from it, and there were serious outbreaks in 1582 and 1603. The Privy Council, when ordering precautions against the spread of the disease, considered that London should have a special plague hospital.

There were hardly any hospitals since Henry VIII had abolished the monastic hospitals against the advice of Sir Thomas More. The only metropolitan hospitals which survived, through the wisdom and persistence of the citizens of London, were the five Royal Hospitals—St. Bartholomew's, St. Thomas's, Christ's Hospital (founded in the buildings of the Grey Friars), Bethlehem Hospital for the insane, and Bridewell, a prison hospital.

Rheumatic complaints, attributed to the fogs and damp of England, were prevalent. Some cases were examples of rheumatic fever, but the majority can be ascribed to chronic rheumatism. Mary Queen of Scots suffered much from the chronic arthritic form during her captivity in England, and was permitted to take the baths at Buxton, which belonged to her gaoler, the Earl of Shrewsbury. One Dr. Jones was the resident physician, who made it his business to enhance the fame of the watering-place. Spa treatment also began at Harrogate under the auspices of Timothy Bright, M.D.Cantab, who wrote an erudite treatise on "Melancholia," a book on hygiene, and invented modern shorthand.

The Elizabethan adventurers voyaging to the New World encountered new diseases, such as "calenture" (heat-stroke), "las espinas" (prickly heat), "camaras de sangre" (tropical dysentery, from which Drake died in 1595), and "tabardillo" (yellow fever). These were studied by English ship surgeons, and first described by "G. W." (? George Wateson or Whetstone) in 1598 in the first English treatise on tropical medicine, entitled *The Cures of the Diseased in remote Regions: Preventing Mortalitie incident in Forraine Attempts of the English Nation.*

Conclusion

Of the reign of Queen Elizabeth I it may be said that, amid much confusion and error, medicine and surgery had become organized professions, and that learned physicians and surgeons were advancing the study of disease. Public health administration began to be organized under the stimulus of pestilence.

Caius and Gilbert lived in the dawn of experiment which preceded the great discovery of Harvey in the "insurgent century," as Professor Charles Singer terms the seventeenth century, so rich in scientific foundations.

This progress owed much to King Henry VIII and his illustrious daughter, Queen Elizabeth I. From that time medicine has enjoyed the patronage and encouragement of successive sovereigns of Great Britain, and to-day Queen Elizabeth II maintains this high tradition of her predecessors in an age when so great a harvest is reaped in scientific knowledge, medical research, and the prevention and cure of disease.

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MEDICINE AND THE CROWN

BY

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In this Coronation Issue of the *British Medical Journal* it is fitting that there should be more than passing reference to the relations between the Crown and the profession of Medicine, since in the long roll of our sovereigns there are many who demonstrated clearly their interest in its advancement. Physicians, surgeons, general practitioners, public health, hospitals, and nursing have all at some period profited by the active interest and encouragement of a sovereign. Only three weeks ago our young Queen demonstrated her deep interest in our profession by graciously laying the memorial stone of the new buildings of the Royal College of Surgeons—of which she was already an Honorary Fellow. As medicine has become more corporate these links have become more evident. Nearly four and a half centuries have passed since the real beginnings of corporate medicine in this country; but for five hundred years before that there had been in the practice of the Royal Touch a more personal relationship between the sovereign and the Healing Art.

The Foundation of Hospitals

From Saxon times throughout the Middle Ages various sovereigns were active in founding hospitals, homes for the destitute, and lazar-houses. In the tenth century Athelstan assisted the saintly work of the canons of the Minster at York by founding St. Peter's Hospital in that city. The Leper-hospital of St. Giles in Holborn was founded by Queen Maud, consort of Henry I, some time before 1118. The Leper-hospital of St. Bartholomew in Oxford was founded by Henry I in 1126, and by the year 1135 he had founded four other institutions in Colchester, Cirencester, Lincoln, and Newcastle-upon-Tyne. The Leper-house of St. Margaret at Huntingdon was founded in 1165 by King Malcolm IV of Scotland, who was also Earl of Huntingdon; it was annexed to a Cambridge college in 1462. Stephen refounded the Hospital of St. Leonard at York in 1135, and his wife, Matilda, founded St. Katharine's in London. John was regarded as an outstanding patron of lepers, and he is supposed to have founded hospitals near Bristol, Lancaster, and Newbury. During the

whole of the twelfth century and in the thirteenth the sovereigns of England continued to take an active interest in this saintly work, though the need for leper-hospitals as such gradually diminished. By the time of Edward III the leper-hospitals at Oxford and elsewhere contained no lepers, and in 1434 new statutes had to be made for the great leper-hospital at Durham, since in that area there were then practically no lepers left. One of the last of these houses of succour to be erected was the Hospital of St. John the Baptist in Cheapside, which was founded by Henry VII in 1505.

The dissolution of the monasteries by Henry VIII led to great social changes in the community, and incidentally, by abolishing such a large number of hospitals and almshouses, resulted in a great increase in the numbers of beggars and vagrants in the streets. But in another direction his act led to the rise of the major London hospitals.

The earliest of the great London hospitals is St. Bartholomew's, which from the time of its foundation in 1123 was used for the treatment of the sick. It is not usually realized that the hospital originally came into being through the generosity of Henry I. The legend goes that Rahere, an Augustinian monk who had travelled from England to Rome, had a vision there in which St. Bartholomew the Apostle instructed him to found at Smithfield a tabernacle of the Lamb, a temple of the Holy Ghost. On his return he found that the chosen site belonged to the King, but Rahere was successful in his supplication. He built his priory and its attached hospital. The hospital "was designed to give help to the needy, orphans, outcasts, and poor of the district, as well as to afford relief to every kind of sick person and homeless wanderer. The sick poor were to be tended until they recovered, women with child until they were delivered, and if the mother died in hospital the child was to be maintained until the age of seven years" (Sir D'Arcy Power). There can be no doubt that St. Bartholomew's was concerned with the treatment of the sick from the start. It is known that in 1223 and in the following year Henry III made a gift to the hospital of an oak tree from Windsor Forest for the heating of the hospital. On the dissolution of the monasteries Henry VIII took the revenues of St. Bartholomew's Priory into his own hands, and the citizens petitioned for the continuance of the hospital. Henry then granted three charters—of 1544, 1546, and 1547—to the hospital. These refounded it for its original purpose, and it is under these charters, especially that of 1546, that the hospital is now administered.

Edward VI and the Royal Hospitals

There is an incident in the history of the London hospitals which is somewhat obscure and misunderstood. I have already mentioned the change in social life produced by the dissolution of the monasteries, which had always had as part of their function the succouring of the needy, the crippled, and the sick. We have seen how Henry VIII had been persuaded to restore St. Bartholomew's Hospital to its original purpose, and the citizens of London had acquired St. Mary's of Bethlehem for the care of the insane. In the early days of the reign of Edward VI the streets of London were swarming with poor and destitute, with rogues and with loose women. Richard Grafton, who had printed the Book of Common Prayer in 1549 and in 1552, was much concerned, and he interested Ridley, the Bishop of London, in the matter. In February or March, 1552, Ridley preached before the King at Whitehall. This famous sermon dealt with the necessity of caring for the poor. As soon as it was finished Edward sent of his own accord for Ridley and asked what steps he should take. The Bishop was astonished at the King's knowledge of the problem, and he suggested that his sovereign should address a letter to the Lord Mayor asking him to advise appropriate action. Edward had the letter written at once; he signed it, and asked Ridley to deliver it by his own hand to the Lord Mayor, Sir Richard Dobbs.

As a result of this action a part of the difficulties were overcome. At that time the area later occupied by Christ's Hospital was covered with the semi-ruined buildings of a dissolved convent of the Grey Friars into which "rogues and disorderly women" crept at night to sleep. The City now proposed to take over the buildings for the reception of fatherless and pauper children, and also St. Thomas's Hospital for the treatment of the sick and infirm. This ancient hospital had been surrendered to Henry VIII in 1540, and during most of the reign of Edward VI it was owned by Sir John Gate, and was almost derelict. There is a legend that Henry had intended to re-establish it as a hospital, as he had done in the case of St. Bartholomew's, but death had prevented him. This proposed action of the City fathers would deal in part with the social problem of the City, but there now remained the most difficult problem of the reformation and employment of tramps, rogues, and dissolute women. They therefore proposed to supplicate the King for the royal palace of Bridewell. A deputation waited on Edward in May or June, 1552, and, after it had presented its report, Bishop Ridley, on his bended knees, presented a personal supplication for Bridewell. Edward presumably gave his permission for the citizens to continue with their scheme for Christ's and St. Thomas's—already owned by them—since in November, 1552, Christ's Hospital received 380 children, and at the same time 200 sick and aged persons were admitted to St. Thomas's. But Bridewell was not the personal property of the King: it belonged also to his successors, and he must consult his Council.

In January, 1553, Edward began to show the early signs of pulmonary tuberculosis. On April 10 the Lord Mayor was summoned to the Court at Whitehall, and there, in the words of Stow, "the King's majesty gave to him, to the

Symbolical representation of the grant of the Charter of the Three Royal Hospitals—St. Thomas's, Christ's, and Bridewell—by Edward VI to the Corporation of London, June 26, 1553. Line-engraving by George Vertue after the picture at Bridewell.

commonality and citizens, for to be a work-house for the poor and idle persons of the city of London, his place of Bridewell." On the following day the King went to Greenwich, from which he never returned to London. The action which the King had personally inaugurated was now completed by his Council's officers. On June 12 he executed an indenture with the City of London, whereby he consented to be named the founder and patron of the three new hospitals, and the appointment of governors and other officials for the three hospitals was authorized. On June 26 the Charter of Edward VI of the Hospitals of Christ, Bridewell, and St. Thomas the Apostle was granted. It is signed by "Cotton," who was controller of the royal household. The King's condition had been desperate since May 5, and on July 6—ten days after the granting of the Charter—he passed away.

A translation of the Charter can be read in Parsons's *History of St. Thomas's Hospital*. From the wording it is quite clear that Edward intended the provisions to apply jointly to these three hospitals, hereafter to be called the "Royal Hospitals"; that the governors should be one body corporate and politic; and that the governors and their successors should have a common seal.

The interesting point is that there is in Bridewell a picture which is supposed to represent the granting of this charter by Edward VI. The picture was formerly attributed to Holbein the Younger, until it was later realized that he died ten years before the event depicted. The most probable attribution is to the court painter William Scrottes, who was born in the Low Countries. It is certainly a contemporary work, but it is a curious fact that there is no record of it whatever until 1751, when the governors thanked Mr. George Vertue for his engraving of the picture. Vertue's engraving is reproduced here. As a work of art it has great merit; but he has taken artistic licence in turning the sickly King into a rather pompous youngster, and in making the other characters appear older. This picture is still at Bridewell, and has always been associated with that institution. Mr. E. G. O'Donoghue, the learned author of the history of Bridewell, attempted to show in 1923 that the picture represented not the granting of the Charter but the occasion on April 10, 1553, "at which Edward VI announced his intention, probably reading from a document drawn up by the Council, of bestowing his palace as a personal gift upon the Corporation of London." O'Donoghue rightly argues that on June 26—the date when the Charter was granted—Edward was not at Whitehall, the audience chamber of which is represented in the picture, but at Greenwich; and that, in any case, by June 26 the King was on his deathbed. In this way O'Donoghue hoped to associate the picture and the incident even more closely with Bridewell. But he overlooked the obvious fact that, in both the picture and in Vertue's engraving, the King is not reading from a document; he is presenting to the Lord Mayor a document which, judging from the presence of the enormous attached seal, can only be a charter.

The painting represents in effect what *would have happened* on June 26, 1553, if the King had been in good health. It is an idealized picture, symbolizing the granting of the Charter to the Three Royal Hospitals. There is no mention of this picture in Parsons's *History*, and its association with St. Thomas's and Christ's, equally with Bridewell, appears to have been overlooked.

In the year 1555 the Hospital of St. Mary of Bethlehem became a Royal Hospital. Two years later St. Bartholomew's was added, so that the final number was five.

The establishment of the great provincial and London hospitals in the eighteenth century was due to the wave of philanthropy which spread over the country at that time, and royal patronage played only an indirect part in their foundation.

The Sovereign's Personal Interest in Medicine

During the Renaissance a smattering at least of medical knowledge was part of the educational equipment of a gentleman. Henry VIII is an excellent example of the case in point. Apart from his practical interest in physicians and surgeons, which is more fully mentioned later, he dabbled in pharmacy and treated the illnesses of his friends. There is in the British Museum a manuscript known as the Diary of Dr. Butts. It is in effect a pharmacopoeia of plasters, liniments, and cataplasms drawn up by Butts and three other famous physicians of the time. Many of these medicaments were devised for the treatment of Henry's ulcers. Included among them is a prescription entitled "The King's Majesty's own Plaster," which was described as a plaster devised by the King to heal ulcers. It consisted of pearls and guaiacum wood. Other formulae are described as having been "devised by the King at Greenwich and made at Westminster"; they are for the treatment of excoriations and swelling of the ankles, and also to prevent inflammations and to remove itching.

It was stated by a famous Wittenberg professor of medicine that Elizabeth I also dabbled in prescribing. She was supposed to have sent a formula of her own devising for a "cephalico-cardiac medicine" to Rudolf II, the Holy Roman Emperor. She is also credited with having selected doctors and pharmacists for Ivan the Terrible of Russia.

The Anatomy of Geminus

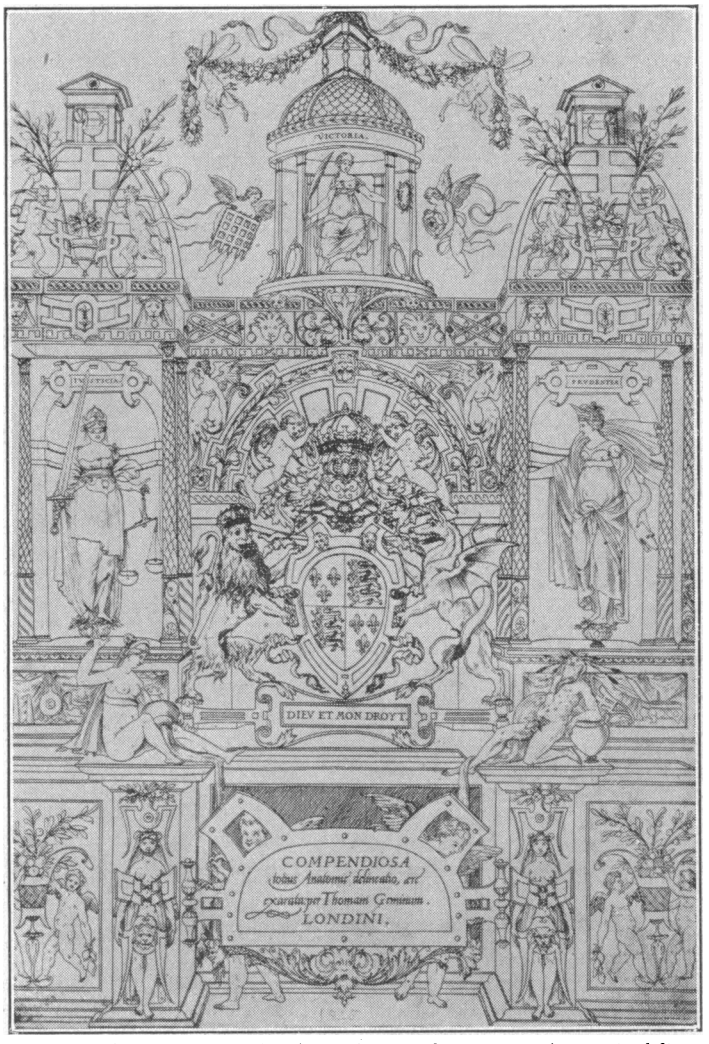
More important from the aspect of the scientific advancement of medicine was the interest which both these sovereigns took in anatomy. The *Fabrica* and the *Epitome* of Vesalius were published at Basle in 1543. Two years later there appeared in London a folio work entitled *Compendiosa totius Anatomie delineatio, aere exarata per Thomam Geminum*. Who was this man Geminus? He was certainly a foreigner, and he probably belonged to the village of Lys-les-Lannoy, which lies about fifteen miles from Lille, in French Flanders. He probably came to England in 1540, and died there in 1563. Despite doubts which have been cast on his profession, Geminus was almost certainly a surgeon, and he was probably also a maker of surgical instruments. He was attached to the Court, and he received £10 per annum from the Privy Purse. In addition to these pursuits Geminus was also a skilled engraver; in fact, he was the first-known line-engraver to work in England. He made certain plates for the famous women's book entitled the *Byrth of Mankynde*, and he followed this with his Anatomy of 1545.

The most important part of this work on anatomy consists, apart from the engraved title-page, of forty engraved plates which are direct copies of the woodcuts which appeared in the *Fabrica* and the *Epitome*. There is also a short accompanying Latin text, descriptive of the plates, which is very much shorter than the *Fabrica* text and is not a résumé of it. Vesalius was quick to point out that his great work was being plagiarized; and he accused "that Englishman" of having copied his illustrations poorly and without skill. Vesalius had no cause to become heated over the quality of the Geminus copies; they are very competent engravings, and the fact that they were reprinted four times shows that they met a need. In the long dedication Geminus refers to Henry VIII in flattering terms, and the ornate title-page bears the royal arms. There is no doubt that this work was published with Henry's knowledge and approval.

Seven years after its first appearance the Anatomy of Geminus had a second edition (1552). In 1553 the third edition appeared, and this was a translation into English. There was a fourth edition (second English) in 1557. All these editions bore the royal arms on the engraved title-page, and the book was therefore sponsored also by Edward VI and Mary. The last—fifth—edition, also in English, appeared in 1559, the year after Elizabeth came to the throne. The engraved title-page again appears in this edition, but the royal arms have now been replaced by an engraved portrait of Elizabeth, which, though not particularly pleasing, ranks as one of the few portraits of that monarch during the early years of her reign.

The Crown and the Physicians

At the dawn of the sixteenth century neither the physicians nor the surgeons in England were looked upon with the respect which they claimed on the Continent. Many quacks practised both medicine and surgery, and conditions were such that effective control was difficult. The most important influence in effecting an amelioration of the position was Thomas Linacre, who was one of the earliest English humanists, and who had spent a lengthy period in Italy before he was summoned from Oxford to undertake the education of Prince Arthur. On the death of the prince Linacre left the Court to practise his profession, but he had by then many friends in the royal household, and he was well known to Prince Henry. On Henry's accession in 1509, Linacre was appointed as his physician, and the ideas which Linacre had long held regarding the regulation of medical practice had a chance of being tried out under the King. In 1512 an Act was passed which provided that no one should practise the profession of medicine within the City of London or within a radius of seven miles unless he had passed an examination conducted by the Bishop of London or the Dean of St. Paul's. The actual examination was carried out by experts in medicine and surgery, and similar arrangements were made for the provinces. Graduates in medicine of Oxford and Cambridge were exempted from this examination.



Engraved title-page of T. Geminus, *Compendiosa totius Anatomie delineatio*. First edition, London, 1545. The design bears the Royal Arms of Henry VIII. (From the copy in the Wellcome Collection.)

This measure did not produce the degree of success which Linacre wished, and he now proceeded with a scheme for the establishment of a College of Physicians. On September 23, 1518, the College was constituted by Letters Patent. There was some ambiguity in the wording, and the constitution of the College was therefore confirmed by a statute. The founders were Linacre, John Chambre, and Ferdinand de Victoria, physicians to the King, together with Nicholas Halsewell, John Francis, and Robert Yarley. By the statute these six men, together with two other named physicians, were appointed Elects and were enjoined to appoint a president yearly from among themselves. Linacre was elected the first president of the new college, and he continued to be appointed annually to that office until his death in 1524. Without the active interest of Henry VIII and of Wolsey, Linacre's plans would not have matured. It should be added that Henry also furthered the cause of medicine by his foundation of the Regius Chair of Physic at Oxford and at Cambridge.

The Crown and the Surgeons

It is by no means a coincidence that both the physicians and the surgeons should have become separately incorporated in a fruitful manner in the reign of the same sovereign, Henry VIII. In each case the interest of the King made smooth the path. In the case of the surgeons he had a personal interest, since he was from time to time much troubled by a varicose ulcer in the leg. In each case, also, a powerful personality was at work—in the case of the physicians, Linacre, and in the case of the surgeons, Thomas Vicary.

During the fourteenth century the craft of surgery was in a chaotic state in London. To parody a famous sentence of Macaulay's, it may be said that there were barbers and there were surgeons; but while some barbers were surgeons, the surgeons were not barbers. A Fraternity or Guild of Surgeons—a weak and ineffective body—had existed in London from at least 1369, with some power to control the professional activities of its members. The Guild of Barbers was probably an older body, since its records go back to 1308. Some of its members were barbers who shaved, drew teeth, and let blood; while other members did minor surgery and the work which we would now largely associate with the general practitioner. As time passed the Guild of Barbers flourished and was eventually elevated to the dignity of a City Company, the members of which had the right to wear a livery and to govern the professional conduct of its members.

In 1493 the Surgeons and the Barbers entered into a loose alliance, but the position was unsatisfactory, since there was little possibility of controlling the numerous quacks, cutters for the stone and the cataract, and performers of similar dangerous operations—which, in any case, were usually left to them by both the surgeons and the barbers.

This unsatisfactory state of affairs was well known to Thomas Vicary, a young surgeon of great ability. During one of Henry VIII's progresses he was laid up at Canterbury owing to his varicose ulcer. Vicary was called in, and—temporarily—cured the condition. Henry rewarded him in 1528 by appointing him his surgeon. Two years later he was given the reversion to the post of sergeant-surgeon, and in 1536 he succeeded to the post. Vicary used well the opportunities which he had of influencing the sovereign, and in 1540 the two Companies of Surgeons and Barbers were formally united into a new company called

the Masters or Governors of the Mystery and Commonality of the Barbers and Surgeons of London—or, in short, the Barber-Surgeons' Company. Vicary was not a master of either company at that time, but his great influence is shown by the fact that Holbein, in his famous picture, showed him receiving the charter of incorporation from the King.

This union persisted for just over 200 years. In 1745 the two companies separated, and the Surgeons' Company ultimately became the Royal College of Surgeons of England.

The Crown and the Apothecaries

A similar state of affairs existed in respect of the apothecaries; but the royal interest which brought about a consolidation of their affairs was not that of Henry but of James I. The Grocers of London has arisen out of a Guild of Pepperers which was known to exist in the late twelfth century. The Grocers were incorporated by Edward III in 1345, and they received a Royal Charter from Henry VI in 1429. Twenty-six years later they were entrusted with the task of examining the drugs and other materia medica sold by the apothecaries. As a result the apothecaries eventually became members of the Grocers' Company, probably with considerable financial advantage, since the Grocers were wealthy and ranked second among the City companies. The alliance between the two parties was uneasy. By 1562 the College of Physicians was attempting to obtain control of the apothecaries and to have them taken away from the jurisdiction of the grocers. The reason was that the apothecaries not only sold materia medica, they also gave medical advice and applied the drugs which they advised. This practice later became a bone of contention between the physicians and the apothecaries. But if the physicians had a grievance because the apothecaries not only compounded drugs but saw patients, the apothecaries themselves soon thought that they were aggrieved because some physicians not only saw patients but also compounded drugs. In 1588 the apothecaries petitioned Queen Elizabeth for a monopoly in compounding and selling drugs; the petition was refused. Moreover, the grocers felt that the apothecaries were having the best of two worlds, since they not only sold drugs but also groceries.

When Elizabeth died and James acceded in 1603 all charters and monopolies had to be surrendered for inspection, as was always done on the death of the sovereign. Most charters were restored. But on this occasion the charter of the Grocers' Company was restored in 1607 with the alteration that the apothecaries were to form a separate section of the company. Much encouraged, the apothecaries reminded themselves that they had no voice in the government of the company, and under the stimulus of Gideon Delaune, the apothecary to James's consort, Anne of Denmark, they determined to agitate for complete separation from the grocers. Delaune was anxious to have a Bill promoted in Parliament for this purpose; but the grocers naturally showed great hostility, and he seems to have been the only apothecary who stood his ground. It was several years before the apothecaries were whipped up to the next step, which was taken in 1614. On April 2 of that year the Apothecaries of London presented to James a Humble Petition in which they asked to be incorporated by Royal Charter, just as had happened in the case of the Physicians and Barber-Surgeons.

Engraved title-page of T. Geminus, *Compendiosa totius Anatomie delineatio*. Fifth edition, London, 1559. The plate used is that of the 1545 edition, with the substitution of a portrait—probably the earliest published—of Elizabeth I in place of the Royal Arms. (From the copy in the Wellcome Collection.)

James acted at once and instructed Sir Francis Bacon and Sir Henry Yelverton, the Law Officers of the Crown, to confer with Mayerne and Atkins and to report. It was known that Bacon did not think highly of physicians in general, and from now on he showed himself a friend active in the interests of the apothecaries. He and his brother Law Officer recommended the separation of the apothecaries from the grocers, and suggested that the apothecaries might be more fittingly associated with the physicians. The King replied to his Law Officers at once, and suggested that the new company should retain the precedence which it had formerly held as a part of the important Grocers' Company. Both the physicians and the grocers petitioned against the new proposal; and the position of the apothecaries was not strengthened by the fact that they were as a body not unanimous in the desire to secede from the grocers. A charter was drafted which would have made the new company subservient to the physicians. There is no doubt that Sir Francis Bacon continued to work for the apothecaries, and it was owing largely to him that this draft charter was amended so as to permit the apothecaries to manage their own affairs. The amended charter was signed on December 6, 1617. While the apothecaries had triumphed, the disputes did not end, and it was well over 200 years before the position of the apothecaries in relation to the physicians and surgeons was settled.

The Crown and the Royal Society

The history of the foundation of the Royal Society is relatively well known, and can be dealt with briefly here. By the year 1645 there were meeting in London a group of men who were interested in experimental philosophy and such matters. The meetings were informal discussions and

Holbein's Commemoration of the Act of Union between the Barbers' and Surgeons' Companies in 1540. Stipple by W. P. Sherlock after the picture at Barbers' Hall.

took place at the houses of Robert Boyle and of other members. The subjects of discussion covered a wide field, and included what we would now term the medical sciences. "About the year 1648–9," John Wallis, the recorder of these events, informs us, the company divided and some members went to Oxford while others remained in London. The Oxford Society became the Philosophical Society of Oxford, and continued to hold meetings until 1690, when that society became defunct. The London Society continued its meetings, usually at Gresham College, until about the year 1658, when the grave political disturbances towards the end of the Commonwealth made it expedient to discontinue them. However, with the Restoration matters improved vastly, and the meetings at Gresham College were resumed. It was recognized that the Society should be organized on more formal lines, and a memorandum was drawn up to promote the line of action.

Charles II now comes into the picture. He had wide interests, and at a later date he was said to have had a "chymist" laboratory and an operator in his palace; it was also said that he frequently visited the laboratories of his friends and discussed scientific matters. Early in December, 1660, the journal-book of the new Society records that Sir Robert Moray had brought word from the Court that the King had been acquainted with the design of the members, and "he did well approve of it, and would be ready to give encouragement to it." The Society then proceeded to limit its membership to fifty-five, and to draw up certain rules regarding elections, officers, and servants. Sir Robert Moray was elected president for a month, and was thereafter re-elected. He had been with Charles during his exile, and exerted much influence in Court circles.

An important member of the infant Society was the diarist John Evelyn, who also had considerable influence at Court. He had obviously given thought—probably at times subconsciously—to the question of a suitable name for the Society. In November, 1661, he published his translation of a work by Gabriel Naudé, and in his dedication to the Earl of Clarendon he praised that nobleman for his services "in the promoting and encouraging of the Royal Society." Evelyn had had frequent conversations with the King, and the name of the Society which he proposed may have been suggested by Charles, and in any case was certainly approved by him. The name was therefore adopted, and Charles "was pleased to offer of him selfe to bee enter'd one of the Society."

The Charter of Incorporation passed the Great Seal on July 15, 1662, and this is the date of foundation of the Society. Charles presented to it the magnificent mace which is still constantly used at every meeting of the Council and of the Society. In the Charter the King is described as Founder and Patron of the Society. Within a few years two further Charters were granted. The King also assisted the Society financially by giving it the grant of Chelsea College. It was later repurchased from the Fellows by the King.

The Royal Society has had other royal benefactors. In 1768 George III financed the Society's expedition to observe the transit of Venus. In 1825 George IV founded two Royal Medals, and the grant to provide these has been continued subsequently by succeeding monarchs.

Infectious Diseases and Public Health

An important measure for the prevention of infectious disease imported from without was the introduction of quarantine. Venice had been a pioneer in the prevention of plague, which was apt to be introduced from the Levant, and by the end of the fifteenth century its sanitary service was imposing in its efficiency. But in other areas, such as Milan and Marseilles, quarantine had been practised with good results. In England the practice remained for several generations solely a matter for the Court. It was designed to prevent the sovereign from being infected by ambassadors from countries in which plague was rampant. For example, in the plague which afflicted London in 1513, the Venetian ambassador was excluded from the Court for 40 days whenever a case of plague had occurred in his household. The well-known measures for preventing the spread of plague in London by marking and shutting up infected houses were supposed to have been devised by Henry VIII himself. These measures were further developed in later plagues, culminating in the plague of 1665.

Charles II touching for the King's Evil. Line-engraving by R. White, prefixed to John Browne, *Adeno-choiradelogia*, London, 1684.

Even more stringent measures were sometimes adopted by the sovereign to punish those who were supposed to have carried plague. For example, Queen Elizabeth had a gibbet set up at Windsor on which to hang anyone who had carried the plague or who had harboured infected or suspected persons. Charles I had a gibbet for a similar purpose at the gate of the Court at Woodstock.

There is in all the post-Renaissance period perhaps no parallel for the great interest which Edward VII took in the welfare of the tuberculous. It is well known that, when he saw that at a congress the emphasis had been laid on preventability of the disease, he asked the simple question, "If preventable, then why not prevented?" Since these words were spoken more and more emphasis has been placed on the preventive aspect of tuberculosis, with results which are at last becoming evident.

In recent times the development of public health measures has been assisted in various ways by the interest of the sovereign, but a discussion of these factors would extend this note beyond its legitimate scope. It must be borne in mind that many public health measures can be traced back to the wise reform of the Poor Law by Elizabeth I. So also can measures framed to control the irregular growth of towns. On July 7, 1580, Elizabeth signed at Nonesuch, near Epsom, a royal proclamation which was designed to check the growth of London beyond the boundaries of the City, to prevent the influx of "landless men" to these areas, and to limit the overcrowding which was developing in small rooms. These measures had great influence on later policy.

Royal Healers

In the introduction to this article reference was made to the Royal Touch, and it is perhaps fitting to close with a few brief notes on a practice which was exercised by most of the sovereigns of this land for over six hundred years.

The gift of healing by touching with the hands was supposed to be conferred on the sovereign at his Coronation. The disease treated was nearly always tuberculous cervical adenitis—scrofula, or "the King's Evil"—though other conditions such as blindness were dealt with in early times. In England the practice dates from 1066, when Edward the Confessor "cured" an affected girl. From the time of Edward I the practice increased, and it was formalized in a religious ceremony by Henry VII. Instead of a dole of one penny given to each patient, he gave each a gold "angel," which was hung round the neck. Elizabeth I took her healing duties seriously, but James I, sceptical regarding the efficacy of the method, had to be persuaded that for political reasons it was advisable to continue it.

The peak period of touching was reached in the reign of Charles II, who touched over 90,000 persons in 19 years. He is known to have touched as many as 600 men in a single day. Both Pepys and Evelyn described the elaborate religious ceremony when Charles was touching; on one occasion the crowds of patients were so great that six or seven of them were crushed to death. James II carried on the practice, but William would have none of it. It had a last lease of life under Anne, who saw in it a means of demonstrating her hereditary right to the throne. In the year 1712 she touched 200 persons at St. James's Palace. It is well known that one of these was a child of 30 months who was to become the lexicographer Samuel Johnson. Anne may have "cured" many patients, but she certainly did not cure Johnson, who bore until his death the disfigurement which resulted from scrofula. In this country the practice of touching finally disappeared on the accession of George I, who publicly referred certain applicants to the exiled Stuarts. It is all a fascinating story; but all our knowledge of it is derived from the learned commentary of a distinguished FitzPatrick Lecturer—which, incidentally, appeared in the coronation year of George V—and a full résumé of that work was published in the issue of this *Journal* on the coronation of George VI.

THE MEDICAL AND SCIENTIFIC EXPLOITS OF KING JAMES IV OF SCOTLAND

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Although many kings and queens have been interested in the health of the nations they governed, and have done much to promote the advance of medical science, few monarchs have themselves conducted medical or scientific investigations, and still fewer have actually participated in the practice of medicine or surgery. In ancient times there was the example of Mithridates, King of Pontus in the century before the birth of Christ, one who might almost be called a royal toxicologist, who rendered himself immune to poisons by the self-administration of small doses, and who gave his name to that most famous of antidotes, mithridatum, which, along with theriac, retained its position in nearly every pharmacopoeia until the end of the eighteenth century. And, in more recent days, the practice of "the Royal Touch" in the treatment of "scrofula" or surgical tuberculosis, brought kings and queens into close contact with their afflicted subjects from the days of Edward the Confessor to those of Queen Anne, the strange ritual reaching its zenith in the time of Charles II, who it was said, "touched" more than six thousand persons in a single year (1660).

A story even stranger than that of mithridatum or of touching for "king's evil" concerns King James IV of Scotland, whose medical and scientific activities were perhaps unique in history. In his *Chronicles of Scotland* Robert Lindsay of Pitscottie writes: "This noble King James IV was well learned in the Art of Medicine, and also a cunning Chirurgener that none in his realm, that used that craft, but would take his Counsel in all their Proceedings."

The Personality and Background of James IV

In order to understand his medico-scientific exploits it is essential to know something of the King's character and of the condition of Scotland during his reign.

The young prince succeeded his father, James III, under peculiar and trying circumstances. At the age of 15 he was induced to lead a rebel army against the king, who was murdered as he fled from the battlefield of Sauchieburn, near Stirling, in 1488. It is said that he was so filled with remorse at having been partly responsible for his father's death that he wore a chain of iron around his waist for the remainder of his life. Although recorded to be "temperate in eating and drinking," James IV was a high-spirited youth, of whose various love affairs the most romantic concerned the beautiful Margaret Drummond, whom he might have married had she not been regarded as undesirable by those who favoured an English bride for the King. Accordingly, Margaret and her two sisters, Euphemia and Sybilla, were poisoned in 1501 at their father's house, Drummond Castle, and their tombs may still be seen in the choir of Dunblane Cathedral. Two years later James married Margaret Tudor, daughter of the English King Henry VII—a union of great significance to both countries, because the great-grandson of James and Margaret, James VI, became King of England, Scotland, and Ireland. The most graphic contemporary account of James IV is given by the Spanish Ambassador, Pedro de Ayala, who wrote in 1498, "The King is of noble stature and handsome complexion; he is feared by the bad, and loved and revered like a god by the good." An apt