck W. *The sinister shepherd: a translation of Girolamo Fracastoro's syphilidis sive de morbo gallico libri tres* Los Angeles: The Primavera Press, 1934 (Reprinted by The Classics of Medicine Library, Birmingham, Alabama USA, 1992).
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- ⁴⁰ Paré A. *Oeuvres complètes d'Ambroise Paré*. (Malgaigne JF [ed]) 3 vols. Paris: Baillière, 1840-41.
- ⁴¹ Paré A. *Apologie et traité (English Translation) - The apologie and treatise of Ambroise Paré* (Keynes G [ed]) New York: Dover Publications Inc., 1968; 117-42.
- ⁴² Several well-known medieval surgeons ascribed to the belief that gunshot wounds were poisoned. These included: Hans H. Von Gersdorff (fl 1500), Jacopo Berengario (Berengarius, Berenger) da Carpi (1470-1530) and Alfonso Ferri (1515-1595). For further discussion: Mettler, CC, Mettler FA. *History of medicine* Philadelphia: The Blakiston Company, 1947; 867. (Reprinted by The Classics of Medicine Library, Birmingham, Alabama USA 1986.)
- ⁴³ Treacle was the popular name for the popular panacea, known by the Greek name 'therica', originally the antidote to venomous bites. See Watson G. *Theriac and mithridatum. A study in therapeutics* London: The Wellcome Historical Medical Library, 1966.
- ⁴⁴ De Vigo G. *Practica in arte chirurgica copiosa... continens novem libros* Rome: per S. Guillireti et H. Bononiensem, 1514; **iii**:2-3.
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- ⁵⁴ Der Geist der stets verneint i.e. The spirit is always negative, a comment on Paracelsus' constant criticism of medical authorities.
- ⁵⁵ Osler W. Sir. *The evolution of modern medicine* New Haven, Connecticut: Yale University Press, 1921; 132-45. (Reprinted by The Classics of Medicine Library, Birmingham, Alabama, USA.)
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- ⁶¹ Garrison FH. *An introduction to the history of medicine* Fourth edition. Philadelphia: WB Saunders, 1929; 227.
- ⁶² We do not know the menaing of Gulemew. A ravensbill is probably what Paré refers to as a 'Crowes beak' an example of which appears in his account of his amputations (Figure 7) (41)
- ⁶³ Clowes W. *A profitable and necessarie book of observations* London, 1956.
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On behalf of the College, the Editor would like to congratulate Professor W. Watson Buchanan on being named the 1999 recipient of the prestigious John B. Neilson Prize. This annual award, given by the Hannah Foundation for Medical History, is given to the physician in Canada who has contributed the most to medical history.