The Scottish Society of the History of Medicine

(Founded April, 1948)

REPORT OF
PROCEEDINGS

SESSION 1988 - 89 and 1989 - 90

The Scottish Society of the History of Medicine

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CONTENTS

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THE FORTIETH ANNUAL GENERAL MEETING

The Fortieth Annual General Meeting was held in the unusual but attractive surroundings of the Members' House at Edinburgh Zoo, on 12th November 1988, with the President, Professor Waddell, in the chair. Approximately 60 members or guests attended. The Treasurer, Dr. Eastwood, explained the setting up of the Guthrie Trust and its relation to the ordinary funds of the Society. Support has been given by the Trust to publications by Dr. Kenneth Collins and Dr. Brian Moffat and to the Proceedings of the 11th British Congress of the History of Medicine. The latter had also had support from Surgikos Ltd. of Livingston.

The sole vacancy on Council, occasioned by the expiry of Mrs. Brenda White's two year term of office, was filled by the election of Professor Ronald Girdwood. The office bearers indicated their willingness to serve for a further twelve months and were duly re-elected.

THE ONE HUNDRED AND TWENTY FIFTH ORDINARY MEETING

This meeting directly followed the Fortieth Annual General Meeting at Edinburgh Zoo. The President, Professor Waddell, introduced Dr. Harold Swan who talked on the early clinical use of Penicillin and the role of Alexander Fleming.

MOULDY CASE NOTES AND PENICILLIN: A RE-APPRAISAL OF FLEMING'S ROLE

Recently an article was published in MEDICAL HISTORY (1), reporting the discovery of two contemporary case notes which showed that the product of the mould *Penicillium notatum*, unconcentrated, unpurified and in the form usually known as crude penicillin, had been used successfully on patients in 1930. This was in Sheffield. The two recovered case notes are dealing with ophthalmia neonatorum and appear to be the earliest surviving documented evidence anywhere of successful penicillin therapy. The discovery of these notes has encouraged a reappraisal of events concerning the early history of penicillin.

Howard Florey, whose great contribution a decade later was in the development of penicillin, had always known of the early unpublished clinical work of which the recent discovery was a part, although clinical experiments with penicillin had ceased in Sheffield

by the time he went there as Professor of Pathology in 1932. The recovery of the notes has authenticated and dated some verbal statements published by Florey in 1949. (2) They had been said to him by Dr. C. G. Paine, who had done the pioneer work on the use of penicillin on patients at the beginning of his career when a newly qualified doctor working in the Sheffield Royal Infirmary. Paine had been a medical student at St. Mary's Hospital London and Alexander Fleming had been his lecturer. It was on his own request that he had obtained the mould directly from Fleming.

Paine has always said that as a young clinical pathologist he had used penicillin to treat eight patients who were under the care of two doctors more senior than himself, a dermatologist and an ophthalmologist. Three patients were suffering from a pyogenic skin disorder, sycosis barbae, and were not helped by his own hospital-made crude penicillin. However, five eye patients with serious infections showed four cures.

Although there were only these four cases of cure they were demonstrating a remarkable and novel mastery over three dangerous microorganisms, the gonococcus, the pneumococcus and the staphylococcus. Yet, rather like first time observations in other fields of medicine, it was a new mastery over disease which, at the time of its occurrence at least, escaped deep understanding by the clinicians who were most closely involved. Paine, who had no beds or patients of his own, does not seem to have received any special encouragement from others to carry on with this promising work and allowed the opportunity to pass him by. So he went on to other things.

It is opportune at this stage to draw attention to the many technical difficulties which had to be overcome by anyone preparing an effective crude penicillin in 1930. There was an obligatory wait of more than a week after culture innoculation before the peak level of crude penicillin was reached. The biological production of the penicillin was variable and was bedevilled by a fickleness which made it necessary to assay the penicillin content of every batch. This had to be done directly before use because a previously demonstrated potency could disappear inexplicably in the meantime. Because of this uncertainty there was no way of storing even a good preparation. These unsurmounted technical awkwardnesses made the production of penicillin labour intensive and it was difficult if not impossible to time-table such a tedious production to the emergencies of clinical practise, certainly from a small hospital laboratory.

We dare not assume now, some fifty years later, there being no contemporary correspondence on the matter, that Paine would have wanted to cancel his planned career in order to continue with penicillin work if he had been given appropriate encouragement by his seniors to do so. The answer to this interesting speculation will never be known. In the event he moved on to his previously planned career. The penicillin work had after all begun as a stop-gap occupation for an active young man about to hand in his notice from one job and take up another.

The case notes were discovered in a dank Georgian hospital basement and provide the first evidence in writing of what Florey had already believed to be true. They relate to two of the three successfully treated cases of ophthalmia neonatorum and the dates are November and December 1930. Facsimiles of these records have been included in the 1986 publication. Until these case notes were discovered in Sheffield the earliest existing patient specific record of successful penicillin therapy had been in manuscript in the British Library referring back to Fleming's cure in 1932 of a pneumococcal eye infection in (Dr.) K B Rogers. (3)

There seem to be no satisfactory early records or publications from Fleming or his staff to illustrate clinical use of penicillin between its discovery in 1928 and 1932 when he treated Keith Rogers, other than the report of an unsuccessful attempt to cure Dr. S. R. Craddock of sinusitis in 1929. (3) Weaker sources, including a contemporary anecdote by Fleming himself, give evidence that he was not idle clinically in the early years after his discovery and was interested in the use of penicillin, particularly in such conditions as leg ulcers and septic wounds but there seems to be an absence of key documents to illustrate this. It is not claimed that Fleming ever attempted to initiate closely observed scientific testing of penicillin in clinical usage – the days of that type of trial were yet to come. Had written records existed in the archives of St. Mary's Hospital, reflecting cooperation with clinical colleagues, this would have given authoritative evidence that Fleming was indeed alive to a clinical potential for penicillin. Some have denied this. However Hare states that 'Obtaining patients to treat seems to have been Fleming's biggest problem.' (4) Several who knew him stated that Fleming was undoubtedly aware of possible clinical uses for penicillin both during the early years (5) (6) (7) and up to 1937 (8) and was more aware of the potential for clinical use than he has recently been given credit for, even though his furthest vision may have been a mere crepuscule of the role of penicillin as was later achieved. The absence of any contemporary records of the clinical efforts which he seems to have made during the years which followed his discovery in 1928 is a sad lack whatever they might have shown.

Fleming's role can be summarised. He had discovered the existence of the substance itself. Many would have missed it. He had coined the name penicillin and characterised its biological action and also turned penicillin into a useful scientific bench tool. He published his discovery. In fact he left it in an excellent scientific form for anyone else to develop who might choose to do so (Chain's later response to Fleming's paper gives support to this view) and he had also drawn attention to clinical potential. He seems to have sent a sample of the mould freely to all who asked for it.

Fleming himself never improved on unstable crude penicillin, and this was a stumbling block. Nor did Harold Raistrick succeed significantly in his attempts to do this (9) and he was Professor of Biochemistry, at the London School of Hygiene and Tropical Medicine. He and two colleagues worked on penicillin from Fleming's mould and hoped, but without success, to purify and stabilise it. Howard Florey respected Raistrick as a mycological chemist, describing him once in a complimentary way as being 'no slouch'. Raistrick's failure must be regarded more seriously than the less sophisticated efforts, which were unfortunately never published, to purify penicillin in Fleming's own laboratory. (10) (11) Fleming himself was not a chemist and seems never to have absorbed a feeling for the advances of contemporary biochemistry, indeed seems not even to have appreciated the significance of progress towards the purification of penicillin made by his own staff. One must contrast this with Florey, of whom Chain said 'Though Florey had no specific biochemical training, he was very conscious of the importance of biochemistry for progress in all the biological sciences...'. (12)

The history of the remainder of the story is almost commonplace. Florey in Oxford created, organized and directed a team of top-class colleagues who produced a purified and stable injectable penicillin of demonstrated safety and effectivity. For this work Florey shared a well deserved Nobel prize with Fleming, and the prize was also shared with Ernst Chain.

Chain's expertise in the field of enzyme and other biological chemistry was fundamental to the success of the Oxford project. Indeed it was as a laboratory project for Chain that the relevant research was begun at all, Chain and Florey having decided that work on antibacterial substances would suit their purposes best. Chain seems to have found for himself Fleming's original paper and conveyed his enthusiasm about its potential to Florey (13) though Florey, as an editor, should be assumed to have known of Fleming's paper from the time it was published. In his turn it was Florey who drew Chain's attention to Raistrick's paper of 1933. (14)

This interest in penicillin as a ploy for bench research is illustrated in the two applications for grants to fund the work. Both applications were sufficiently broadly based to show that penicillin was not the only substance of interest, and by our inference, that penicillin was not sufficiently assured as a project to be thought of at that time as a sure winner. Therapeutic possibilities were stated to exist but this therapeutic potential applied also to the unsuccessful substances, pyocyanin, subtilin and products of other soil organisms which shared the case with penicillin but did not share in its ultimate success.

Chain drafted the application to the Rockefeller Foundation and Florey seems to have accepted the draft with little modification. (15) The primary aim was to seek financial support for biochemical research. The proposed work would involve purifying biological products and thereby putting them into a useful form such as could be used for intravenous injection against appropriate pathogenic microorganisms. This would call upon Florey's considerable expertise in animal injections and in assessing the results scientifically. Plans for trials on patients were not referred to. This might have been deliberately played down in an application for funding for biochemical research but Chain said subsequently 'I should like to point out that the possibility that penicillin could have practical use in clinical medicine did not enter our minds when we started our work on penicillin'. (16) Florey said likewise 'I don't think it ever crossed our minds about suffering humanity; this was an interesting scientific exercise. Because it was some use in medicine was very gratifying, but this was not the reason that we started working on it. It might have been in the background of our minds – it's always in the background in people working in medical subjects ... but that's not the mainspring'. (17)

If we accept these statements of both Florey and Chain, which we must do, we can infer that the two key men were still not much impressed by Fleming's 1929 hint about clinical usefulness nor by Paine's scanty but harder clinical evidence told to Florey in 1932. (1) Because of discoveries in the intervening years, notably of the sulphonamides, hindsight might lead us to expect that medical scientists in their position in 1939 would be thinking more freely along new lines involving the therapeutic potential for chemicals and natural products. Yet it was Fleming who was thus criticised recently in a widely shown television film, prepared with the help of eminent men. It would seem, we were told, that Fleming could be criticised for not being aware of the great clinical usefulness of his discovery and doing something about it. This hindsight criticism ignored the acceptable fact that Fleming had characterized his new discovery and had hinted at its possible clinical usefulness several years before the new era had even begun.

Although the successful application for funding for the project appeared to give equal research weighting to at least three organisms it was at some undocumented time subsequently and presumably after the research had begun that the Oxford workers fully realised the clinical potential of penicillin and concentrated entirely on it. The pyocyanin

work led to a publication in 1941 and the work on B subtilis seems to have been dropped. The international praise so well earned by the Oxford penicillin team for their dedicated work once the penicillin project got under way has never been in any question, nor is it being questioned now.

The story could happily have ended here had there not been several quite recent publications of books related to penicillin , notably biographies of Florey, of Fleming and of Chain. The amount of scholarship which has gone into R. G. Macfarlane's twin biographies of Florey and Fleming is so great that no one less well qualified should lightly intrude on his opinions. One of the opinions about which he seems to have felt strongly was that the popular acclaim for Fleming was *mis* directed (18); and that Florey did not get the credit he deserved. (19) These two opinions should not of course be treated as reciprocal.

Objectively considered, it is undoubted that more public acclaim went to Fleming than to Florey. Initially this directing of the focus of credit towards Fleming may have been led, if unwittingly, by Florey himself who had shunned the press reporters who had clamoured at his door in Oxford. At St. Mary's Hospital the reporters were not discouraged, indeed both Sir Almroth Wright who was Fleming's superior, and the Dean, later Lord Moran, seem to have encouraged publicity, helped by Lord Beaverbrook's personal interest in St. Mary's Hospital. This unfortunate spurning of attention in Oxford with the consequent extra focus on St. Mary's occurred at a most sensitive time in the history of penicillin when news was being broken to the world about the discovery and preparation of penicillin as an injectable substance of miraculous value. Oxford may feel that it has never recovered from this.

But by saying that credit was mis-directed towards someone other than Florey and five years later by subtitling a definitive biography on Fleming as '*The Man and the Myth*' (20) Macfarlane has chosen to take up a stance which is interpreted as a denigration of the esteem put on Fleming's contribution. Is this stance justified? The belittling of Fleming was further developed in a widely observed BBC HORIZON programme (21) transmitted on 27th January and again on 1st February 1986. In this film Professor Macfarlane, Professor Hare, Dr. Heatley and others appeared. Hare's lightly spoken comment that Fleming was about as third rate as he himself was (Professor Hare was not third rate) set the tone of the programme as it referred to Fleming.

It is impossible in a short paper like this to assemble all the evidence for reinstating the credit due to Fleming. Yet if no attempt at all is made it may be that a point of view which appears throughout Macfarlane's scholarly books could go down through history as unchallenged fact.

Fleming has been roundly criticised for not developing his discovery in the 1930s, chemically and therapeutically. One has therefore to draw attention to the excellent circumstantial evidence derived from the early 1930s that Florey can also be the object of the same type of hindsight criticism should one want to do this. He is likely to have known as much about penicillin in these early years as any other top scientist (22) but saw no scope for work on the substance until the context already referred to. He had been an editor of the journal in which Fleming's original penicillin paper appeared in 1929 and is known to have been very interested in Fleming's earlier lysozyme discovery. He attended a meeting of the Pathological Society of Great Britain in 1932 in Oxford in which Fleming

delivered a paper and he was standing next him for the congress photograph. We are informed by Dr. Paine that he told Florey in 1932 about the clinical successes with penicillin in Sheffield although Florey did not seem interested. His continuing awareness when in Oxford of the work of Fleming and Paine will be referred to.

We should perhaps interpret Florey's apparent disinterest in penicillin during most of the 1930s as his seeing no scope in it for good scientific research rather than assume that he had a personal whim against it, for Florey had a good nose for a promising research ploy; and he was a good scientist. It is also clear that he continued to be uninterested in the idea of research on penicillin even after he went to Oxford when he had an excellent biochemist on his staff, preferring instead, for a few years, to support and initiate other good research projects. Florey had not forgotten about Paine's clinical work using penicillin for he referred to it in at least one lecture given to his 1935-36 undergraduate class in Oxford. (23) Then in 1938 there came a pressing need to find a new project for Chain, a biochemist of great ability whom he had originally invited in 1935 to work in his department. He needed something which would bring money into the department and also pay Chain's salary.

Their application for money to support such a project was submitted first to the Medical Research Council and immediately afterwards to the Rockefeller Foundation. This application was very successful. Looking back on that time it is valid to ask if the immensity of the clinical usefulness of penicillin was not a lucky by-product of a straightforward idea for predominantly bench research in Oxford.

Fleming on the other hand had made his discovery and had done his characterising work on penicillin ten years previously. He had analysed his observation before anyone in the world had knowledge of antibiotics as we think of them today or even thought in practical terms along such lines. The sulphonamides did not arise effectively till after 1935 and they altered medical attitudes. Florey's own attention must have been drawn at a practical level to the significance of the sulphonamides by two family events. In 1932, before sulphonamides, his sister's small son developed a mastoid infection. He died of related meningitis. (24) Later his own daughter also developed a mastoid infection. This was treated by surgery and also by sulphonamides. (25) She recovered. The treatment against microorganisms at the time of Fleming's discovery of penicillin had been by antiseptics, unless one could boost body defences. Despite this unfavourable atmosphere of thought in the medical world around him, Fleming insisted on talking of clinical usage of penicillin as a powerful antibacterial substance and even used the word 'injected' in his original 1929 article despite the protestation of the head of his own department. He will have been referring to local injections. Even this concept of injecting an antibacterial substance into a patient at all, whether or not into an infected tissue, shows good awareness on Fleming's part of the lethal effect of penicillin on sensitive organisms together with its apparent harmlessness to body tissues. This represents thinking along lines which were ahead of most of his generation. It is nowadays easy to forget this demonstration of forward thinking. He backed up his belief by using penicillin as a surface application on infected areas on patients. But he seems to have been very ineffectual in handling the clinical side of the problem.

In speaking to his clinical colleagues, whose cooperation he needed, Fleming's views on penicillin will doubtless have been as diffidently presented and retiringly proposed as fitted his personality when in professional gatherings. He was not a persuasive speaker,

indeed his inadequacy in this direction has been described much more pungently. He seems to have fared better in small social groups. His peers did not regard him as a top scientist because he did not conform to their ideas of a top scientist, provided one accepts Macfarlane's view of the importance of acclaim from the Royal Society as representing fair recognition of such a person. It seems wrong to ignore the communication disadvantage from which Fleming suffered. He lacked extrovert flair and could be taciturn.

It does appear probable that Fleming progressed with the work on penicillin almost, but not quite as far as any laboratory worker could have done in the early 1930s. He might have injected crude penicillin into infected mice (26) but did not. He might even have injected crude penicillin into patients, at least after 1932 when it was shown that a solution of inorganic chemicals could replace the protein rich animal broth as the growth medium. (9) No one else seems to have tried injecting crude penicillin into patients until the place for penicillin had already been established. (27)

What Fleming did achieve still leaves him with a unique claim to fame. While it may well be felt that Howard Florey received from the general public too little thanks for what he did this was not because Fleming received too much. One would have expected appreciation from history for the gift of penicillin to be expansive enough to go to all who deserve it. It would go to Fleming as the discoverer of penicillin, even though he had not developed his discovery (and whether he was a top scientist does not now seem relevant); and equally to Florey as the pioneer developer of penicillin, who was a top scientist even though he had not discovered the substance. This sharing of honour by Fleming and Florey for quite different facets of the same jewel could have been handled in recent years without any lessening of our appreciation of the essential parts played by Chain, Heatley and the others of the Oxford team.

ACKNOWLEDGEMENTS

I remain indebted to Dr. Milton Wainwright for his enthusiasm in our penicillin partnership and for his comments on this paper when in draft. The paper was delivered to the Scottish Society for the History of Medicine at a meeting in Edinburgh 12th November 1988 and has been prepared for publication with some modifications.

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Dr. Swan's paper was followed by one from Dr. David Wright, who talked on Animals in the History of Medicine.

ANIMALS IN THE HISTORY OF MEDICINE

Before considering some thoughts on this subject, chosen primarily for interest and amusement, it is right to remember that man has, in general, paid little attention to the feelings of his fellow creatures. Pain, frustration and unhappiness can be communicated by animals and we should try to be sympathetic to these emotions. It is surely wrong that countless millions of animals have been killed to make man's life easier.

Animals in myths and legends.

In Egyptian legend, Horus, the son of Isis and Osiris, represented as a sparrow-hawk, was attacked by a devil and lost his eye. The eye was eventually restored and Horus came to be represented symbolically as an R shape containing a hawk like eye. Egyptians prayed to Horus in time of trouble and this symbol became a powerful protective charm. Over the centuries it has become the R symbol on our prescriptions, its role as a protective charm or mark of respect merging with the abbreviation for Recipe (Latin for take this).

The snake seems to have been associated with medicine for many centuries. In Greek mythology, Asclepius (or Aesculapius) was usually represented by a snake entwined around a staff. As the son of Apollo he had inherited healing skills, and followers of the cult of Asclepius practised medicine in temples of healing in which there were often snakes. Modern medicine is descended, through the Hippocatic tradition, from these early Greek practices and the symbols of Asclepian snake and staff continue to represent medicine in our world of arms, crests, badges and logos. Animals play a role in many old remedies, such as this, quoted in J. G. Frazer's "The Golden Bough", a wonderful collection of magic and religion. A young frog was held for a few moments inside the mouth of infants with thrush. The frog was supposed to take the malady to itself and relieve the sufferer. " "I assure you" said an old woman, who had often superintended such a cure, "we used to hear the poor frog whooping and coughing mortal bad, for days after" ".

Animals as a direct cause of morbidity and mortality.

Animals can harm man by means of direct trauma, by the release of venomous toxins which are normally used by the animals for protection or to kill prey, or by being poisonous to man when eaten. David Livingstone provides an example of direct trauma. He was attacked by a lion when trying to save one of his African helpers. He was nearly killed, but survived with a broken humerus and was left with a poorly united fracture. When he died some years later and his body was brought back to civilisation, the appearance of his arm confirmed positive identification.

The Spanish Fly, Lytta vesicatoria, a blister beetle, contains a potent toxin, Cantharidin, which was deliberately used in medicine, until this century, to produce blisters. Handbooks for First World War medical orderlies contain details of the technique for applying the toxin as a plaster.

In 1606, sailors with the Spanish explorer De Quiros, in the Pacific, became ill after eating certain fish, as did the crew on James Cook's second voyage (1772-75). The disease that they suffered is known as Ciguatera and is now the commonest food-borne disease in the Caribbean and the South Pacific. Ciguatoxin is produced by a tiny dino-flagellate organism, Gambierdiscus toxicus and, and through the food chain, becomes concentrated in the larger fish of coral reefs. Ingestion by man causes nausea and vomiting and a number of unpleasant neurological symptoms which may last for months.

Animals as vectors of disease.

Such diseases include Bubonic Plague, Malaria, Rabies, Yellow Fever and Lyme Disease, which was shown in 1982 to be due to a tick borne spirochaete. Celsus, writing on Rabies in about 30 AD, realized that a poison was transmitted in the saliva of infected animals and described the disease as "most wretched, the sick person being tormented at the same time with thirst and the fear of water: there is but little hope". Prevention has always offered far more help than cure. A rigid quarantine for cats and dogs was imposed in 1897 in Britain following dramatic increases in the disease in the early 1890s. This was successful until 1918, when returning soldiers smuggled pets into the country through Plymouth. Some 360 cases were reported before the outbreak was controlled in 1922 and Britain has been virtually rabies-free since then. It will be interesting to see if our island status is surrendered by the Channel Tunnel, as foxes and bats, both at home in dark underground places, are common vectors of rabies in Europe.

Animals in Therapeutics.

The Ebers Papyrus of about 1500 BC records a cure for baldness as equal parts of the fat of the crocodile, the goose, the hippopotamus, the ibex, the lion and the snake. The first edition of the London Pharmacopoeia contains nearly 2000 remedies, of which roughly a half are simples. About one tenth of these are of animal origin, such as lozenge of dried vipers, fox lungs or oil of ants. The British Pharmacopoeia of 1898 has some 900 preparations and some 70 of these have some animal connection. Examples of these are Fel bovinum purificatum (ox bile), Thyroideum siccum (powdered dried sheep's thyroid) and Cera alba and flava (white and yellow beeswax).

In our modern Pharmacopoeia we still have many animal derived preparations, such as gelatin based plasma expanders, Heparin (from cows and sheep), Insulin (from cows and pigs) and Protamine (from salmon). Animals also play a role in the production of catgut and silk for sutures and, from rabbits and horses to chick embryo tisssue cultures in the production of vaccines.

Animals and Medical Research.

Much early anatomical knowledge was gained from animal dissection, with writers such as Galen having a prolonged and sometimes confusing influence.Vesalius emphasized the value of human dissection and subsequent comparative anatomists such as John Hunter allowed a greater understanding of the differences and similarities between species. To help him with research, Hunter kept many different animals in the garden of his house in Earls Court and it was his letter to Edward Jenner on the matter of hedgehogs which has fired the enthusiasm of so many. 2nd August 1775 "I thank you for the experiment on the hedgehog, but why do you ask me a question by the way of solving it? I think your solution is just; but why think? Why not try the experiment? Repeat all the experiments on a hedgehog as soon as you receive this and let me know the result."

Vivisection as we know it today, involving the large scale use of live animals, probably dates from Magendie (1783-1855) whose rather disjointed experiments produced a high degree of antivivisection feeling at the time. He was succeeded by his former assistant, Claude Bernard (1813-1878) whose better organised research laid the foundations of modern physiology. During one of his experiments, a dog escaped with a cannula fixed in its pancreatic duct. It was brought back to Bernard by its irate owner, who turned out to be

a police commissioner. Bernard, who did not know how the dog had been obtained for the laboratory, pacified and made friends with the owner and restored the dog to health and thereafter had relative immunity from antivivisectionist persecution.

In the succeeding century, millions of rats, mice , rabbits, guinea pigs, rhesus monkeys, baboons and chimpanzees have died to improve the lot of mankind. In the last few years, the activity of animal rights groups and a general public desire to lessen the role of animals in research, have led to the Home Office offering up to £100,000 to encourage the reduction, refinement or replacement of the use of living animals for experimental or other scientific purposes. It is to be hoped that such aims will be achieved. Much animal work is still unnecessary and will not benefit the subject of the research nor will it benefit the immediate relatives of the subject.

Some Descriptive Terms in Medicine Derived from Animals.

An article in the British Medical Journal of 1983 (vol. 286 p. 27-30) by E. P. Wright on Zoography, cited 197 examples of medical terms derived from animals. References to horses and riding reflect a greater role in former days. Thus we have cauda equina, talipes equinus, saddle embolism, horseshoe kidney and gallop rhythm. The coracoid process owes its name to a resemblance to a crow's beak and the coccyx to its resemblance to a cuckoo's beak.

Doctors and their Animals.

The horse must have been a frequent companion of the doctor in the past and on many occasions both horse and rider must have wished earnestly for the journey's end.

In the British Medical Journal of 1983 (vol. 287 p. 1985-1987) there is a heartfelt tribute to a Basuto pony by Sam Ramsay Smith, a district medical officer in Lesotho, following a ride at night in a thunderstorm down through the gorge of the Orange River. "I bless and thank the big black horse on whose back I have spent nine hours this day. He never tried to cheat or to frighten me – a stranger and relative novice. When I was startled by the flashes of lightning and the thunder he remained calm and knowing and eventually gave me something of his strength and confidence."

Alexander Wood (1725-1807) a leading Edinburgh surgeon of his day, was often accompanied on his professional rounds by a tame raven and a sheep named Willy, and John Brown (1810-1882) the nineteenth century physician and author was a serious dog lover, always greeting and being greeted by dogs in the street. Once, when driving with his sister, he stopped talking and looked round eagerly. "Is it someone you know?" she asked. "No" he replied, "It's a dog I don't know".

Leeches.

The word leech means both a blood-sucking worm and a physician, and as a transitive verb, to apply leeches to. The tenth century Saxon Leech Book of Bald talks about medical ideas in the broad sense rather than about the use of leeches. The Old English word laece may have originated from two different roots. The medicinal use of leeches is recorded in Egyptian tomb paintings of the 18th dynasty (1567-1308 B.C.) but reached its peak in the 19th century A.D. through the influence of Francois-Joseph-Victor Broussois (1772-1838) when from 10-50 leeches might be applied at one time. By 1833, some 40 million leeches a year were used in France and importation, conservation and care of leeches became increasingly more important. After the death of Broussois, leeching steadily declined, though textbooks written early in this century still make reference to the practice. In

England, the herbalists Potter and Moore were the main importers of leeches from France, but by the 1950s they had passed the business on to a Mr John Lucas. By the 1970s it began to be realized that there was more to leeches than blood-letting and interest in them has increased considerably since then. Mr Lucas was supplying leeches to 17 different University departments when he retired in 1987, transferring his business to a zoologist and ardent leech-lover, Dr. Roy Sawyer of Biopharm UK Swansea.

Leech saliva contains a number of pharmacologically active peptides such as Hirudin, an anti-thrombin, and Hementin, which lyses Fibrinogen and Fibrin. Biopharm supplies leeches all over the world for use in Plastic Surgery, where Hementin induced fibrinolysis maintains distal blood flow following microsurgery to a digit or the ear. Research continues into the potential of leech derived peptides and those from other blood sucking animals such as ticks and vampire bats.

Thus leeches have taken us from the ancient Egyptians, through the recent past and the present to the future. They emphasize our inter-relationships with other animals and their history encourages us to look at our problems by considering previous experience as well as seeking new solutions.

THE ONE HUNDRED AND TWENTY SIXTH ORDINARY MEETING

The One Hundred and Twenty Sixth Ordinary Meeting was held at the Scottish Health Service Centre at the Western General Hospital in Edinburgh on the 25th March 1989 and was attended by 56 members or guests. Mr J. S. G. Blair took the chair in the absence of the President. He introduced the first speaker, Dr. Alastair Masson, who talked on the history of Blood Transfusion in Edinburgh.

BLOOD TRANSFUSION IN EDINBURGH

The history of Blood Transfusion in Edinburgh cannot be told isolated from events elsewhere. The first attempts at blood transfusion were made in the 17th century when animal blood was injected into humans. But the practice of blood transfusion really started in the 1820s when the London obstetrician, James Blundell, stated, as a result of his experiments, that mammalian blood was species specific; as he put it, "the different kinds of blood differ very importantly from each other". It was he who carried out the first transfusions of human blood into human patients, and some of these were successful.

Throughout the rest of the 19th century, sporadic attempts were made to emulate Blundell. Perhaps the biggest series was carried out in Edinburgh between 1885 and 1892 when the surgeon, John Duncan, transfused a number of patients, mainly after amputations. He was the first to use autologous transfusion when he reinfused blood spilled during the operation. He also gave blood to a number of patients with pernicious anaemia, at that time an incurable disease. His work stimulated a remarkable investigation by an Edinburgh physiologist, William Hunter, on 'The Duration of Life of Red Blood Corpuscles'. The preamble to his paper, which was published in 1887, stated: 'The question may be regarded at first sight of comparatively little importance either from a scientific or a clinical point of view'. That is a measure of how far-sighted the work was.

However, the results of transfusion must have been disappointing because they seem to have stopped by the early 90s. Duncan's colleague, Joseph Cotterril, in 1902, said in a lecture, that he mentioned blood transfusion only to condemn it because of the risk of clotting or of air embolism. The problems of blood groups and mismatched transfusion were, of course, not known then.

It was not until 1900 that Landsteiner discovered different blood groups within human blood and described three of them. This important discovery, however, did not bring about an immediate awareness of their significance for transfusion. Ten years were to pass before that happened. Indeed, it was said that blood transfusion in Edinburgh in 1913 was no safer than if Blundell had done it.

A major bar to the exploitation of transfusion was the technical difficulty of the operation. Transfusion itself was often more difficult than the operation for which it was being carried out. Clotting was the main problem. Blundell had recommended connecting a radial artery of the donor to a recipient's vein or the immediate reinjection of blood which had been withdrawn. These methods were still being employed when World War I started though it was then found that lining the walls of a container with wax would delay clotting. With either technique, the donor had to be in close proximity to the recipient. With the fistula technique, their arms had to be in immediate apposition. The answer, of course, was sodium citrate, which was discovered independently by four different people about 1914 or 1915.

The first world war provided an impetus to transfusion but much less than you might imagine. Probably not more than a few hundred wounded men were transfused and that not until 1917 and 1918. Almost all of the pioneer work was done by the Americans and the Canadians.

Meanwhile, in Edinburgh, James Graham, then a young surgeon, became interested in the work being done in America. Between 1913 and 1919, he carried out 46 transfusions on 39 patients. Of the 39, no fewer than 29 were suffering from anaemia or purpura – only 10 from haemorrhage. Even they were suffering from secondary haemorrhage, the result of wounds grossly infected in the battlefields of France. This work formed the basis of his ChM thesis for which he was awarded a Gold Medal.

He described in his thesis some of the early practical problems. For instance, one of his patients was an elderly lady who was transfused in her own home while she was unconscious. She recovered consciousness to find her chauffeur in her bedroom beside her and was highly embarrassed and indignant until she could be persuaded of the reason for his presence.

Who were the donors in these early days? Duncan used young doctors or medical students – "my House Surgeon, Dr. Carmichael" or "Mr Handyman, a healthy and powerful young student". Graham used relatives or, in the case of his wounded soldiers, their fellow soldiers. Clearly, he sometimes had difficulties because in one case: "Since no relative or other likely donor was at hand, it was decided to ask a student to volunteer". However, he was about to sit his finals a couple of days later so it was thought advisable to take only a little. In the end, the patient was given 600 ml blood taken from 'one nurse, two residents, three students and the writer'.

Writing in 1919, Graham made two observations which give a good impression of the significance of blood transfusion at that time. "It was clear", he said, "that the operation of transfusion was sufficiently difficult to make it impracticable as a routine in clinical cases" but he also observed that "there is no doubt that the scope and indications for transfusion are not yet realised" and many died without it being considered. "I am not aware of a single instance in recent years in which transfusion has been employed in Edinburgh in a case of placenta praevia or of postpartum haemorrhage".

The 1920s saw a gradual increase in interest in blood transfusion. In Edinburgh, this was stimulated by James Graham and by David Wilkie and the young Charles Illingworth. Getting donors was, however, a hit-or-a-miss affair. Relatives were not always the right group and students not always available. In 1929, there occurred a significant event when a woman died from bleeding and no suitable donor could be found. Her husband met a friend, a local dentist called Jack Copland and told him the sad story. Copland was shocked and was galvanized into action. He was an Office Bearer in an organization called The Order of Crusaders which he enlisted in a campaign to provide a pool of potential donors.

The event changed Copland's life completely. From that time on, he threw himself into the cause of blood transfusion. His first, and main, objective was to enrol a pool of donors. The Crusaders were too small in numbers to provide enough so he had to advertise more widely. He made himself available to the hospitals and nursing homes so that, if blood were needed, all they had to do was to phone him and he would provide a donor. Providing a donor meant taking him, or her, from the place of work or the home to the hospital and then back again. Each individual donor was for a specific patient. All this cost money so Copland had to use his talents as a fund raiser as well as increasing the donor panel. He had to be available, night and day, 365 days a year, to serve the doctors of Edinburgh. His home, at 22 Gilmore Place, became the hub of the Service. To stimulate interest, he provided a Certificate of Donation and also obtained a report from the hospital on the outcome of each case which he provided for the donor.

With the ready provision of donors, the popularity of blood transfusion took off. In 1931, there were 20 transfusions in the city. In 1932, there were 36, 100 in 1933, 560 in 1937. In all this time, Copland never failed to provide a donor when one was needed, though that often meant he went himself if he had no-one else available. However, the financial pressure caused by ever increasing demand worried the Crusaders and they withdrew their backing in 1936. Copland appealed to the Lord Provost and to the Royal Colleges. A meeting was held in the City Chambers as a result of which the Edinburgh Blood Transfusion Service was created. Copland was made Organiser. He retained responsibility for maintaining the donor panel and raising funds, but the actual provision of transport to and from the hospital was made the responsibility of the hospitals. A paid assistant was appointed to Mr Copland. She was Miss Helen White and her salary was £40 per annum.

1936 also saw the start of the Spanish Civil War which was to change the blood transfusion scene dramatically. In Barcelona and Madrid which were both heavily and repeatedly bombed by Franco's forces, blood banks were set up to provide blood for the victims. Clearly, wartime conditions made it quite impossible to find individual donors for

each patient and the Spanish Republican doctors, in particular, a Dr. Duran Jorda set up blood banks. Storage of blood was known to be possible but had never been used on any scale.

By 1939, the blood banks in Spain had proved their worth and the Lancet and BMJ had carried a number of reports about their value. By then, of course, war in Europe was imminent but, despite this, no provision had been made to create blood banks anywhere in Britain. Indeed, in the whole of the United Kingdom, only two donor panels existed – one in Edinburgh and one in London which had been started in 1922 by a Percy Oliver. It was run under the auspices of the Red Cross, to which Oliver belonged.

In April 1939, Dr. Janet Vaughan of the Hammersmith Hospital called a meeting of the clinical pathologists of the London area and they drew up a plan for creating blood banks for London. They took this to the MRC who were the advisers to the Ministry of Health and only then, by this private initiative, was such a scheme approved. The MRC also obtained money from the Treasury to create four blood banks to supply the London area in the event of war but it was not considered necessary to make any provision for anywhere else in England.

In Scotland, on the other hand, it was the D.H.S. which took the initiative. In February 1939, the Secretary of State for Scotland set up an advisory subcommittee under the chairmanship of Sir John Fraser to look into the existing arrangements for blood transfusion and to determine their adequacy to meet a war emergency. They found, of course, that no donor panel existed outside Edinburgh and no arrangements existed for setting up blood banks. One of the members of the subcommittee was Dr. C. P. Stewart, the University biochemist in Edinburgh. Stewart drew up a detailed memorandum for the creation of blood banks in the major cities of Scotland and got permission to start one in Edinburgh; and Copland, who was also a member of the subcommittee, advised on obtaining donors.

Stewart had the first blood bank in Scotland in operation on the 29th or 30th August 1939. It was situated in his laboratories in Edinburgh Royal Infirmary. It was created by, as Stewart wrote, willing helpers – research workers, students, laboratory assistants, sisters, nurses, who 'with no thought of reward, worked up to 14 or 15 hours a day, seven days a week, for weeks on end'. Donors had to be found within days in numbers previously unimaginable, – 5000 no less, but the major efforts of Copland and Miss White provided them by enlarging the catchment area to include the Lothians and Borders. A new industry had to be created within the Infirmary to manufacture giving equipment, to sterilise it and all the storage apparatus, to identify and issue the bottles, which at first were supplied by the Edinburgh and Dumfriesshire Dairy. Thus, two sites in Edinburgh accommodated the Blood Transfusion Service – Stewart's laboratories in the Infirmary housed all the technical services, while Copland's house in Gilmore Place housed the donor organisation.

It is hard to believe what happened at that time so far as the D.H.S. was concerned. All of this huge effort had cost a lot of money, in advertising for donors and in the purchase of equipment. The D.H.S. had, however, provided none. The Fraser subcommittee had done a magnificent job in setting up voluntary committees to get donors and setting up banks just in time for the outbreak of war. Instead of congratulating them, the DHS noted that

they had, by doing so, exceeded their remit which had been merely to advise the Secretary of State though they grudgingly admitted that 'the Department could not but acquiesce in the urgent need for those measures'. There was silence about paying for them.

In desperation, deputations went from the various Scottish regions to St. Andrew's House and were told to make a national appeal for voluntary funding. The officials who met the deputations, however, recognised but did not publicly admit that "donations will no doubt drop or cease until after the war". On November 14, an internal memo noted that "government subvention will be necessary if blood banks are to continue". Despite this, the briefing memo noted that "AS THE TREASURY HAVE NOT YET BEEN APPROACHED" no definitive statement can be made to the members of the deputations. Their problem was that they wanted to know, before giving any help, just to whom the money would go. They were unwilling to fund a voluntary organisation. They also believed that the blood banks would be temporary and that the need for them would cease with the end of the war.

They twisted and turned trying to find an answer to their problem. They rejected taking over control themselves since they thought that that would lead to a demand for payment from the donors. They tried to get the Red Cross to take over responsibility and were turned down because of the "indefinite extent of the liability". In the end, they decided to form a National Organisation, chaired by Lord Rosebury, and funded only in strict proportion to the amount of funds the local bodies could generate. For every pound raised by voluntary subscription, they would (generously, was the word used by the Secretary of State) contribute a pound. So in February 1940, the S.N.B.T.A. came into being and Copeland was appointed National Organiser.

This was quite different from England, where the M.R.C. had persuaded government to provide money to set up and to run the four London depots. The Treasury noted the difference but, instead of being more generous to the Scottish Service, suggested in the phony war era of December 1939 that London should be cut right down to a skeleton service to be expanded if the need arose. At the time of Dunkirk, their attitude was suddenly changed. Questions were asked in Parliament about the adequacy of arrangements in the rest of England and the Ministry of Health had to admit that the position was untenable. "Nowhere in the provinces can the organisation be considered adequate". They recommended and the Treasury agreed that each region should immediately be fully funded to set up and run a proper blood transfusion service.

Not so in Scotland. The position there remained that it was given only as much money as it could raise by voluntary subscription. The Department of Health now argued with its English counterparts and pointed out the discrepancies. The Treasury, however, continued to be niggardly with money for Scotland and, each year, a battle was waged to try to get the increased funds necessary to allow the Scottish service to survive. A tactic they used every year was to allow the officials a small increase but telling them "If later in the year, you should get into difficulties, we can reconsider the limit but we would prefer that you should say nothing about this at the moment".

There was not even the excuse that war needs affected England much more than Scotland because, apart from the bombing of Clydeside, the Scottish Service provided plasma in considerable quantities, particularly for the Navy. Plasma was, in the early 1940's, becoming very important. Experiments in Cambridge on drying plasma had

proved to be very successful. Dried plasma was very stable and ideally suited for the needs of the Services, especially the Navy. Three drying plants were in operation in England. C. P. Stewart, who had become the most far-sighted and influential member of the important Technical Committee set up by the Scottish B.T. Association, persuaded the D.H.S. to set up a drying plant in Scotland and, because of his influence and enthusiasm, it was set up in Edinburgh. The unit was functioning early in 1943 and it provided much needed plasma for every ship leaving British ports, for the Armies in Europe in 1944 and some was dropped on Warsaw at the time of its agony. Obviously, more donors were needed to provide for this expansion but, as always, they were forthcoming.

The drying plant was sited in a basement in the Royal Infirmary – officially "in underground premises safe from air raid risks", unofficially in a "small unventilated cellar". The refrigerator for the unit was installed at a cost of £530, paid for by a remarkably generous gift of £560 received at that time from the pupils and staff of the Mary Erskine School for Girls, then called Edinburgh Ladies' College. The plant ran on DC current and had a capacity of one hundred bottles dried in a length of steel pipe ("large diameter city water supply pipe") with its internal refrigerated coil operating at what was then the very low temperature of -35C. The refrigerant was methyl chloride which was both toxic and inflammable. The plant ran day and night for years, serviced devotedly by the senior technician, Andrew Crosbie. That unit put Edinburgh in the forefront of blood transfusion technology and was vital for its future.

Blood banks changed the practice of transfusion radically and, long before the end of the war, it was obvious that they had come to stay. Between 1944 and 1948, therefore, there were endless debates with officialdom about the future shape of the Service, much of it quite acrimonious. Blood banks and the national blood transfusion service had been created, government had thought, as a temporary measure to meet a potential wartime need and officials in the D.H.S. had always tried to distance themselves from any financial liability. They resented the Service and twice, in private memos, referred to this "Frankenstein" which they had created.

Still trying to reduce any financial commitment, they, and the Treasury, first suggested that users should have to pay for blood. This idea was reluctantly given up when they realised that they would lose the good-will of the donors, or, as they uncharitably put it, the donors might then ask for payment themselves. Financial pressures were particularly acute after the war. Costs escalated because new full time staff had to be recruited and new accommodation obtained. The D.H.S. huffed and puffed and threatened. They demanded that the Transfusion Service should raise more money while, at the same time, forbade them to hold flag days which were by far their most important source of revenue. They tried to get local authorities, or the hospitals, to take over the Service but, ultimately, the National Health Service Act made the provision of blood the responsibility of the government. In June 1948, the D.H.S. guaranteed 100% of the expenditure the blood transfusion service was unable to meet. For the first time, financial security was attained.

During the war, two major discoveries had been made in America. One was the Rhesus factor and the other was plasma fractionation, the isolation and purification of fragments of the plasma proteins. A plant was created in England at the end of the war to produce plasma fractions. When C. P. Stewart gave up his blood transfusion work, to return to his University duties, he was succeeded by a young ex-serviceman, Dr. Macrae. Macrae produced a memorandum, which acknowledged the influence and backing of Stewart and

suggested that plasma fractionation should also be carried out in Edinburgh. This was agreed and the plant became operational about 1951. By this time, Macrae had died and was in turn succeeded by Robert Cumming, to whom the Service is much indebted. His work and the new unit kept Edinburgh in the forefront of blood transfusion technology. Originally in a new unit in the Royal Infirmary, it is now housed in a separate building in the city and provides many different plasma fractions. From being a small project, tacked on to blood transfusion, the demand for blood products now creates the major drain on the service and also creates the major headaches. If I give one example. It needs 60,000 donations of blood in order to provide enough Factor VIII for the needs of 60 haemophiliacs and, of course, the advent of AIDS has posed new and unexpected problems for some of the unfortunate haemophiliacs and for the Service in the provision of donors and in keeping the supply safe.

I have given a brief outline of the blood transfusion story, but I have said almost nothing about those who have made it all possible, the donors. The vast industry of transfusion is surely unique in being based on the purely voluntary donations of blood by ordinary men and women, donations which must be continued without interruption.

Between 1936 and 1939, demand in Edinburgh rose from 560 to 700 in a year. By 1984, over 80,000 donations of blood were made. With few interruptions, the graph has shown a steady and remorseless rise. It has been dented recently by AIDS but, I am glad to say, it is again recovering thanks to the enormous efforts of those involved in maintaining the supply of donors. The contribution of blood from people in Scotland compares very favourably with that from the other parts of the UK and the contribution of those from Edinburgh and S.E. Scotland exceeds that from the other parts of Scotland. Behind the donors, there is a vast network of voluntary effort coordinated and encouraged by the Edinburgh and South-East Scotland Blood Transfusion Association, chaired for many years past by Professor Girdwood. Its declared object is "to continue the work of the Holyrood Conclave of the Order of Crusaders begun in Edinburgh in 1929 by promoting the interests of the voluntary donors of blood and the voluntary helpers and by encouraging and supporting the B.T.S. in this and other Regions of Scotland".

This is the other side of the coin when one talks about the now world wide reputation of the Edinburgh based Service. It is one of the few which is self sufficient in blood. We have not needed to import blood or blood products from other places and that, in itself, is a considerable achievement.

The Service owes its very existence to C. P. Stewart who projected it to the forefront. When he received the letter from the H.A.S. inviting him to attend Sir John Fraser's committee, Stewart accepted and wrote: 'I have not hitherto paid any special attention to the subject'. He became the leading authority on it. Robert Cumming too oversaw the period of its most rapid development and the introduction of plasma fractionation. To these two is due the credit for the technical advances but it is to the credit of Jack Copland and Helen White that the wherewithal existed to allow that to happen – the creation and maintenance of a donor organisation second to none.

The second paper, given by Dr. Anne Shepherd, was on the life and work of Dr. Elsie Inglis. Dr. Shepherd described first Dr. Inglis' childhood in India and her education in Edinburgh and Glasgow. She then gave a fascinating account of the history of the Scottish

Women's Hospitals during the First World War. Dr. Inglis' part in these brave endeavours was discussed together with those of several other Scottish Medical Women. Dr. Shepherd concluded by describing the ceremony, which she had attended in Yugoslavia in 1985, to re-dedicate a fountain, previously dedicated to Elsie Inglis in 1915.

THE ONE HUNDRED AND TWENTY SEVENTH ORDINARY MEETING

The One Hundred and Twenty Seventh Ordinary Meeting of the Society was held at the Postgraduate Medical Centre, Raigmore Hospital, Inverness on the 27th May 1989. It was attended by 33 members or guests and Dr. Masson took the chair in the absence of the President. The first paper was read by Mr Mervyn Rosenberg on the history of the Lawson Memorial Hospital, Golspie.

THE LAWSON MEMORIAL HOSPITAL

When I was honoured by being invited to give this talk about the Lawson Memorial Hospital, little did I realise that by the time I actually came to speak, almost everything envisaged about the Lawson's creation would have become history. That surgery is soon likely to cease at the Lawson makes this possibly a valedictory address.

The reason that the hospital is sited in Golspie is that the doctor who was its inspiration practised there, although the money came from a benefactor in Brora, some six miles to the north.

The Lawson Memorial Hospital was opened on the 27th July 1900, having been created under a deed of trust set up on May 15th 1899 by Alexander Brown Lawson of Clynelish farm, Brora. It was started during Mr Lawson's lifetime but he died before it opened. Subsequently his sister, Miss C. M. Lawson, opened the Hospital and, over the next few years, supported it generously, both personally and financially. Although she had moved to live in Bournemouth, she visited the hospital for the opening and on many subsequent occasions.

The deed of trust set up by Mr Lawson stipulated that the Hospital was "For that class of people in the County of Sutherland who are not in receipt of Parochial aid but whose circumstances are such that they cannot afford to pay for medical assistance, and who are suffering from accidents or non-infectious forms of disease requiring frequent medical attendance."

At the opening ceremony, Miss Lawson expressed "the hope that its presence might alleviate suffering and make happier the lot of those for whom it was intended." It would be difficult to improve upon those sentiments.

Dr. Michael Simpson, grandson of the first Surgeon and son of the second, kindly allowed me sight of his copy of the Hospital reports for the first ten years and that of 1946. It seemed that it might be interesting to see what has happened in the eighty nine years by

taking the figures for 1906, 1946 and 1986 to try and give three "snapshots" showing what has happened with the passage of time, as well as commenting briefly on the personalities who have visited and used the hospital.

In 1906 the trustees of the Hospital were:
Dr. Sturrock, Broughty Ferry
Alfred N. Macaulay, Golspie.

Today's 'Trustees' are, presumably, the members of the Highland Health Board, who hold it in trust for the people of Sutherland.

The staff of the Hospital in 1906 was the Surgeon, Dr. James Bertie Simpson M.A. M.D. C.M., the Matron, Miss E. Scott, and a Nurse, Miss A. L. Thomson and the Caretaker, James Sutherland. There were presumably some domestic staff but they didn't rate a mention in the records of the time. In 1946 the Surgeon's annual report mentions the Surgeon, Bertie Soutar Simpson F.R.C.S., Matron, Miss Grant, the Caretaker, Wm. Mckenzie, Anaesthetists and Domestic Staffs.

Today the staff consist of the Surgeon, a Senior House Officer (Junior Doctor), Matron (now entitled Nurse Administrator), Miss M. Macrae, dividing her time between the Lawson and the Geriatric Units, 5 Sisters, 6 full time and six part-time Staff Nurses, 2 Enrolled Nurses, 5 Nursing Auxiliaries, 3 secretaries (2 whole-time equivalents), a Receptionist, a Physiotherapist and a Physiotherapy aide. There is a domestic workforce of 10 as well as a handyman and a gardener. Additionally a Higher Clerical Officer helps with administration and the clerical and nursing administration for community services have recently moved in. Anaesthetists come for the weekly list and when sent for.

Even more interesting are the patients treated, over the years. In the opening year a postman was treated for dogbite and in 1904 a housemaid attended with chronic bursitis (housemaid's knee). The occupation of those receiving treatment at the Lawson was in keeping with the group for whom it was built. Common on the roll were 'Tinker's child, Fisherman, Farm servant, Labourer, Crofter and Woodsman'. The majority suffered from infections or injuries. A few had malignancies, ulcers, varicose veins or hernia. Most stayed in hospital for weeks. Treatment was drainage of abscesses, splintage, excision and rest. Today most of the major infections of 1906 would not reach the degree of seriousness they did then. They would be treated with antibiotics at an early stage by the General Practitioners and never reach hospital. Many of the problems with which we deal today were either unknown then or there were no methods of investigating them and no treatment for them.

The figures I give are culled from the hospital reports for the relevant years. With the passage of time we would not now classify in quite the same way. I have kept the contemporary format for each year, both because I find them interesting in the original and so as to show how matters were perceived at the time.

Table 1

1906

IN-PATIENTS:

Cured	76
Relieved	10
Incurable	4
Died	1
Remain *	7
Total	98
(Surgical	63
Medical	35)

* Remain = still in hospital at year's end

Operations 42 – amongst which were:

1 gastrotomy
in this case to remove swallowed false teeth)

1 perforated gastric ulcer

1 acute osteomyelitis of femur

1 acute osteomyelitis of tibia

1 trephining of tibia for chronic abscess

1 excision of veins of leg

7 Tuberculous glands of neck

1 malignant pustule - excision and graft

1 cataract operation (performed by Dr. McLeod of Helmsdale).

There was one post-operative death, a late admission from 80 miles away, of pyaemia from acute bone infection (a boy of 'about' 12, brought in by motor provided by Mr & Mrs Fytche of Shooting Lodge, Kinlochbervie).

1906 was the first year in which the hospital received a patient with a perforated ulcer. Dr. Simpson comments that "There is no doubt that this otherwise hopeless case was saved by the doctor's prompt diagnosis (GP in Lairg) and by the fact that a motor car was available for immediate and comfortable transport."

Throughout that year there were 10 beds. The average occupancy was eight (80%) and the average stay was 31 days (greatest 175 days).

The number of out-Patients treated, including those sent in for X-ray was forty. As twenty were sent in just for X-rays, only 20 patients were seen for out-patients consultation.

X-ray:	In-Patients	41
	Out-Patients	20
	Treated	8
	Total	69

Dr. Simpson commented, "The number of tubercular cases presenting themselves year by year, even in a small local hospital, is lamentable. As a rule these are drawn from the fisher population, but there is no doubt about the widespread nature of the disease among all the people in an otherwise healthy country district." This was in spite of the fact that the Lawson took only cases of 'surgical' TB. Pulmonary tuberculosis sufferers were not admitted. He was not to know that effective treatment of the disease was still nearly half a century ahead.

Ether was used as the anaesthetic in two cases, for the first time. Until then Chloroform or ethyl chloride had been used exclusively.

Also for the first time, Dr. Simpson had medical help. Dr. Hubert Weber came to give anaesthetics and did bacteriological microscopic work.

Mr Littlejohn of Invercharron donated a Zeiss Microscope, allowing "blood examinations, which have proved of much interest and value."

On the occasion of a visit to the Hospital, His Grace the Duke of Portland directed that, at his expense, a patient whose leg had been amputated should be supplied with an artificial leg and that another patient should be provided with false teeth. If they'd had today's artificial limb service, we might still be waiting for the leg!

NOTE: In the first decade of this century the definition of CURED was "Went out of hospital without symptoms". (e.g. Cancer of the breast is "cured" on discharge). This is not comparable with what we would accept now. Today, to be called "cured" a patient would have to survive not less than 10 years from the time of treatment for a cancer or could be included if death is from some other disease unrelated to the cancer originally treated, in less than ten years, but free of the original cancer at the time of death.

It is also notable that, with what we would regard as primitive equipment, X-rays were used for treatment, the machine really being suitable only for diagnosis. This practice, common everywhere at the time, has long been abandoned.

Forty years on Mr James Bertie Simpson had been replaced by his son, Mr Bertie Soutar Simpson F.R.C.S., the first full-time surgeon at the Lawson. He had worked through the Second World War, during which he had treated many hundreds of servicemen, British, British Empire and some European (mainly Norwegian).

The figures in 1946 were:

IN-PATIENTS :			
	Total	496	
	Surgical	456	(including 206 Emergencies)
	Medical	40	
Operations:		377	
Deaths		13	(3 medical: 10 surgical)
OUT-PATIENTS :			
	NEW	790	(including 60 fractures)
	TOTAL	2219	(including 208 Tuberculous)
	OPERATIONS	326	
X-RAY			
	Patients	841	(including 125 Tuberculous)
	X-ray films	1016	

(New X-ray equipment installed September 1946)

A new physiotherapy department was built in 1946, a gift of the Sutherland Red Cross Society.

Mr Simpson also gave a domiciliary consultant surgical service. His work in this regard is summarised below.

Crofter & Cottar Insured patients (including their families) – 130, all seen with their General Practitioners. County Council Health Services patients – 283, all seen together with the Medical Officer of Health/Local Medical Officer. In the report these are further divided into:

Tuberculosis	209
School children	7
Infectious diseases	18
Maternity	25
TOTAL	283

Those classified as Sick poor – 24 patients. In visiting these patients in their homes, Mr Simpson covered 8050 miles in the year.

From these figures it is obvious that in its first forty years the Lawson had changed from a cottage hospital to an institution serving the surgical needs of a considerable part of the county.

During the year a donation of £1000 was received from His Grace the Duke of Sutherland and one of £500 from Mr H. R. Burrows Abbey of Kildonan.

With the increased numbers passing through the Hospital Bertie Simpson had to be less detailed in his direct report to the trustees than was his father but his hospital records were comprehensive and I have been able to cull stories of interest from these.

Admission records for 1946 show that Appendicitis had become a major source of business for the Hospital. In the early years appendicectomy was almost unknown. It was popularised by the king, Edward VII, having the operation. By 1946 it was the commonest major procedure. Mr Simpson also performed many Tonsillectomies. These are no longer done in Golspie and have become much less common everywhere. He still dealt with cases of tuberculosis needing surgery but, by that time, most such cases were admitted to the fever hospital, Cambusavie. The trade of that hospital was later so decreased by antibiotics and BCG injections that it became a Geriatric Hospital. Building of a replacement for Cambusavie Hospital is nearly complete in the grounds of the Lawson. You might be interested that Cambusavie was declared unfit for human inhabitation some forty years ago. It is due to close later this year.

Injuries were still common but now some of them were as a result of motor cycle and car accidents, absent in the early years and, of course, common today. During the war the Lawson treated soldiers of the Canadian, British Honduran , Indian and British regiments.

A convalescent hospital was established at Dunrobin Castle, staffed by the forces, but the Lawson was the main referral centre for the acute surgical problems of the military. At the time, visiting the Highlands was restricted to those who lived there and those necessary for military purposes. A pass was required to go north of Inverness by rail and there was a road block on the A9 at Beauly.

A look at the operating register of the Lawson tells many tales. There is a distinct pattern of injuries to which the different units were prone.

The Hondurans seemed to spend their free time stabbing each other.

The Canadians, here to do the lumberjacking, kept dropping the trees on themselves or axing their legs instead of the wood.

The Indians were the horse and mule pack trainers. Few of them bothered the hospital much, but those who did had usually been trodden on by their quadrupeds.

The British, to no-one's surprise, most commonly attended having shot themselves in the foot.

The second forty years were to bring further change. The next snapshot brings us to 1986. Between 1946 and 1986, after the retirement of Bertie Simpson, there have been three successive Surgeons appointed to the Lawson. Mr Peter Kinnear F.R.C.S. succeeded the Simpsons, pere et fils, and was in turn followed by Mr R. Morton Hitchell F.R.C.S., upon whose retirement I took over.

The Simpson connection with the Lawson as not, however, lost as, even before Bertie's retirement, his son Michael joined the Golspie General Practice and became one of the two anaesthetists to the Hospital (which position he has recently resigned, effective 31st July – in two months time).

Nowadays Cholecystectomy (removal of the Gall Bladder for stones or infection) has become the commonest major operation and the frequency with which we see sports injuries depicts the greater facilities and free time that people now have. The prevalence of road traffic accidents reflects not only the road building programme but the relative affluence which allows so many to own cars.

Today, in addition to surgical cases and recuperative patients from Inverness, we take in patients for terminal care. This latter group accounts for a large percentage of the deaths recorded in the 1986 figures.

1986

IN-PATIENTS

Admissions	588
Day cases	204
TOTAL	792
Operations	693
Deaths	16

OUT-PATIENTS

(New Surgical: 1454)

Total Surgical	2507
Visiting Consultants	3230
ALL OUT-PATIENTS	5737

X-RAYS

Patients	2098
Films	4171
Physio	3852
Average in-patient stay:	5.93 days
Occupancy	64%

Two revolutions have had an impact on the Lawson.

The first of these was the introduction of the National Health Service. Prior to 1948 the Hospital was owned and managed by a board of Trustees. The advent of the NHS changed all that, making the hospital available to the entire population. The range of patients

eligible for treatment at the Lawson became the entire community of the county of Sutherland and anyone who happen to be passing through. For that matter any patient referred by any General Practitioner in the United Kingdom is entitled to treatment in any NHS Hospital and, thus, the Lawson too. The decision of who is to be admitted to the hospital, however, still resides with the Surgeon.

An enlarged Out-patient Department was added and Visiting Consultants, mainly from Inverness but also one from Wick and one from Aberdeen, now come to consult on patients referred from all the General Practitioners of the county.

The second revolution is the technological explosion that has overtaken medicine in the second half of the century. We now have at our command a vast armamentarium of drugs and equipment, none of which had been invented or discovered when the century dawned. The most obvious of these is Penicillin and the vast range of antibiotics which followed it. The other group of drugs that have altered surgery is the Histamine 2 receptor blockers for the treatment of peptic ulcers, which have reduced the number of patients operated on for that group of diseases.

We are able to investigate the inside of the bowel, bladder and bronchi with as much clarity as if they were outside the body, using fibreoptic 'endoscopes'. The inside of the body can be imaged with ultrasound. From 1945 cystoscopies, from 1985 Oesophago-gastro-duodenoscopies and from 1988 ultrasonography have been available at the Lawson.

Having said all that, it is the very nature of advances in anaesthetic techniques and the staffing rigidity of having a National Health Service that has brought about the end of surgery at the Lawson. At the end of the day it is the revolutions which so changed the Lawson over eighty years that have finally wounded her fatally.

Because it is impossible to provide anaesthetic services at the specialised level needed for modern practice in such a small unit, I must report to you that this has indeed been the final History of the Lawson as an in-patient surgical facility.

A final table might set the snapshots in perspective.

LAWSON MEMORIAL HOSPITAL:

1901 – 1910	: 10 YEAR TOTAL	
	In & Out-patients in 10 years :	1,184
1907 – 1946	: 40 YEAR TOTAL	
	In & Out-patients in 40 years :	20,650
1986	: 1 YEAR TOTAL	
	In & Out-patients in 1 year :	12,275
	"Lawson only"* IP & OP in 1 year :	9,045

* By "Lawson only" I mean those dealt with exclusively by myself or the Senior House Officer at the Lawson, excluding patients seen by visiting Consultants.

In 1906 there were no physiotherapy patients. In 1986 there were 3842 attendances to that department alone.

FACTOR of INCREASE IN STAFF WORKLOAD 1906 to 1986

		Multiplied by
FULL TIME MEDICAL STAFF	:	2
NON-MEDICAL STAFF	:	11
NUMBER of IN-PATIENTS	:	11
OPERATIONS PERFORMED	:	16.5
NEW SURGICAL OUT-PATIENTS	:	72

The second paper, by Dr. Chris Robinson, from Fort William, was a fascinating and erudite history of Sibbens in Scotland. This was common in Lochaber in the mid eighteenth century and may have dated back to Cromwell's time. The name Sibbens or Sivens seems to derive from the Gaelic Suibheag or Raspberry, from the appearance of the skin lesions. It was probably a treponemal disease, similar to Yaws and was treated in the same way as Syphilis, with mercurials. Dr. Robinson discussed correspondence, related to Sibbens, which he had found in documents relating to the "forfeited estates", confiscated after the 1745 uprising. The disease died out in the nineteenth century, probably because of an improvement of living conditions among the poor.

These two papers were a pleasure to listen to, both being well researched and well presented. Thanks to the speakers and to the organisers of the meeting, Fiona Watson, Rebecca Higgens, and particularly to Dr. Chris Smith, who amongst other things, had presented an exhibition of old medical electrical equipment, brought the meeting and the 1988-89 session of the Society to a close.

The Scottish Society of the History of Medicine

REPORT OF PROCEEDINGS

SESSION 1989-90

THE FORTY FIRST ANNUAL GENERAL MEETING

The Forty First Annual General Meeting, attended by approximately 60 members, took place in the elegant surroundings of the Postgraduate Medical Centre, Lancaster Crescent, Glasgow, under the chairmanship of Professor David Waddell, on 4th November 1989. The minutes of the 40th Annual General Meeting were read and approved. In the unavoidable absence of the Treasurer, Dr. Eastwood, presentation of the accounts was deferred until the next Ordinary Meeting of the Society. Professor Waddell reported that four grants of £300 each had been made from the Guthrie Trust to support research in the history of medicine. Dr. John Forrester and Dr. Harold Swan of Edinburgh and Dr. Joan McAlpine of Glasgow were elected as council members to replace Professor Duncan, Professor Mason and Miss Watson,who were all thanked for their contributions. The other office bearers, having signified their willingness to remain in office were duly re-elected.

THE ONE HUNDRED AND TWENTY EIGHTH ORDINARY MEETING

The One Hundred and Twenty Eighth Ordinary Meeting of the Society followed the forty First Annual General Meeting and comprised two papers on the broad theme of Culture and Medicine. The first of these was presented by Dr. John Forrester under the intriguing title of Who put the George in George Eliot?

WHO PUT THE GEORGE IN GEORGE ELIOT?

In the novels of George Eliot (1819 – 1880), the Victorian woman novelist, there can be found at intervals passages exhibiting a striking acquaintance with medical science, especially with physiology. For example, in **The Mill on the Floss** (1860) she wrote: "Good society, floated on gossamer wings of light irony, is of very expensive production; requiring nothing less than a wide and arduous national life condensed in unfragrant, deafening factories, cramping itself in mines, sweating at furnaces, grinding, hammering, weaving *under more or less oppression of carbonic acid.*" Again, in **Middlemarch** (1872): "'He has got no good red blood in his body,' said Sir James. 'No. Somebody put a drop under a magnifying glass, and it was all *semi-colons and parentheses*,' said Mrs Cadwallader." Sickle cell anaemia was described for the first time in 1910. (1) And again in the same novel: "The *cubic feet of oxygen swallowed yearly* by a full-grown man – what a shudder they might have created in some Middlemarch circles."

In addition, there are mentions elsewhere in her writings of terms like "occiput" and "coronal surface", even as early as 1858, and remarks about the function of the brain, the spinal cord and the eye. In spite of all this, only one of all her characters is a doctor, and none is a physiologist.

This acquaintance with physiology does not reflect the usual range of knowledge of a Victorian lady novelist; for instance, Mrs Gaskell (1810 – 1865) is extremely fascinated by deathbeds, but no physiology appears, except that she does know that papers are written about it. Similarly, Charlotte Yonge (1832 – 1901) presents doctors in her novels, but no physiology.

The explanation is clearly that the knowledge was transferred to George Eliot from her consort George Henry Lewes (1817 – 1878), who was an extremely versatile and talented writer himself. She lived with him from 1854 until he died. He had already written a Life of Goethe (2) which remained in print until recent years, and a Biographical History of Philosophy (3) which set forth the lives and views of the eminent philosophers from earliest times up to his own. In 1859 he published **Physiology of Common Life**, which was so readable that it scored a lasting success, and for example in its Russian translation kindled the young Pavlov's first interest in physiology; he went on to secure a Nobel Prize in the subject.

In Lewes's Physiology of Common Life can be found the sources of George Eliot's specific references. For example, the passage on oxygen swallowed yearly mentioned already can be traced to this in Physiology of Common Life: "Is it not wonderful to reflect that, in the course of a single year, 100,000 cubic feet of air have been drawn in and expelled, by something like 9,000,000 of separate and complicated actions of breathing, to aerate more than 3500 tons of blood?" These vast values can be converted to the following: 5.4 litres per minute of air inhaled; respiratory rate per 17 minute; heart output 6.8 litres per minute. These, as mean values over the 24 hours or for that matter over a year, are quite credible nowadays.

Similarly, the passage about carbonic acid corresponds to this in **Physiology of Common Life**: "Vitiated air makes the faces pale of those who issue from a crowded church, and gives a languor to those who have sat for some hour in an...ill-ventilated apartment, in which human beings have been exhaling carbonic acid from their lungs."

Lewes maintained a long and serious interest in physiology. He was a founder member of the Physiological Society, and in his memory George Eliot established a Studentship named after him at Cambridge, which has been held by a long sequence of physiologists who subsequently achieved great distinction, such as Sir Charles Sherrington.

We know that George Eliot, whose real name was Marian Evans, chose her pseudonym of George because of George Lewes. She told her husband J. W. Cross so; (4) she married him right at the end of her life. The Eliot part was simply chosen as a "good, mouth-filling, easily pronounced word", she said.

The one doctor in her novels is Lydgate in **Middlemarch.** He is a general practitioner, but he entertained research ambitions. The nature of his research project is outlined only obliquely in the text of the novel:

[chapter 15] "Lydgate ... felt the need for that fundamental knowledge of structure which ... at the beginning of the century had been illuminated by the ... career of Bichat, who died when he was only one-and-thirty ... That great Frenchman first carried out the conception that living bodies ... are not associations of organs which can be understood by studying them first apart, and then as it were federally; but must be regarded as consisting of certain primary webs or tissues, out of which the various organs – brain, heart, lungs and so on – are compacted, as the various accommodations of a house are built up in various proportions of wood, iron, stone, brick, zinc and the rest ... and now at the end of 1829 – there was still scientific work to be done which might have seemed to be a direct sequence of Bichat's. This great seer did not go beyond the consideration of the tissues as ultimate facts in the living organism, marking the limit of anatomical analysis; but it was open to another mind to say, have not these structures some common basis from which they have all started, as your sarsnet, gauze, net, satin and velvet from the raw cocoon. Here would be another light ... showing the very grain of things, and revising all former explanations ...What was the primitive tissue? In that way Lydgate put the question – not quite in the way required by the awaiting answer."

[chapter 27] "That evening ... he looked. to see how a process of maceration was going on ..."

[chapter 36] " ... for the inspection of macerated muscle or of eyes presented in a dish ... and other incidents of scientific enquiry, are observed to be less incompatible with poetic love than a native dulness or a lively addiction to the lowest prose."

[chapter 36] (the Vicar) "wanted to examine under a better microscope than his own ..."

[chap. 45] " ... Dr. Lydgate meant to let the people die in the Hospital ... for the sake of cutting them up without saying by your leave or with your leave ... " ..." I [Lydgate] am more and more convinced that it will be possible to demonstrate the homogeneous origin of all the tissues. Raspail and others are on the same track, and I have been losing time."

[chapter 71]: "And this Dr. Lydgate that's been for cutting up everybody before the breath was well out o' their body – "

Nowadays it is not obvious why there should ever have to be any "primitive tissue" from which the rest develop; all of them develop from a fertilised egg anyway in the case of higher organisms. But this research project was no whimsy of George Eliot's dreamed up over her workbox and its silks; it had itself been thoroughly researched. The research is evident in her notebooks, which survive, and in particular in *Quarry for Middlemarch.* (5)

The novel Middlemarch was written between 1869 and 1872, but it refers to the period 1827 – 1832, and the research in particular to 1829, as the quotation already cited indicates. Raspail (1794 – 1878), the French biologist and subsequently politician and initiator of a comprehensive system of health maintenance based on the use of camphor, (6) wrote a work (7) from which she copied a portion into Quarry. This portion refers to an

experiment of his in which he boiled and treated tissue until only an amorphous insoluble mass remained This he evidently regarded as the essential matter, the basic structure of animal substance: something akin to the "primitive tissue" of *Middlemarch.*

But a more credible "primitive tissue" was areolar connective tissue, first termed a tissue by someone unknown before Haller. Bichat (1771 - 1802), the French surgeon and anatomist, mentioned like Raspail in Middlemarch, developed a list of 21 tissues: (9)

1. Cellular (i.e. areolar connective)
2. Nervous, of animal life
3. Nervous, of organic life
4. Arterial
5. Venous
6. Exhalant vessels
7. Absorbant vessels (i.e.lymphatics)
8. Bone
9. Bone marrow
10. Cartilage
11. Fibrous
12. Fibrocartilage
13. Muscular, of animal life
14. Muscular, of organic life
15. Mucous
16. Serous
17. Synovia
18. Glandular
19. Dermis
20. Epidermis
21. Hair

Bichat's "nervous system of organic life" is approximately to-day's autonomic nervous system, regulating the organic functions recognised by Bichat as absorption, excretion, respiration and the like. "Animal life" comprised voluntary movement and the power of sensation. Thus the muscular system of organic life is smooth muscle. Bichat also listed "exhalant vessels", which he believed were tiny vessels emerging from arteries and opening into tissue spaces, allowing fluid to leave the vascular system which later returned by the absorbant or lymphatic system.

He produced this list without microscopy, because at that time the compound microscope had not reached a satisfactory performance, and microscopists' accounts conflicted with each other. Instead, he used the following techniques to separate one tissue from another: (10)

> Animal experiment, to distinguish what portions of an animal were sensitive
> Applying reagents to organs, such as water (maceration) to soak tissues apart, and letting them decay under observation
> Dissections and autopsies
> Observations on man in health and disease.

Bichat's achievements earned him the title of "great seer" in *Middlemarch* because he was greatly admired later by Auguste Comte (1797 – 1857), the founder of sociology and coiner of that word. Comte elevated Bichat into a sort of saint of his new quasi-religious philosophy of Positivism, and Comte was in turn greatly admired by Lewes, who treated him last in his Biographical History of Philosophy, as philosophy's finest and latest exponent.

George Eliot is rather cryptic about the solution of Lydgate's research project. Lydgate "put the question not quite in the form required by the awaiting answer", she wrote. It was wise not to be too specific in 1870. Connective tissue had been identified as the primitive tissue from which the others developed even by Bichat, (12) though George Eliot did not apparently notice this. But the crucial role of cells rather than of tissues was becoming evident, especially by the time of Virchow. (13) Microscopes had grown enormously

better, and by 1845 Hughes Bennett in Edinburgh was contemptuous of anyone who still indulged in olde-worlde techniques and "boiled, roasted, macerated, putrefied, triturated and otherwise injured the delicate textures." (14) Although even in 1865 there was not general agreement that the tissues of every higher organism contained cells, and cells of critical importance for the development and maintenance of these tissues, the exciting research topic of 1829 had already become bypassed, and interest had permanently moved on to the cells within tissues.

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The second speaker, Mr. Phillip Harris, conducted his audience on an illustrated tour of Rembrandt's art, and its relationship to medicine, placing this in context by reference to works by Vesalius, Gillray, Rowlandson and Goya. In showing a slide of The Anatomy

lesson of Dr. Tulp, the best known of Rembrand's group portraits, the speaker drew attention to the continuing debate on whether the arm being dissected was a left one, as shown, or a right, as sometimes alleged.

The lively discussion which followed both papers and continued over tea was evidence of the interest aroused by the two subjects, which served as a curtain raiser for Glasgow's role as European City of Culture in 1990.

THE ONE HUNDRED AND TWENTY NINTH ORDINARY MEETING

The One Hundred and Twenty Ninth Ordinary Meeting of the Society was held in the Victoria Infirmary, Glasgow, on 24th March 1990. The meeting opened with the presentation of the Treasurer's report. The President thanked Dr. Eastwood and then paid tribute to the work of Dr. Derek Dow, Joint Honorary Secretary for seven years, who was attending his last meeting before moving to New Zealand.

In the Centenary year of the Victoria Infirmary, it was appropriate that the first paper was given by Dr. Stefan Slater, Physician to the Hospital. He talked on Alfred Ernest Maylard, the first surgeon to the Victoria Infirmary.

THE LIFE AND TIMES OF ALFRED ERNEST MAYLARD, FIRST SURGEON TO THE VICTORIA INFIRMARY, GLASGOW

On St. Valentine's Day 1890, the Victoria Infirmary of Glasgow was opened by the Duke of Argyll. Two months earlier, on Christmas Day 1889, the first two visiting physicians and visiting surgeons were appointed. Surprisingly, the adverts had been placed not in the British Medical Journal or Lancet but in the Glasgow Herald and North British Daily Mail. Perhaps there was a desire to limit the field to local candidates. There were indeed only two applicants for the physician posts, both South-side general practitioners, Ebenezer Duncan and Alexander Napier, Duncan the inspiration and driving force behind the founding of the hospital. (1) There were five for the surgical posts, reflecting perhaps the enhanced status of the surgeon in this post-Lister period. Alfred Ernest Maylard, the subject of this account, was appointed and James Dunlop, surgeon at Glasgow Royal Infirmary, was the other nominee. He, however, wished to continue to hold office also at the Royal but could not commit himself to the Board's terms for such a dual appointment. This included attending the Victoria no later than 10.45 a.m. daily. Therefore Robert Parry, a Welshman, was chosen instead. Maylard was to be the senior surgeon and over his 30 years tenure of the post from 1890 to 1920 and then as a governor until 1933 he made an outstanding contribution. He was a man of action, of ideas and of relentless persuasive powers, and proved a "giant" in his clinical field. A prolific author, he holds the record to this day in Glasgow in the number of surgical textbooks he wrote.

Of his early life, frustratingly nothing has yet come to light beyond his date and place of birth – 9 January, 1855 at Northfleet, Kent – and his parents' names and father's occupation: Alfred Martin Maylard, a silk mercer and stockbroker, and his mother, Ellen Maylard, née French. However, while a medical student at Guy's he must have developed

surgical aspirations for in 1879, aged 24, he graduated both M.B. and B.S. At that time the B.S. was a separate bachelor of surgery degree awarded exclusively by the University of London, and sought after by those planning to become surgeons. Indeed, it was regarded by some as superior to the F.R.C.S. Subsequently, partly to equate with the Scottish practice of awarding the double degree of M.B., C.M. – later M.B., Ch.B. - the B.S. was tacked onto the London M.B. and ceased to have special significance. But what made him move to Glasgow? After being a house surgeon at Guy's and then a demonstrator in anatomy he was invited in 1881 to a similar post at the extra-mural Western Medical School in Glasgow, although why and by whom is not clear. In a retrospective review (2) he tells us that there had been no prospect of any surgical vacancy at Guy's for some years but that to practise pure surgery was his ultimate object in life. He had heard that only one man in Glasgow was doing so – presumably Sir William MacEwen – the others being part-time general practitioners. He adds that perhaps an unconscious reason for leaving London was that:

> "... there flowed in my veins the blood of my mother's Scottish ancestors, the realisation of a sort of 'homing' instinct"

The Western Medical School – which had no formal connection to the Western Infirmary – was one of three similar extra-mural establishments in Glasgow, the others being Anderson's College and the Royal Infirmary Medical School (later St. Mungo's College). Founded in 1878 and situated opposite the Kelvin Park gates on the site of the present University Union and above what was then Stenhouse's bookshop, it offered a limited number of undergraduate courses attended mainly by Glasgow University medical students cramming for exams. Its teachers included Thomas Kennedy Dalziel of Dalziel's – alias Crohn's – disease and Robert Parry, Maylard's future hospital colleague.

After two years here, Maylard in 1883 was then appointed extra-dispensary surgeon at the Western Infirmary to Hector Cameron, later Sir Hector and professor of clinical surgery. It was on this lowest rung of the surgical ladder that he began to show his flair for innovation and his uncanny ability to make useful and influential contacts. He became interested in the young science of bacteriology, attending a course run by Robert Koch in Berlin. Then, in association with Joseph Coats, later the first professor of pathology in Glasgow, he set about collecting funds to establish a bacteriology department at the Western, the first of its kind in the West of Scotland. John Chiene, professor of surgery at Edinburgh, and founder of the first teaching bacteriology laboratory in the United Kingdom, helped him to equip it. Matters culminated in 1888 when he was approached by Dr. J. B. Russell, Glasgow's revered medical officer of health, to give what seems to have been the first invited address on bacteriology in the City. His audience was the Glasgow Philosophical Society and his lecture, "A Demonstration on Bacteriology, illustrative of the mode and cultivation of Micro-organisms in air, water, and earth, embracing some of those which give rise to disease", was published in its Transactions. Nearly 50 years later he refers to this, saying: (2)

> "... I almost blush to think of it now, when compared to those advanced and erudite discourses which proceed from the lips of such experts as Professors Robert Muir and Carl Browning, of our own University"

He was also publishing articles on surgery as well as on bacteriology, was abstracting the surgical literature for the Glasgow Medical Journal, and had become secretary of the Glasgow Pathological and Clinical Society. In 1889 he was promoted to dispensary surgeon.

Thus, when he came to apply, aged 34, for the Victoria Infirmary post he offered not just solid surgical experience and academic training but that extra interest in bacteriology of value to surgical practice in those pre-antibiotic days. The interviewing committee must have been impressed. To Maylard it must have been very gratifying to start work as senior surgeon in a completely new hospital, spotlessly clean and with all modern conveniences. For the Victoria had the new electric light. Indeed, every bed had a small movable electric lamp for the purpose of examining patients. It had bells and speaking tubes throughout the hospital and a telephone. And it had a novel system of heating and ventilation – the "Plenum" system – which ensured that: (3)

> "... none of the inmates will ever breathe air which had previously passed through the lung of any of the other occupants"

This also allowed for increasing the frequency of air exchanged when making beds or when the air needed freshening, and it dispensed with central ward fireplaces, a passing lamented by some.

The South-side at last proudly had it own voluntary hospital. It was a remarkable challenge for a young man and it is doubtful whether nowadays we would entrust a totally new service to a fledgling consultant. But Maylard lost no time in putting the Victoria on the surgical map of Glasgow. A mere nine months after the hospital opened he presented to the Glasgow Southern Medical Society – the Society instrumental in founding the hospital – a detailed and very mature resume of work done in that short period. This was published in the *Glasgow Medical Journal* (4) and makes intriguing reading. He gave several remarkable examples of the efficacy of strict antisepsis, using a hot bichloride of mercury solution, 1 in 2,000 dilution, into which septic or potentially septic lesions were immersed for at least an hour if possible. He carried out a bacteriological study of the dirt from beneath nails, proving they must be thoroughly cleaned if wounds involved fingers or toes, something until then apparently given scant attention. He wrote of the pleasure of sometimes being able with conservative surgery to avoid amputation in tuberculous joint disease. "It is nothing to lop off a limb," he said, "but it is something to save it". He described cases of leg ulcers, condemning all the various ineffectual ointments and old wives' cures - including in one fatal case the application of cow dung - and recounted the grafting of one patient's ulcer with the skin of the prepuce from a child he had circumcised earlier in the day.

He dealt with fractures, dislocations, burns, tumours, the lot then of the general surgeon. One case we would surely now leave to our specialist colleagues and which displays Maylard's versatility was a discharging abscess at the back of the neck in a 10-year-old boy. Maylard explored this and found it emanating from infected bone at the base of the skull at the edge of the foramen magnum. He coolly observed that:

> "... the extreme closeness of the caries to the vertebral artery below, to the medulla oblongata on the inner side and in front, and to the occipito-atloid joint externally, rendered it more than likely that one untoward result, at least, might arise if the disease had not been checked".

He included in his report cases that had an unfavourable result so that it "... should not be one-sided", and added:

> "Whatever fears I may have entertained when first accepting the post of surgeon to the Infirmary they have been long banished by the number and interest of the cases admitted"

Finally, he did something rarely, if ever, done today; he acknowledged the help of the young resident doctors and of the nurses, saying of the latter:

> "To the sister of the ward and the nurses under her, belong a share of credit which cannot be over-estimated. The careful preparation of dressings, as also their careful preservation, the proper nursing of patients, and the scrupulous regard for all matters concerning the ward, are factors of such moment, that if not efficiently carried out, a successful result in many a case may be marred, and the surgeon's best endeavours frustrated" .

One case not mentioned in this report but published in the *Lancet* (5) was, according to Maylard, the first appendicectomy performed in Glasgow. He carried this out on 16 April 1890 in a private nursing home and not – disappointingly! – in the Victoria. It is, however, pleasing to record that the diagnosis was made by one of the Victoria's two visiting physicians, Dr. Alexander Napier, the condition being generally poorly recognised at that time. It may be wondered why it took a year before it appeared in the *Lancet*. Maylard was no slouch in anything he did but with this case, as the title of the paper shows, he wished to conduct a one year follow-up; not for him the stampede for priority. In later life he reviewed the statistics of appendicectomies performed at the Victoria; (6) only 11 during its first five years but 726 in the quinquennium 1914-1919, 25 years later. "What suffering," he said, "long periods of illness, and lives had been saved by the performance of this one operation alone is almost beyond calculation".

Before long he became increasingly involved in alimentary disorders and abdominal surgery, a field in which he proved a leader. He is, for example, regarded as having pioneered the transverse abdominal laparotomy incision, the "Maylard incision", (7) finding it healed better than the conventional vertical one. He achieved an international standing from the numerous papers and surgical texts which flowed from his pen; *A treatise on the surgery of the alimentary canal* in 1896, followed by a student's handbook on the subject *"Abdominal pain, its causes and clinical significance* in 1905, a meticulous account which ran to a second edition, of all possible causes, including post-operative pain and abdominal neuroses; *Abdominal tuberculosis* in 1908, a 360 page monograph believed to be the first book written on the subject; and *Practice and problem in abdominal surgery* in 1913, arguably his most outstanding work. All of these can be read with benefit today. His style is engaging, authoritative without being dogmatic, and smacks of the master surgeon. Patients' symptoms and signs don't change and Maylard helped to hone and refine the art of clinical diagnosis and therapeutic judgement.

In his book on abdominal tuberculosis, Maylard cast doubts on the tuberculous origin of some hyperplastic lesions of the ileum. (8) He considered that they may be due to "... a chronic inflammatory type [of process which] may not really be tubercular in character [since] neither 'giant cells' nor caseation may be discoverable". He provides an

illustration of such a lesion which to our naked eye today looks like a Crohn's, although tells us in a footnote that this particular specimen – which came from St. Bartholomew's Hospital, London – did subsequently prove to be tuberculous. Enquiry now of Barts 82 years on, he having given the specimen's museum reference number, confirms that report. Thus, 24 years before Burrill Crohn published his paper on regional ileitis and five years before the Western Infirmary's Thomas Kennedy Dalziel reported *his* cases of "chronic interstitial enteritis", Maylard was in the forefront of new thinking on the subject.

His eminence as a scientific surgeon was recognised by his election to the Fellowship of the Royal Society of Edinburgh. He had already long since become a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. Other honours came his way; Presidency of the Glasgow Southern Medical Society in 1907 and of the Medico-Chirurgical Society of Glasgow in 1913. It was, indeed, thanks to Maylard's persistence and clever tactics that the latter Society won the Royal accolade in 1919 (9). This included – typical of the man – enlisting the support of Andrew Bonar Law, then Conservative MP for Glasgow Central. Aberdeen, the senior Society of the two, as well as Edinburgh Medico-Chirurgical Society and numerous similar English Societies have not been so honoured.

He retired from the Victoria Infirmary in 1920, aged 65, and published that year an unusual little book called *"Memories and musings of a hospital surgeon"* (6). Curiously, it would appear that some printings of this book omit his name and hospital and perhaps these were kept confidential for local sales. In it one gets a glimpse of the man, for otherwise there is very little to be gleaned of his personal life and thoughts. He comes across as authoritative and confident but also conscientious and compassionate. However, the compassion was not exercised unreservedly for he gives vent to one or two fairly trenchant remarks, partly no doubt products of their time. For example, in a chapter on venereal disease, itself unusual in a work aimed at the lay public, he had this to deliver:

> "... the reproductive organs were constructed for the exclusive purpose of perpetuating the race. Are we not, therefore, justified in attributing the terrible scourge of venereal disease to the retributive vengeance of God on those who abuse and misuse those special organs?"

In another chapter entitled "The influence of the mind on the body" he emphasised the importance of patients' trust, saying:

> "There is no need whatever to impart to the patient any of the possible doubts and fears that may cloud our own thoughts as to the prospect of success ... I own to never feeling justified, if I can possibly help it, in enlightening my patient on the gravity of the condition revealed at the operation ... Hitherto he has been probably hopeful and certainly ignorant. Am I to take away those saving attributes of hopefulness and ignorance and so possibly make the rest of his life dejected and miserable?"

Was there an element of aloofness in this? Possibly, but his motive was sincere. Today, under the increasing threat of litigation and pressure to tell all, the sensible balance between unnecessarily worrying patients with information out of all proportion to any

risk, yet ensuring their reasonably informed consent and understanding, is in jeopardy. It is a fascinating book, full of commentary, and he is bang up-to-date in the final chapter on the future of hospitals, viz:

> "... modern hospitals are straining their resources to the point of breaking ... 'Waiting Lists' amount to hundreds ... great pressure of 'urgents' frequently involves the dismissal of others before a complete certainty of cure has been reached ... managers are at their wits' end to know how to carry on and meet the requirements ... principally the acquisition of money, and more bed accommodation"!

When he retired in 1920 he was made the Royal Faculty of Physicians and Surgeons of Glasgow's representative on the Victoria's Board of Governors. He was no sleeping member, for it was during this period that, thanks largely to his advocacy and drive, the Auxiliary Hospital at Philipshill was built in 1929, and the Victoria's Paying Patients' Wing, an innovation for Scotland, opened in 1931 (1). The old campaigner had bombarded his fellow Board members with suggestions and information, had, as usual, canvassed support, and never deviated from the twin convictions that underlay these developments. Firstly, that an auxiliary convalescent-type hospital in the country would aid recovery and assist throughput in the overstretched Victoria. Secondly, that all patients were entitled to up-to-date facilities and not just the "sick poor" who used the voluntary hospitals. because a kind of reverse privilege was beginning to prevail, in that private nursing homes were falling behind in their facilities and paying patients were becoming disadvantaged. A paying patients' wing attached to a voluntary hospital would also be an important source of income for the hospital. Indeed, for some 50 years the Victoria's private annexe certainly fulfilled a useful role, albeit latterly with progressively fewer beds as it made way for other hospital developments. Stripped of any political ideologies it could perhaps have continued to do so. In fact, the facility was inaugurated by William Adamson, Secretary of State for Scotland in Ramsay MacDonald's Labour administration!

Maylard's technique of applying relentless pressure to secure any scheme dear to his heart, quick to spot a tactical advantage and often enlisting in his cause people of influence and standing, was regrettably unsuccessful in one venture in which he became deeply involved. This was the preservation of the Lister Ward at the Royal Infirmary, an illustration also of Maylard's breadth of activity. It is an interesting story in itself with a shabby ending to the eternal disgrace of the Royal's Board of Management of the day. After the ward was finally demolished in 1924, Maylard, who had been a previous member of that Board, was the inspiration and organising force behind – and co-author of – *Lister and the Lister Ward,* published on the centenary of Lister's birth in 1927. The appendix lists the enormous support from home and abroad for the preservation of the ward, including from such distinguished surgeons as Moynihan, Keen and the Mayo brothers.

Did Maylard have time for any hobbies? Before he retired it seems he may have actively pursued just one – mountaineering. It is difficult to imagine him ever pursuing anything inactively! He was, indeed, one of the three founders of the Scottish Mountaineering Club in 1889, the others being William Naismith and Gilbert Thomson. Moreover, while it was Naismith who first suggested a "Scottish Alpine Club" in a letter to the *Glasgow Herald,* (11) Maylard was once again the driving force taking the idea forward, enlisting this time

the influential figure of George Gilbert Ramsay, professor of humanity at Glasgow and a keen alpine mountaineer. It was also Maylard who proposed the name "Scottish Mountaineering Club" (12) in preference to "Alpine", and was the Club's first secretary for seven years and its president from 1899 to 1902. In a review of the history of the club he said: (13)

> "In October 1881 I came to Glasgow ... I hadn't a friend in the city ... I frequently spent my free days, which were usually Saturdays, in tramps about the surrounding country ... in winter I never met a soul; so I suggested to my newly made acquaintances that the citizens of Glasgow knew little of the beauties of the country around them in winter [but this was] a too hasty judgement".

Maylard himself must have been a very capable mountaineer as evidenced by his membership of the distinguished Alpine Club, open only to climbers of proven accomplishments. He did the first successful climb in ice to be recorded in the *Scottish Mountaineering Club Journal* (14) of a particularly tricky ascent of the upper couloir of Stob Ghabhar, the Peak of Goats, near Bridge of Orchy. Another insight into his ability is contained in this abstract from his obituary in the Club's Journal which describes a winter climb with him on the Cobbler: (15)

> "I well remember how considerate and helpful he was to me ...
> We traversed the ridge, beginning with the South Peak,
> Naismith leading, Thomson next on the rope, then myself,
> with Maylard as sheet anchor at the rear. Coming off 'Jean'
> the conditions were difficult with much ice and loose snow.
> I shall never forget how Maylard shepherded me down those icy
> rocks, telling me what to do and generally instructing me in
> the way that I should go".

He certainly cuts a very imposing and powerful figure in photographs held by the Club.

Maylard, as one would expect of the man, not only contributed frequently to the *Scottish Mountaineering Club Journal* but cleverly raised funds so that the Club could produce a series of well illustrated guide books. It was also thanks to him that the Charles Inglis Clark Memorial Hut on Ben Nevis was erected. (13) He became a vice-president of the Royal Scottish Geographical Society. In Scottish mountaineering folklore there is even this little verse about him: (16)

> "Said Maylard to Solly one day in Glen Brittle,
> All serious climbing, I vote, is a bore;
> Just for once, I Dubh Beag you'll agree to do little,
> And, as less we can't do, let's go straight to Dubh Mor.
>
> So now when they seek but a day's relaxation,
> With no thought in the world but of viewing the views,
> And regarding the mountains in mute adoration,
> They call it not 'climbing', but 'doing the Dubhs'"

In 1924, four years after he retired, Maylard and his wife moved to Peebles. There, indefatigably in 1935 at the age of 80, he wrote *Walks in and around Peebles,* John Buchan, Lord Tweedsmuir, providing a foreword. In chapter 1, "A plea for

pedestrianism", he decries the reckless motorist driving the pedestrian off the roads. (17) Yet, in a second and third edition of this little book – enlarged to include surrounding boroughs – realistic as ever he bows to the inevitable and includes a chapter on motor routes. A few practical hints on walking are given, for example:

> "Always reserve your strength ... Reserve your breath
> for the requirements of your legs, and don't waste
> it on the over-exercise of your tongue. Occasionally
> walk backwards in ascending, which will bring into
> action other muscles, and afford rest to those that
> may ache ... Eat little and drink less while on your tramp".

He lived high up above the River Tweed in "Kingsmuir", now a hotel, and was greatly respected in the town where he also formed the Peebleshire Art Club at which he exhibited wood carvings. (18) In 1938 his wife died, one year short of their golden anniversary. Maylard, in a rare comment on his family life, had written that one reason he had not returned to England on retiral was that : (2)

> "... I was under the attractive and retaining influence of a
> good, and thorough-bred Scot's [*sic*] woman, and, a Glaswegian
> into the bargain both by birth and parental connections".

She had been Miss Jane Reddie, the grandchild on her father's side of James Reddie the first town clerk of Glasgow, and on her mother's side was a grandniece of John Burns FRS, the first professor of surgery at Glasgow University. In her memory, Maylard presented a carillon of 13 bells to the town which hang to this day in the Old Parish Church steeple, the largest weighing over 30cwts. (19) There is no trace of their having had any children but his sister-in-law, Charlotte, seems to have lived with them for many years.

In the last few years of his life he became very deaf. A Scottish Mountaineering Club friend wrote: (15)

> "... he lived in a silent world ... Speech was almost impossible,
> and we could only sit and smile at each other; so different
> from the early days".

He died, aged 92, on 27 June 1947 and lies buried at Peebles. His gravestone rests against the retaining wall in the north east corner of the field. "Men of his type and nature" said the *Peeblesshire News*, (18) "are seldom met with in the course of a lifetime". His obituary in the *Glasgow Medical Journal* contains this marvellous professional tribute:

> "... Undoubtedly, there are a large number of surgeons in all
> parts of the world today who owe their positions to the training,
> encouragement and inspiration which they received while acting as
> his house surgeons, assistants, or post-graduate students. In the
> training of the young surgeon he had few equals and no superiors
> ... He was in his element affording opportunities to his juniors
> to acquire the surgical art under his direct supervision, and only
> when he was thoroughly satisfied, and firmly convinced that they
> were safe, capable operators, were they allowed to undertake any
> operation entirely on their own responsibility. He was never
> tired of giving them advice, of revising their papers and

giving constructive criticism of any article or piece of work submitted to him. As a chief, he was exacting, but ever courteous and kindly. Ward visits were 'occasions', but they always resulted in a kindly word for every patient, and encouragement to those who were down-hearted. The visit terminated with everyone in a satisfied, contented and happy frame of mind. In the theatre he was courteous but exacting, never flurried, and extremely resourceful. As an operator his dexterity was remarkable. It might be said that he was difficult to know. He had no time for triflers, but once his friendship was gained, it was retained and was friendship in the true sense of the word ...".

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Dr. Slater's paper was followed by one by Dr. Ronald Douglas on the history of his Southside General Practice, entitled "The House and Lineage of David".

THE HOUSE AND LINEAGE OF DAVID

Thank you for inviting me to speak to you this afternoon. I am no historian and feel somewhat daunted at the prospect before me! My interest in medical history arose out of my need to prepare a Presidential Address for the Glasgow Southern Medical Society four years ago, and I hit upon the history of our own Practice which has close links with the Society, and through it with the Victoria Infirmary.

I was, in fact, only the second son of a President to occupy that office, the only previous pair also having been among my predecessors in our practice Drs. David and Andrew Tindal.

When I began to think further of this connection, I realised that the history of our own Practice was closely bound up with the Society, as was I the fifth President from our Practice in a line extending back to Dr. David Tindal who was President in 1857, only thirteen years after the foundation of the Society. I thought, therefore, it might be interesting to trace the development of family doctoring in the city through each of the periods represented by these former Presidents.

The story of our practice, however, really begins in 1786, more than two hundred years ago with the birth of our founder, Walter Buchanan, the son of Walter and Margaret Buchanan of Mosshead in the parish of New Kilpatrick, recorded on the Baptismal Register of the parish on 4th June 1786. His signature appears on the earliest page of the roll of licentiates of the Faculty of Physicians which has survived, dated 5th June 1815.

A licence cost fifteen guineas for country members, who apparently were only allowed to practise outside of Glasgow, but a later minute of the Faculty, dated 3rd May 1819 shows that he was on that date granted a Town Diploma "having paid the additional fine".

The name "Buchanan, surgeon" first appears in the Post Office Directory of Glasgow of 1818 at 158 Main Street, Gorbals, and we can trace a continuous succession in the practice from then to the present day.

I wonder what it was like to practise in the Gorbals in those far-off days? This was, after all, just after the Battle of Waterloo in 1815. A leper hospital, St. Ninian's, existed in or adjoining the village. Leprosy was prevalent throughout Europe from the tenth to the sixteenth centuries. (1) St. Ninian's Hospital was situated a few yards east of the south end of the bridge at Bridgegate Street, between Main Street and Crown Street. It was built in 1350 by Lady Campbell of Lochow on her lands of St. Ninian's Croft. In 1648, this land was bought by the Town Council, Trades House and Hutcheson's Hospital. These in turn feued their ground in 1790 and laid out Eglinton Street and Bridge Street – to the west was Tradeston and to the east was Hutchesontown. (2)

New streets and squares for middle class residence were laid out in the Laurieston estate with fashionable names such as Carlton Place, Cavendish Street and Marlborough Street. Unfortunately the unplanned sprawl of industry and the unchecked rise of population overwhelmed this district and Laurieston became the core of the Gorbals slums early in the nineteenth century. The fantastic growth in population – from 40,000 inhabitants in 1780 to no less than 200,000 in 1830 – finally put paid to the reputation of Glasgow as a beautiful city described by Daniel Defoe in 1727. Glasgow had swollen from fifth largest town in Scotland to third city of the United Kingdom.

Dr. Derek Dow has kindly let me have a slide of a most interesting poster dating from the cholera epidemic of 1832, from which it is apparent that my predecessor was involved in the list of medical practitioners affording "instant and efficient gratuitous treatment to poor persons who may be seized with the disease." It may be of interest in passing to point out two other names on the list – Dr. James Stewart and Dr. John Leech, the original President and Secretary of the Southern Medical Society.

Other evidence of the type of practice is difficult to obtain except indirectly. In those days, smallpox was one of the most deadly scourges. In 1787, deaths within the city boundary were 1,759 or 1 in 28 of the population, of which 383, or nearly a quarter, were from smallpox alone, 90% of the victims being under 5 years of age. In 1801, the value of vaccination was established in spite of great opposition, and the Faculty undertook to vaccinate all-comers gratuitously. In the years to 1818, over 21,000 children were vaccinated. It was said that in those days of great poverty and large families, smallpox was 'the poor man's best friend' as it carried off the surplus children. By 1819, the percentage of deaths due to smallpox had fallen to less than two, but the decline of smallpox meant that children survived only to succumb a few years later from other diseases. Measles, for example, accounted for 1% of deaths in Glasgow between 1783 and 1788 and for over 10% between 1807 and 1812. Diphtheria was a terrible killer of children, tuberculosis was common. In 1821, half the population still died under the age of ten.

Typhus and other diseases associated with urban filth increased through the 1820's and 1830's. Alcoholism was rife and a Royal Commission in 1838 was told that "there are 10,000 men in Glasgow who get drunk on Saturday night, who were drunk all Sunday, and are in the state of intoxication or half-intoxication all Monday and go to work on Tuesday."

Gorbals parochial register lists the causes of death, and around this period were many children stillborn, or infants "found dead", or "found in the river" – the counterpart perhaps of some of our abortion statistics of today! Other causes of death included "decline," "child in womb," "paralysis," "wound in head," "dropsy," "apoplexy," and "debility," to name but a few. I doubt if they would be accepted by the Registrar – General today!

Walter Buchanan was not a founder member of the Southern Medical Society, but in 1850 was "proposed as an honorary member on account of the deservedly high reputation in which Dr. Buchanan has always been held by his professional brethren on the south side of the river." This is his only appearance in the Society's Minutes, and somewhat surprisingly no mention is made of his death at Millport, perhaps while on holiday, on 15th August 1852, only two years later. The cause of death at the age of 66 is recorded as "disease of the heart" and he is buried in lair 440 in Gorbals Cemetery, now part of the Southern Necropolis. Despite several visits to the site and searches by the cemetery staff, I have been unable to identify the grave. It seems he was unmarried, and died intestate, but after a visit to the Scottish Record Office in Edinburgh, I located an inventory of his estate, in which he left heritable property amounting to £2,585, a considerable sum at that time. Amongst various debts were sums of money lent by the deceased to "David Tindal, surgeon in Gorbals of Glasgow, assistant to the deceased," and this established the first link in the chain of our practice history.

Dr. David Tindal Sr.

We come now to the first Tindal, previously mentioned. Indeed until my researches led me back to Walter Buchanan, I had always understood that he was the founder of our practice. (Hence the title "House and Lineage of David"!)

David Tindal was born in 1815 at Newcastle, the son of a baker of the same name, latterly in Lanark, whose grave is also in the Southern Necropolis. David appears in William Mackenzie's register of students attending his lectures on the eye – the same William Mackenzie who founded the Glasgow Eye Infirmary, and became a Licentiate of the Faculty of Physicians and Surgeons of Glasgow in 1838, joining Walter Buchanan as his assistant until Buchanan's death in 1852. Perhaps an "assistantship with view" lasting 14 years was excessive even then!

Apprenticeship was still the norm in the first half of the nineteenth century. Sir James Paget paid 100 guineas when bonded to his practitioner. Yet a "Lancet" review of 1823 brought the criticism that "a master has no inducement to correct any wrong view which a youth might have taken of the profession, nor to examine into his attainment, but has a direct interest in taking him merely for the money." Some would sneer that this is the present state of Vocational Training for General Practice today!

In the Post Office Directory for 1839, Walter Buchanan and David Tindal are listed together at 88 Main Street, Gorbals, with the house at 94, and the first census of 1841 lists them as living at that address with two resident female servants, Mary Dewar aged 30, and Mary McColl, aged 15. Their neighbours included a blacksmith, baker's apprentice, brassfounder, tobacco spinner, weavers and a hairdresser.

By 1846 they had moved to 57 South Portland Street but still consulted at 94 Main Street, and by 1849 the surgery had moved to 4 Eglinton Street. When Walter Buchanan died in 1852, it seems David carried on the practice in Eglinton Street, but on his marriage to Jane Love, the daughter of a bonnet laird in Burnside, they set up home at 4 South Apsley Place, where the first of their seven children, David Jr., was born in 1854 – of whom more later.

The 1840's was a difficult decade for the working people of Glasgow. The potato crop failures of 1846 and 1847 brought thousands of desperate immigrants from Ireland to Glasgow, and their plight was worsened by the cholera outbreaks in the city in 1848 and 1849. In spite of the difficulties, however, the 1840's were also a period of expansion in Glasgow. In 1843, the Glasgow Herald commented on the many new buildings erected in the city since 1840 – three railway stations, the Merchants House, the City Hall, twelve churches, the St. Rollox Chemical Works. Railway mania reached its peak in 1846-7. Labour was cheap, and the Disruption in the Church in 1843 led to the intensive building programme of churches and schools pursued by the new Free Church.

The Southern Medical Society was also formed in this period in 1844 as is well known, and David Tindal duly joined the Society in 1850 as number 22 on the Roll, and later that year was appointed Seal-Keeper.

David Tindal was elected President at the 12th annual meeting on 3rd December 1857. Subsequent Minutes are sometimes very brief, but included discussion over the need for the profession to be paid for the granting of certificates in the case of death.

With the spread of the population southwards at this time, the practice moved also. A branch surgery was opened in 1862 at 243 Eglinton Street and soon afterwards the Tindal family moved to 24 Abbotsford Place which had been designed as a "street of elegance and distinction." The advent of the railways changed all that!

The census of 1871 lists David Tindal, his wife, six children and two domestic servants living in a house having six "rooms with one or more windows." Neighbours in Abbotsford Place at number 28 were a seaman, grain merchant, wine merchant, joiner and brushmaker, while on the other side at number 22 lived a master printer, a commission agent, a Brazil merchant and a retired calenderer. It would seem that he really lived among his patients and not at some distance in the affluent suburbs!

David Tindal Sr. died at 24 Abbotsford Place on 31st. July 1876, leaving an estate of £2,209. 6s. 9d. and is buried in Gorbals Churchyard.

Dr. David Tindal Jr.

David Tindal Jr. was born in 1854, the eldest of the seven children of David and Jane Love Tindal. He graduated M.B. from Glasgow in 1877, subsequent to his father's death, but seems to have directly succeeded him in the practice at 243 Eglinton Street.

He joined the Southern Medical Society in the same year, 1877, when the President was Ebenezer Duncan. Many of you will know he was largely instrumental in the foundation of the Victoria Infirmary, and his bust is in the entrance of the hospital to this day. He lived at Queen's Park House, and was later to become the father-in-law of David's younger brother, Andrew, of whom more anon.

In 1882, the Practice moved further south to 369 Eglinton Street in "Greek" Thomson's Queen's Park Terrace built in 1860. This was in the shop premises, from which the move upstairs to 365 was made in 1900, and the vacated shop was taken over by James Grant, chemist. I still have an elderly patient who can recall being sent round from Mackinlay Street by her mother at the age of 9 to consult with Dr. David in the back shop premises pre-1900! A year after this move in 1883, David Tindal was elected Secretary of the Southern Medical Society, and later that year graduated M. D. at Glasgow University with a thesis in three volumes entitled "Observations on the treatment of some forms of venereal disease." I was fortunate to be able to read this in the University Library.

In 1884, David was elected a Fellow of the Faculty of Physicians and Surgeons of Glasgow, and in the same year he married Jenny Roxburgh. They lived much of their early married life at 28 Queen Square. In 1896, they moved to Burnside. The minutes record that during his Vice-Presidency in 1895, he proposed that "duly qualified women practitioners be eligible for membership," but later withdrew the motion before it was put to the members!

He retired in 1938 at the age of 84 to Crieff, where he died in 1949 at the age of 95! He had four children, the eldest, David, being killed on the Somme, and the youngest, John, surviving as a patient of mine until his death in 1970.

Andrew Stewart Tindal was the youngest son of the elder David Tindal, and he joined his brother David in the practice in 1892, the year he graduated M. D. from Glasgow University with a surprisingly short essay of around 30 pages only on "The treatment of insomnia in fevers." Some of the drugs used include opium alkaloids, syrup of codeine, paraldehyde, chloral, bromide of potassium, and hyoscine, and may strike a chord of memory with some of my audience as they do with me! He was also admitted to the Fellowship of the Faculty of Physicians and Surgeons in 1905.

Andrew first lived at 38 Queen Square and then, on his marriage to Elizabeth Duncan, moved in 1904 to "The Raploch" 56 Newlands Road. As already mentioned, Elizabeth was the daughter of Dr. Ebenezer Duncan, who first expressed the need for a new hospital to serve the South Side of the city, leading to the opening of the Victoria Infirmary on 14th February 1890. It is therefore perhaps appropriate that his son-in-law in turn was for twenty years a manager of the Victoria Infirmary, and for a time was Chairman of the Medical Committee.

They had two children, Isabel and John, both of whom survive and have helped me with memories. Isabel recalls her father serving as an RAMC officer during the First War, and meeting the trains of wounded soldiers arriving at Central Station. The present Southern General Hospital was then the Merryflats Poor's House, and it was at once commandeered and turned into a war hospital. It was there that Andrew looked after a couple of wards as well as continuing to run his practice, and look after the patients of those doctors who were away at the war.

The development of the South Side of the city around the turn of the century was quite remarkable. There was a general move to the suburbs illustrated by an increase in the population of West Pollokshields of 58% between 1891 and 1898 (3,538 to 5,620) and likewise of 45% in Langside and Mount Florida (9,141 to 13,317). The Cathcart Circle Railway Line opened over a hundred years ago in 1886 to meet this development. The main consulting room of the practice moved upstairs to 365 Eglinton Street in 1900, where a succession of resident housekeepers presided until the 1950s.

Maternity work obviously formed a large part of the Practice at that time. Indeed the Tindals had as a partner in the twenties, Dr. Adam Barr, whose house at 40 Mansionhouse Road later became Bon Secours Nursing Home, and who left the practice to become Professor of Midwifery at Anderson College of Medicine in 1929.

Between 1800 and 1930 (when sulphonamides led to a sudden fall in deaths from puerperal sepsis) there was remarkably little change in maternal mortality which was 46/1000 in 1856/60, 1896/1900 and again in 1934. Blame was first directed at "ignorant and untrained midwives" leading to the Midwives Act of 1902 in England and the Scottish Act in 1915, and then from general practitioners back a stage further to the teaching hospitals and the examiners. Obstetrics was, and some would say still is, the "poor relation." Factors such as crude anaesthetics, no blood transfusion or antibiotics, high incidence of toxaemia and the poor standard of health of the working classes, all contributed their share of blame. Nevertheless, when people over 55 today were born of a working-class background, the risk to their mothers was to all intents and purposes the same as it was at the time of the Battle of Waterloo – the time of the foundation of this practice.

I have already referred to Dr. Adam Barr, who left the practice to become Professor of Midwifery at Anderson College in 1929. The vacancy was filled by my late father, Dr. Carfrae Douglas, who had joined the Society in 1927, two years after graduation from Glasgow University, while working as a resident medical officer at Falkirk. He, too, became a Fellow of the Royal Faculty of Physicians and Surgeons in 1931, and built up an expanding practice both from the rooms in Eglinton Street, and from his home at 24 Newlands Road, where he set up home in 1934 on marriage to my mother Mollie Challoner.

His close connection with the Southern Medical Society was marked by his election as President in 1946. My father always staunchly maintained that the existence of the Society was the main reason for the excellent relations which have always existed in this part of the city between the hospital consultants and family doctors – a relationship by no means common in other parts of our city. I rejoice that this tradition is maintained, and pay tribute to the genuine warmth of welcome I have always received from consultants and all grades of medical and nursing staff when I visit my patients in the wards of the Victoria Infirmary. I would urge my younger practitioner colleagues to make time for this custom which is appreciated not least by those most important people, our patients.

Perhaps, after all, patients and their doctors do not change so much, and we can go two years better than Johnnie Walker, and say "born 1818 and still going strong!"

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THE ONE HUNDRED AND THIRTIETH ORDINARY MEETING

The One Hundred and Thirtieth Ordinary Meeting of the Society took place in St. Andrews on 26 May 1990. It was held in the University's David Russell Hall and, in the absence of the President, was chaired by Mr John Blair. 78 members or their guests were present. The afternoon began with a description of the visit, by the British Society for the History of Medicine, to Leningrad and Moscow. Professor Ronald Girdwood, one of several Scottish members in the party, gave an entertaining account of the week long tour, illustrating his talk with his photographs and with slides from Dr. Mark Fraser. His talk was entitled

NINE DAYS IN RUSSIA

On March 3rd, 1990, twenty three of us including Dr. John Guy as leader and Julia South as interpreter, set off for Leningrad; most of us were paying a first visit to Russia. The arrangements at Heathrow were somewhat chaotic but at Leningrad there were few formalities and we sped off to the Moscow Hotel there, arriving in time for dinner at the side of a stage where a variety performance was taking place. The following morning, as on most days, we learned that the arrangements had been altered and that our first excursion was to be to Petrodvorets, the summer palace of Peter the Great, the construction of which began in 1714. The Nazis had done all they could to raze Leningrad to the ground and we saw photographs of the enormous scale of the destruction of this building which has been lovingly recreated as a major showpiece. Fortunately the collection of 368 portraits and other paintings had been saved from the destructive efforts of the invaders. In the afternoon we saw something of the city from a bus; it must be said that much of Leningrad and Moscow consists of dreary blocks of flats but when one learns of the extensive destruction that occurred in the Second World War and the consequent need for massive rebuilding this is not surprising. The Kirov ballet was performing elsewhere and we were taken instead to a circus performance, splendid for those who like such things.

On the following day, a snowy Monday, we visited the Winter Palace and Hermitage. The latter consists of three interconnected buildings beside the Palace and it is one of the finest museums in the world. The collection was begun in 1764 in the reign of the Empress Catherine II and now consists of some 15,000 paintings, over half a million sketches and drawings, 12,000 sculptures, vast numbers of archeological finds and over a million coins and medals. During the second World War it was evacuated to the Urals. Regrettably the time available to us to enjoy the exhibits was but two hours and we saw only a few of the masterpieces.

In the afternoon we were taken to the Museum of Military Medicine and the Military Medical Academy where the friendly Major-General Vladimir Samoylov showed us the exhibits and gave an account of the history of the Academy which, unlike the one we subsequently visited in Moscow, takes recruits at the undergraduate stage. The important contribution of Sir James Wylie was stressed but we were told that it was incorrect to describe him as the founder of the Academy since a College had existed in the time of Peter the Great. Nevertheless the Medico-Chirurgical Academy as it was then named was under the direction of Wylie from 1800 and for about 30 years thereafter. Coming from

Kincardine-on-Forth and given a medical degree by Aberdeen University in 1794 he was one of the great figures in Russian medical history. He was in charge of the Russian Army surgeons in the war with Napoleon in 1812 when three quarters of Moscow was burned down and in the Battle of Leipzig in 1813. As physician to the Czar Alexander I he travelled widely and accompanied him to England but died in Russia in 1854; we were shown the statue to his memory in the grounds of the Academy. No mention was made of Mounsey, Rogerson or other Scottish doctors who attended the Russian Czars or Empresses. The other doctor who had been particularly notable in the St. Petersburg Academy which we were visiting was Nicholai Piragov (1810-1881) who had been head of the Department of Surgery from 1841-1856. He was the first in Russia to use chloroform and at the siege of Sevastopol introduced the mass use of anaesthetics in surgical operations at the fighting front. All the information was given through interpreters and they did a magnificent job considering that they had no medical knowledge. Many inpatients and outpatients are dealt with at the Military Academy but our visit was related to military history, not modern medicine.

Further sightseeing was to the cruiser *Aurora* which is anchored in the river Niva opposite the Winter Palace at which it fired blank shots in the revolution of October, 1917 when the Soviets overthrew the government which had taken office in the earlier revolution of February when Czar Nicholas II was overthrown. By modern standards both were relatively bloodless revolutions. The dates are confusing as the Russians were using a different calendar from the rest of Europe at that time.

In the fading evening light we visited the Piskarevskoye Memorial Cemetery where lie buried in mass graves about 470,000 of those who died in Lenigrad during the 900 days when Hitler was attempting to eliminate the city and its people, many of whom died of malnutrition. It has been claimed that the true total was about a million from the city, equalling the combined losses of the United Kingdom and the United States. We returned to the hotel to prepare for the night journey to Moscow, there being four of us in each sleeping compartment. The tap water in Leningrad had been like diluted oxtail soup because of efforts to build a dam to prevent flooding of the city, but this had led to the creation of a giant cesspool, and so we bought bottled water for the journey and even in Moscow did not use unboiled tap water; most of us carried electric water heaters.

Disembarking in Moscow in the snow we were informed that our hotel was an hour from the city centre by bus and that many changes had been made in our programme. After breakfast we were taken to see a privately owned irido-diagnosis centre, then, after lunch, conveyed to the Department of the History of Medicine and Health Care of the Semashko All Union Scientific Research Institute where there began at 2.30 p.m. a Soviet-British Symposium which lasted five hours. The joint chairmen were Dr. M. Mirky, Chairman of the Moscow Scientific Society for the History of Medicine and Mr. John Kirkup, President of the British Society. There were four Russian and four British speakers, one of the latter being Mr. John Blair from Perth. After he had made it abundantly clear that Wylie was Scottish, I noticed that the translators, where appropriate, changed "English" to "British"! Subjects dealt with included new information about Dr. Mark Ridley who was medical adviser to Czar Fedor I, observations on gunshot wounds in the Crimean war, the preparation of penicillin in Russia at about same time as Florey was doing his work in England, the problems of cholera in the past and epidemics in Russia in the 1920s. After this, having rebelled at the idea of going to another circus, we returned to our hotel; we

discovered that there was a practical difficulty in that the hotel shops which had not opened when we left each morning were closed when we returned in the late evening. Our programme did not give time for shopping and the bus had to take us to a central *Intourist* bureau to change money but we were advised to change very little as there was nothing to buy. The tourist rate had changed six months earlier from one rouble to the £ to 10 roubles to the £. Scottish notes were not accepted. My own problem was that I could not maintain a detailed record of events as I was unable to buy a notebook or obtain sheets of paper. The people of Leningrad and Moscow were queuing for bare essentials such as bread or soap and were most critical of their local politicians; there was no feeling of repression and the people were most friendly to us wherever we went. Our bedrooms and the restaurants were overheated and despite the lack of supplies we were usually provided with too much to eat and this made us feel guilty.

On the following morning we were taken to the Sechenov 1st Medical Institute and were greeted by Prof. Andrew Stochik; we heard about the teaching of medical history to students in Russia and surprise was expressed at the fact that we do not have Professors of Medical History in Britain. In Moscow there is available a postgraduate diploma in medical history. In 1765 a Faculty of Medicine was created at Moscow University with a unique medical curriculum for the time but in fact it appeared to be similar to the early 18th century Edinburgh one, something that was news to our Russians hosts. Since the 1917 revolution the Russian medical students have trained in Institutes and do not receive University degrees but Prof. Stochik hoped they might again become a Faculty of Moscow University. The 1st Medical Institute is on the *Field of Virgins* and there are 9000 students and 2000 hospital beds. In Moscow there are five medical institutes while in the USSR there are 87 medical schools in all.

After lunch we visited the Chekov museum, a house in which he lived with his family and carried on his medical practice at a time when he was in declining health with the pulmonary tuberculosis which led to his death in 1904 at the age of 44. Two hours after lunch it was time for dinner as we next had to rush to enjoy a performance by the Pyatnitsky Russian Folk Choir.

The following day, March 8th, was Women's Day, a serious problem since it was virtually a total holiday, some shops and institutions being closed for two days. Indeed we had been warned that it would not be possible to supply us with breakfast or dinner but we had managed to persuade the restaurant in which we ate on the previous evening to sell us unopened bottles of wine and, having successfully obtained breakfast from a reluctant hotel staff, kept half of it for the evening. It was snowing as we went around Moscow by bus, first seeing the administrative block of the University which has 32,000 students from 150 countries; it overlooks the Moscow River and the Olympic stadium and at our bus stop was the Holy Trinity Church, now functioning for worship; one of our guides had recently been baptised. We went on to Red Square where there were long queues waiting to enter Lenin's tomb but we came in from the St. Basil's Cathedral end and were permitted to enter the latter without queuing. This is the Cathedral with the onion domes which is shown in all pictures of Moscow; it was built between 1555 and 1561 and the exterior is more striking than the interior. Red Square is a pedestrianised precinct with the Kremlin on one side and the GUM department store on the other, the latter being closed because of the holiday.

After lunch we were taken to the Novodevichy Convent which had been founded in the 16th century and is situated centrally in a loop of the river; it was to there that Peter the Great banished his half sister, Sophia, in 1689 when her plot to have him assassinated failed.

Strong military support for Peter had been provided at the time by a Scotsman, Major-General Patrick Gordon. Then came a stroll down Arbat Street where artists have managed to establish a free enterprise zone and here some of us bought pictures. We were supposed to have gone to the Bolshoi Ballet but they were not performing and only a few of the party accepted the offer of a visit to a "pop" concert. Instead we returned to our hotel by means of the splendid and inexpensive metro system, followed by a short bus journey through the snow. This gave us a good idea of how the Muscovites travelled since cars were few.

On the following morning we were to have gone to a Cardiology clinic, our only planned contact with modern non-military Soviet medicine, but it was not functioning because of the holiday so we went on directly to the Burdenko Military Clinical Hospital, the main one of the Soviet Union. We were met by the most efficient and affable Major-General Nikolai Krulov who handed out a sheet of information about the hospital in Russian and English. At the detailed briefing session he stressed that it was the earliest State medical institution in Russia, the original wooden building having been constructed in 1707. Russian medical education commenced there, the first hospital director being the Dutch doctor Nicholas Bidlow who was a graduate of Leiden University. It is now a busy hospital which deals with the investigation and treatment of Service personnel and their families, complex problem cases being accepted from many other Service hospitals elsewhere in the Soviet Union. It is a research centre and a postgraduate training school for Service doctors. There are 1450 beds and about 80,000 outpatients each year while on the staff there are 236 military and 105 civilian doctors. It had to be evacuated when Napoleon occupied Moscow and again when Hitler attempted to take the capital. We were invited to see any part of the hospital we desired, an invitation which few hospital administrators anywhere would risk giving to visitors, and first saw a small ward with female patients and then the surgical intensive care area, an operating theatre and finally the dialysis unit. All that we saw looked both pleasant and modern.

On our way to the restaurant for lunch we passed Pushkin Square and witnessed the astonishing queues winding four abreast around its periphery; this, we were told, was the line up for McDonald's hamburgers, a Canadian introduction to free enterprise for the hungry people of Moscow.

The Moscow Kremlin is a large citadel with walls that were built three years after Columbus sailed to America and it was the next venue in our busy schedule. When Napoleon retreated from Moscow the 10,000 wooden buildings which formed most of the city were destroyed by fire but the sturdier Kremlin structures survived. Once we had entered through the Borovitskaya Gate we could see the various buildings gleaming in the sunshine, the most impressive being the brightly gilded domes of the cathedrals, now being used as museums. Like so much of the architecture they are in a splendid state of preservation but time did not permit us to enter any building. We passed by the Great Kremlin Palace, the venue for official government receptions, and saw the tall structure known as Ivan the Great's belfry which was used in warfare to give a twenty mile field of vision but we were particularly impressed by the buildings around Cathedral Square. There was the Cathedral of the Annunciation where the Czars were christened and wedded, the Cathedral of the Archangel Michael built in the early 16th century and used as their burial place, and the 15th century five domed Cathedral of the Assumption where they were crowned. More functional at present are the Presidium of the Supreme Soviets and the modern (but fortunately largely underground) Palace of Congresses. We were

whisked away to have a meal and then to a pianoforte recital. By this time it was 10 p.m. and we were driven back to Red Square to admire the precision with which the guard on Lenin's tomb was changed.

The next day was wet and windy and we were first taken to an open air market in a birch wood on the outskirts of the city. This has become another area where artists sold their works, the prices being most reasonable at the tourist's rate of exchange and since we were leaving early the next morning this was an opportunity to dispose of our remaining roubles. After lunch there was a visit to the Central Museum of the USSR Academy of Medical Sciences. This had been a hospital started by the Countess Sheremeteva in 1810 for women pilgrims and when she died in childbirth in 1812 her husband continued to fund it: we were told that Napoleon, having found that French women were being treated, gave instructions that it was not to be destroyed. An international meeting on the history of medicine was to be held in the following week but we had to decline the invitation to attend. We were taken to and shown in detail an exhibition devoted to the career of S. P. Botkin (1832-1889), a leading clinician in St. Petersburg, but the exhibition area was overheated and we were all wilting. We recovered in time to attend the farewell dinner at a restaurant with a large dance floor, but we were given a private (and grossly overheated) private room. The toasts were numerous but eventually we returned to our hotel and most of us had completed packing by 2 a.m. which was fortunate as the suitcases were collected from our rooms at 6.15 a.m. and, somewhat dazed, we set off for the airport where all went smoothly.

In both Lenigrad and Moscow we were made most welcome by everybody whom we met, whether by arrangement or by chance contact at a performance. We were in the USSR at a time when the shops could hardly provide even bare essentials for the citizens, a military revolt inspired by hardliners had just been averted according to reports in the *Times* which we read on our return, and numerous States of the Union were demanding independence. Indeed Lithuania did so two days after we left Moscow. Despite the bread queues we saw no evidence of malnutrition and the military hospitals did not appear to be expecting any crisis. My impression was that the citizens whom we met would be content for their country to be integrated with the West but they had no experience of democracy and did not know how to handle the situation now that they had it. The economy was in ruins and it was difficult to see how any action, no matter how well intentioned, could speedily put matters right.

Professor Girdwood's talk was followed by an illustrated talk by Professor K. G. Lowe, on Royal Physicians in Scotland, of which the following is an abstract.

ROYAL PHYSICIANS IN SCOTLAND

I chose this subject because I had just recently read the late George Whitfield's Harveian Oration delivered in the Royal College of Physicians in London in 1986 in which he gave an account of Royal Physicians in the English Court (1). Of the 93 Presidents of that College 34, including the first President Thomas Linacre, had held a Royal Appointment. Whitfield made especial mention of Thomas Linacre, John Cairns, William Harvey and Sir Hans Sloane and then devoted the rest of his oration to the trials

and triumphs of Sir James Clark, a Scot from Banff, the first of Queen Victoria's three personal physicians. The last of these three was also a Scot, Sir James Reid, from Aberdeenshire.

Of course the Union of the Crowns in 1603 had made it possible, though at first it was not easy because of prejudice, for Scots to be appointed to the English Royal Household and the first of these was David Beaton whom James VI had taken south with him in his court. Beaton was a grandson of the notorious Cardinal Beaton of St. Andrews and his mistress Marion Ogilvie. He had studied medicine in Padua. In London he anglicised his name to Bedwin, flourished, and, in due course, became Physician to James VI and I and later Charles I. When he accompanied Charles in the great procession north for the coronation in Edinburgh in 1633 he had as his junior partner the great William Harvey (2).

So much for Physicians in the English Court. What do we know of Physicians in the Scottish Court and, in particular, those associated with this ancient town of St. Andrews and its hinterland? There is little accurate information about Royal Physicians before the time of James IV with the possible exception of William Schevez, Archbishop of St. Andrews and Physician to King James III. A member of a prominent St. Andrews family he graduated M.A. there in 1456 and then went to Louvain to study medicine and astrology. Returning home he was appointed Master of the Hospice Maison Dieu in Brechin where he attracted the notice of the scholarly King. In 1471 he was appointed Court Physician and, enjoying the close confidence of the King, was appointed Archbishop eight years later. He fell out of favour after the King was murdered at the battle of Sauchieburn but later carried out diplomatic missions on behalf of James IV. In Rome he was made Primate of Scotland on a par with the Archbishop of Canterbury. He was buried with great honour before the high altar in his cathedral. A remnant of the chapel of Maison Dieu has survived and can be seen a short distance from Brechin Cathedral. Also we know the likeness of the Archbishop from a rare and fine 15th century medal which is in the Royal Museum of Scotland in Edinburgh. According to Comrie he was a physician of some integrity and ability (3). Less favourable accounts of him are given in George Buchanan's "History of Scotland" and Nigel Tranter's novel "Chain of Destiny" though Colonel George Cowan (himself a St. Andrew's graduate) has written to redress the balance in his favour (4).

The Scottish Records Office has an accurate record of Scottish Royal Appointments only for the period of 1568 to 1853 and this has been published by G. N. Clark (5). Prior to this period some mention of court physicians is made in Exchequer Rolls and other sources (5). In the 16th century the term "Mediciner" was used rather than Physician and in the 17th century there was a Principal Physician and a number of Ordinary Physicians but later only one of the latter, sometimes called the Second Physician. The practice of making appointments by commission under the privy seal lapsed after 1847. Information regarding appointments after that date could no doubt be obtained from the Lord Chamberlain's office.

Clark lists 15 Principal or First Physicians and 28 Ordinary Physicians. Of these 43 Royal Physicians, nine were Presidents of the Royal College of Physicians of Edinburgh (Table I).

The founder of the College, Sir Robert Sibbald, was schooled in nearby Cupar. "I began to learn the Latine at Couper Fyffe under Mr Patrick Anderson, schoolmaster, the year (16)50" he tells us in his autobiography. (6) He spent most of his boyhood in Dundee

which was then a rich city and supported the royal cause. It was the last city in Britain to undergo seige and General Monk's troops committed such slaughter and destruction that it took two centuries to recover. The Sibbald family lost all their property, his father was injured and young Robert fled on foot to Cupar. He gives a vivid account of how he and his little sister escaped injury during the seige. When his sister Geals ventured into an exposed area Robert ran to rescue her from the enemy's fire. "I ran after her to bring her back, and they fyred at us in the returning; the ball missed us, and battered upon the street. I took it up and brought it with me". In later life Sibbald took great pride in his Royal Appointments. "I was made Physician ordinary to King Charles the Second the thretty of September 1682 as the patent sheweth". And again, "There was ane pension of one hundred pounds sterling for being Physician to King James the Seventh, the 12th of December, 1685 years as appeareth by the patent". "I got only ane year's payment" he adds rather plaintively.

The prominent Dundee family of Wedderburn produced several doctors. Sir James Wedderburn (1599-1679) graduated M.A. in St. Andrews in 1618 and held the Chair of Philosophy from 1620 to 1630 before entering the medical profession. He was Physician to King Charles I from 1646 and received a pension of £2000 Scots in 1647. He practiced for some time along with a cousin in Moravia and also spent some time with Prince Charles in Holland. His Royal Appointment was renewed in 1661 after the Restoration. Sir John remained a bachelor, left a great fortune and bequeathed an extensive and valuable library to St. Leonard's College in this University.

There was a Dundee branch of the old distinguished family of Kinloch that had its roots in Fife. A James Kinloch was the Town Treasurer in 1515. His grandson David graduated M.A. in St. Andrews in 1576 and M.D. on the continent, probably in Paris. He achieved distinction on the continent and attended the French Royal Family. In 1597 he was appointed Physician to King James VI on whose behalf he carried out diplomatic missions, one of them in Madrid possibly to seek the hand of the Infanta for the young Prince Charles. He fell foul of the Inquisition there and was imprisoned for six years, his life being spared when he cured the Grand Inquisitor of a "strange fever". The story handed down in the family over the next three centuries was that when Kinloch heard of the illness he tied a message to the tail of a black cat with which he shared his rations. It reached the right quarters and after the successful treatment he was released and returned to practice in Dundee. His chief claim to fame lies in his latin verse in which he gave the first account of obstetric practice in the country. "De Hominis Procreatione" was published in Paris in 1596 and dedicated to his fellow poet King James VI. It is printed in "Delitiae Poetarum Scotorum" published in Amsterdam in 1639 and readily available in Scottish libraries. (7) It presents a very sensible and practical account of pregnancy and its complications.

Kinloch lived in Fish Street notorious as the site of a cholera outbreak in 1849. (That street no longer exists but nearby is Couttie's Wynd, one of the few remaining features of medieval Dundee). He retired to lands which he bought in the vale of Strathmore. When they were created by a charter of 1616 as the Barony of Kinloch he assumed the title of Kinloch of that Ilk. When he died in the following year he was buried with great ceremony in Dundee's medieval cemetery, the Howff, and his grave with much of its latin inscription can be seen at the present day.

Coming to modern times, Sir Ian Hill was the last Professor of Medicine in St. Andrews before it split in two with the creation of the University of Dundee in 1966. Sir Ian became President of the Royal College of Physicians of Edinburgh and was appointed Physician to the Queen in Scotland. The only two portraits that hang in the library of Ninewells Hospital in Dundee are those of Dr. David Kinloch and Sir Ian Hill. They face each other and it is interesting to compare and contrast the very varied lives, separated by three centuries, of these two physicians who held such high offices.

Acknowledgments

I am grateful to Mrs Joan Auld, Archivist, University of Dundee, and Dr. D. Emslie-Smith for help in preparation of this talk.

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TABLE I

Presidents of the Royal College of Physicians of Edinburgh who held Royal Appointments during the period 1568-1853

	Date of Royal Appointment
Thomas Burnet	30.5.1672
Archibald Stevenson	24.9.1675
Sir Robert Sibbald	30.9.1682
Alexander Dundas	31.3.1719
Robert Whyte	13.4.1766
William Cullen	18.3.1773
Joseph Black	8.3.1790
James Gregory	18.12.1799
Andrew Duncan	10.4.1821

These two papers aroused much interest and led to a lively question period. Following this, members adjourned for further discussion over a lavish tea, bringing to an end the proceedings of the Society for the period 1989-1990.

The Scottish Society of the History of Medicine

CONSTITUTION.

1. The Society shall be called "THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE," and shall consist of those who desire to promote the study of the History of Medicine.

2. A General Meeting of Members shall be held once a year to receive a report and to elect Office-Bearers.

3. The management of the affairs of the Society shall be vested in the Office-Bearers, who shall include a President, one or more Vice-Presidents, a Secretary, a Treasurer, and not more than ten other Members to form a Council. The Council shall have power to co-opt other Members who, in their opinion, are fitted to render special service to the Society.

4. All Office-Bearers shall be elected annually. The President shall not hold office for more than three successive years, but shall be eligible to serve again after one year. Not more than eight Members of Council, or two-thirds of the total number, shall be eligible for immediate re-election.

5. The Annual Subscription shall be fixed from time to time by the Council and reported to members of the Society.

6. The Secretary shall keep brief Minutes of the proceedings, shall prepare Agenda, and shall conduct the correspondence of the Society.

7. Meetings shall be held at least twice yearly, and the place of meeting shall be in any of the four University centres, or elsewhere, as the Council may decide.

8. This Constitution may be amended at any General Meeting of the Society on twenty-one-days' notice of the proposed amendment being given by the Secretary, such amendment to be included in the Agenda circulated for the Meeting.

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