in the embarrassing situation of having little or no catgut industry. Some far-sighted Edinburgh surgeons, realizing the problems, requested a local pharmacist, George Merson to undertake the commercial manufacture of this material. This he did in an old manse at St. John's Hill in the Pleasance, Edinburgh, and by the end of the war the business was well under way. About this time Merson began to sell eyeless needled sutures where one strand of suture material is attached into the butt of the needle. These patented products were called 'Mersutures' and greatly reduced the tissue damage caused by pulling through a double strand of material. Of the many technical advances in suture manufacture little more need be said other than to mention the introduction of sterilization by irradiation in 1960 using a Cobalt 60 isotope. This allowed sutures to be sealed in their final package and then sterilized, thereby eliminating the dangers and difficulties of aseptic transfers. This revolutionary development was a breakthrough which brought in its wake many improvements in packaging.

G. F. Merson had by this time become Ethicon Ltd. and although the development of these businesses is a fascinating story, it was felt that the early history of suture was of more general interest. Finally, a brief description of Ethicon today. The suture industry is, it is suggested, much bigger than many imagine. In Edinburgh alone we employ over a thousand people, use the intestines of 26,000 sheep per day and manufacture enough suture and ligature material in a year to stretch three-quarters of the way round the Equator. These materials comprise catgut which accounts for nearly half of all sutures and ligatures, the remainder being mainly non-absorbables such as silk, linen, steel wire and synthetics such as polyester, nylon and the newly developed polypropylene. Several years ago a reconstituted absorbable collagen suture was introduced and last year a suture company marketed the first absorbable synthetic. These new synthetics, absorbable and non-absorbable, are obviously the forerunners of new generations of sutures which, with other means of coating tissue such as physiological glue, indicate an exciting prospect for this unusual industry whose history has been touched on in this paper. Guy de Chauliac, writing in 1350, said, 'We are children sitting on the neck of a giant—we can see all he sees and something more besides.'

THE SIXTY-NINTH ORDINARY MEETING

This meeting was held in the Maurice Bloch Lecture Theatre of the Royal College of Physicians and Surgeons of Glasgow, on 25 February 1972. A paper, illustrated with slides, was given by Sir Charles Illingworth, entitled:

SOME OLD BOOKS AND ANCIENT COINS FROM THE HUNTER COLLECTION

As is well known, William Hunter, who died nearly 200 years ago, bequeathed his great collection to the University of Glasgow. In his will he enumerated the items thus: 'My books, printed and manuscript, prints and books of prints, engraved

copper plates, drawings, pictures, medals and coins, anatomical preparations, fossils, ores, shells, corals, birds, insects, preserved animals, dried plants, curiosities from the south seas, and the chased silver cup presented by my students.'

First, a few words about the last item. William Hunter was a great teacher. His enthusiasm for teaching is well depicted in the painting by Zoffany which shows him giving a lecture on surface anatomy to members of the Royal Academy, among whom their President, Sir Joshua Reynolds, can be identified by his long ear-trumpet. The silver cup, which is on view in the Hunterian Museum, was presented by his class of students headed by John Morgan, who subsequently was one of the founders of the first medical school in America, at Philadelphia. The circumstances were as follows. Hunter had lectured for two hours daily, and four hours on Saturdays. As his practice as physician and obstetrician to the court and nobility increased, he announced that he would have to give up teaching. His students pleaded with him to continue and he responded to their plea, in fact, continuing to teach until within a few days of his death. The cup was an acknowledgement of the students' gratitude.

Hunter began to collect books early in life and eventually amassed one of the most valuable libraries in the world. That was a time when there was a buyer's market for books. Prices had slumped during the previous thirty years and valuable incunabula could be bought for a few pounds. We know that Hunter spent £500 at one sale, and this may give an idea of the value of his whole collection. Its present-day value is beyond computation.

It will be remembered that the art of printing was introduced by Gutenberg in Mainz in 1455. At first Gutenberg laboured in secret to develop his new invention, for by printing a hundred books could be produced for the price of one, and if put on the market as manuscripts they would reap a vast reward. So the first printed books were made to resemble manuscript as closely as possible.

A page from one such printed book was shown. It was in French, entitled *L'Estrif de Fortune et Vertu,* a moral and religious disquisition on Virtue and Fortune, written by Martin le Franc who was secretary to Pope Nicholas between 1447 and 1455. Foulis had purchased it in the belief that it was a manuscript but upon nearer examination he believed that it had been printed. Its characters were strong and black, the initials painted, and some of the letters joined in one piece as though written with a pen, but the margins were more even and regular than any manuscript and the upstrokes not so slender or delicate as those which a pen makes. He sent it to Hunter for his opinion. Hunter wrote as follows: 'I was of the same opinion as Mr. Foulis that the book was printed. He told me in his letter that Mr. Benjamin Franklin, who was visiting Glasgow before returning to Philadelphia, was of the belief that it had been printed with one wood block but whether that or separate type I could not determine. The printer had used the improved ink, which did not sink in, and thence upon both sides of the sheet, which was thick and coarse; and not with gum but with oil, because rubbing it with water did not dissolve the ink. It seemed to me to be probable that it was one of the first improved essays in the art of printing while that art was yet secret, before it was divulged through the quarrel and lawsuit between Fust and Gutenberg in 1455, and that the copies were intended to be passed upon the world as manuscript. That was my belief when I first examined it, but since that time

I have thought that it might be printed later.' Hunter's final comment expresses the view to which modern authorities adhere.

Printing was brought to London out of the Low Countries by William Caxton, who set up his printing press in the Abbey of St. Peter at Westminster in 1471. Of the twelve Caxtons in the Hunter Collection the one regarded now as the most valuable is the Golden Legends of de Voragine, which Hunter bought for just over twelve pounds. It is an English translation of the 1476 Latin edition and was printed by Caxton in 1483. At the end there is the signature, 'By me William Caxton' repeated twelve times, each in a different form and in a different spelling. This recalls the fact that at that time the English language was in a plastic form. Caxton himself relates the story of a London merchant who could not make himself understood by the farmer's wife in Kent until instead of eggs he asked for 'eier'; and the spelling was even more variable. Caxton's press was indeed the most potent instrument for unifying our language.

Of the hundreds of manuscript books in the Library, all dating from the fifteenth century or earlier, two are of especial interest.

The *De Consolatione* by Boethius was written about A.D. 500. It gives an interpretation of Christianity in the light of the philosophy of the pagan writers, such as Plato, Cicero, Aristotle. It was translated into French and German, English and Anglo-Saxon, and was a best-seller for over a thousand years. The Hunter Library contains four manuscript copies as well as seven early printed books. The copy illustrated was written by Frater Amadeus, probably in Genoa in 1385. The illumination is by an artist of the school of Giotto. The Anglo-Saxon translation was made by King Alfred of Wessex, who though reportedly an indifferent cook, was a man of serious purpose and a scholar. His translation, which gives the philosophy a more Christian slant, was made in order to bring the teaching of Boethius within reach of his subjects. It survives in two principal manuscripts, a tenth-century document in the British Museum and a twelfth-century one in the Bodleian Library. Geoffrey Chaucer made a translation about 1380, being led to the task by the philosophical problems which emerged from his writing of the play *Troilus and Creseyde*.

But the most remarkable of the translations was that of Queen Elizabeth I, who undertook the task in person and conducted it with a vigour and dispatch entirely in keeping with her reputation. It is said that she undertook the translation on the spur of the moment, to assuage her grief on hearing that Henry of Navarre had embraced the Catholic Church. She translated it direct from Latin to English metric verse, writing much of it herself and dictating the remainder to her secretary, Thomas Windebank. She worked at the rate of one page every half hour and completed the task in twenty-seven hours. What a woman!

Of all the manuscript books in the Library the most famous is the Book of Psalms known as the *York Psalter*. From the script and the style of illumination it is clearly a product of the latter part of the twelfth century. Mention of saints' names such as St. John of Beverly identifies its origin as within the See of York. The fact that St. Thomas à Becket receives no mention places it before A.D. 1173, the year in which he was canonized. The York Psalter is one of the most valuable books in the world. It was certainly the greatest bargain of all time, for Hunter is believed to have picked

it up at a sale in Paris in 1769 for 50 French livres, a couple of pounds or so. It is now insured for £100,000, but its true value is beyond estimation.

The book begins with the Calendar of the Months, a page for each month giving Saints' Days and other notable events. Each page is decorated with the illuminated initial H for 'Habet dies' and shows the occupation of the month on gold ground with a very beautiful pattern, while below on the right, in balancing design within a gilt roundel is the appropriate sign of the Zodiac.

Let us examine in greater magnification one of these pages. Here is the month of January, showing the Feast of Stephen. A man in a green mantle, with wide turned-up cuffs, is seated at the banquet table. In his left hand he holds a golden goblet, while his right hand indicates the conical gold cover. In the background a castle with turrets, vanes and pennons. When we remember that this picture measures 2½ inches in height, about twice the size of a postage stamp, we marvel at the perfection of detail. Next comes February, with a man bearing faggots crouching before a blazing fire; March, digging at the root of a tree, using an iron-tipped wooden spade; August, reaping the corn harvest; November, gathering nuts to feed the hogs; and finally December when the hogs are slaughtered for winter feeding. Retracing our steps to September, we see illustrated a surprising labour for North England, the harvesting of grapes; and October, the wine press. But that was the century when Erik the Red and his Vikings found cattle grazing and crops being gathered in Greenland, a time of hot summers and mild winters.

Turning next to the text of the Psalms, 200 pages, almost every one with illuminated initials or marginal decorations. Some describe incidents in the Bible story such as the anointing and coronation of David; some depict pagan myths like the warrior being transfixed by the centaur; some show odd conceits or frightful monsters like the capital Q from the head of Psalm 52 where a monster with an elaborately knotted tail forms the tail of the letter, and the capital D with its intricate floral design with man and saint, dragon and heraldic animals. But the main glory of the York Psalter lies in the thirteen full-page illuminations depicting the whole Bible story from the Creation to Pentecost and Christ in Glory. (A series of slides were shown to demonstrate some of these scenes.)

Hunter's Library contains material for many lectures and his Coin Collection is equally fascinating. The Collection contains over 30,000 pieces, mainly from Greece and Rome and their provinces and dependencies in Persia, Syria, Arabia, Africa, but includes also a valuable collection of Anglo-Saxon coins and a small number from more modern times.

William Hunter has left it on record that he began collecting coins for pleasure but he soon became interested in them not only for their value and rarity but for the light they could throw on ancient history. This letter to Mrs. Swinton shows his integrity in business dealings: 'Let Mrs. Swinton send the coins up, sealed, to any friend in London. They shall be examined by Mr. Combe before Mr. Duane or Mr. Cratchred or any or as many of her friends as she think proper (yourself when you come to Town) and carefully sealed up again in their presence. I will then give her what she asks or more provided Mr. Combe says they are worth the money, or I will refer the price to two men of known character, one to be chosen by her, and the other by me.'

The coins demonstrated during this paper included the following:

Silver Stater of Ægina. This coin came from the island of Ægina in the Saronic Gulf, a short distance south of the Piraeus. This was the first place in Europe to acquire the art of coin-making which had originated in Lydia in Asia Minor in the days of Croesus.

The first coins of Ægina were minted six centuries before Christ, or even earlier. Ægina was a busy centre of sea-borne commerce, so the first coins bore the emblem of the marine turtle. But in 431 B.C., in the first year of the Peloponnesian War the Athenians under Pericles overran the island and destroyed the mint. Incidentally, the young Aristophanes was among the colonists whom Pericles sent to take possession. Then, twenty-seven years later, at the end of the war, the Spartans under Lysander restored the original islanders. But now their naval supremacy was gone, so in place of the marine turtle they used the terrestrial tortoise, the symbol of domesticity. On the reverse there is a dolphin and the letters AIGI. The incuse pattern is designed to prevent the coin from slipping on the anvil when struck with the die.

Gold Stater of Philip of Macedon. This coin was first minted about 350 B.C. by the father of Alexander the Great, and it became the accepted currency for the whole civilized world, just like, later, the silver thaler of Maria Theresa, and in our own time the British sovereign. It even spread through Gaul to Britain, and this rough derivative, found in the south of England, is probably a copy of a Gaulish coin which itself was a copy of the Philipus. Only the forepart of the horse is distinct, while on the obverse Apollo's head cannot be distinguished and only the laurel wreath is recognizable. This coin Hunter purchased in 1782 for £1.11s.6d.

Gold Octadrachm of Ptolemy II. This coin, minted in Alexandria about 280 B.C. is one of great artistic merit and a thing of beauty. The circumstances in which Hunter acquired it, and thirty-six others from the same mint, are as follows. Mr. James Bruce of Kinnaird, known as Bruce of Abyssinia, saw them in Cairo, and after his return home he obtained them for Hunter at a total price of over £500.

This group of coins are the chief glory of the Collection, and depict an important phase in world history. The first Ptolemy had been a general under Alexander the Great on whose death he obtained the satrapy of Egypt, and in 306 B.C. he assumed the title of Basileus or King. In 285 B.C. he abdicated in favour of his son. The coin demonstrated shows, on the front or obverse, the busts conjugate of Ptolemy II and his wife Arsinoe II, wearing diadems to indicate their royal status. On the reverse side are the busts conjugate of his parents, Ptolemy I and Berenice I. The coin is remarkable in several respects. It is the first ever made with the likeness of a human being. Until then the privilege had been reserved for the gods. Ptolemy overcame this disability by having himself raised in his lifetime to a status of divinity, and when his wife died she also was deified in her own right as Thea Philadelphos. This carried a further advantage, for Ptolemy ordered the temples to recognize her divinity, and with this authority he was able to gain access to the wealthy temple treasuries.

Silver Denarius of Brutus. This is the first example of a coin designed to promote psychological warfare. Julius Caesar was murdered on the Ides of March 44 B.C. and Brutus caused this coin to be struck in support of his claim to have restored his country to liberty. It shows, on the reverse, the two daggers, points down, and between them the cap of liberty.

Gold Ducat of James V of Scotland. This coin, the bonnet piece, shows James wearing the insignia of the Order of the Thistle. Its life-like quality gives an indication of his character, which enabled him to survive all the attacks of his own nobles as well as his neighbour, Henry VIII.

Silver Petition Crown of Charles II. Thomas Simon had been chief engraver to Cromwell. At the Restoration he was displaced by Roettier, a Dutch artist, who had worked for Charles during his exile. Roettier engraved a fine new crown piece but Simon, using the same design as a model, improved upon it by superior engraving and delicacy of touch. Round the rim in minute lettering is the Petition: 'Thomas Simon most humbly prays Your Majesty to compare this his tryall piece with the Dutch and if it were truly drawn and embossed, more gracefully order'd and more accurately engraven to relieve him.' Alas, Simon's plea was unsuccessful and he retired on a small pension and is believed to have died in 1665 during the Great Plague.

THE SEVENTIETH ORDINARY MEETING

This meeting was held at the University of Stirling on 17 June 1972. Professor D. A. G. Waddell, Head of the Department of History at the University, arranged an attractive programme, three members of his staff reading papers. Following the meeting Professor Waddell took the members and their guests on a conducted tour of the handsome new buildings of this delightfully sited university.

The first of the three papers was given by Dr. Anand C. Chitnis, Lecturer, who spoke on:

MEDICAL EDUCATION IN EDINBURGH, 1790–1826, AND SOME VICTORIAN SOCIAL CONSEQUENCES

It has long been recognized that medical education in Edinburgh was outstanding from the mid-eighteenth to the early nineteenth centuries. In terms of numbers, the Faculty of Medicine, certainly between 1811 and 1825, taught approximately half of the matriculated students at the university. In terms of the education available, the Faculty and the Royal Colleges of Physicians and of Surgeons claimed highly reputable teachers who introduced new, and expanded existing, didactic techniques based on observation, experimentation and practice. By 1790, the Edinburgh medical school already had an international reputation and Edinburgh was the first city in Britain which afforded concurrently a university medical school, Royal Colleges, many private lecturers and extensive hospital and dispensary facilities.

Developments in medical education were not isolated, however, during this period. It was the era of the Scottish Enlightenment, for example, the writings of David Hume and Adam Smith; the work of such men of diverse accomplishments as Watt, Raeburn and Adam; the building of the Edinburgh New Town; the foundation of the Royal Society of Edinburgh, the *Encyclopaedia Britannica,* and the *Edinburgh Review.* Medicine played an equally crucial part in the history of the Scottish Enlightenment alongside these and other men and measures.