THOMAS VICARY LECTURE

THE RENAISSANCE AND ITS INFLUENCE ON ENGLISH MEDICINE SURGERY AND PUBLIC HEALTH

By

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THOMAS VICARY, Serjeant-Surgeon to King Henry VIII, King Edward VI, Queen Mary and Queen Elizabeth, Master of the Barbers' Company, four times Master of the Barber-Surgeons' Company and Surgeon to St. Bartholomew's Hospital, flourished as England's leading surgeon from 1527 to 1562. His life was passed in stirring times. A new world had been discovered by Columbus. Vicary saw the convulsive change produced by the Reformation and the Dissolution of the Monasteries, the fires at Smithfield and Oxford smoking with the blood of the martyrs, and above all he experienced the influence of the Renaissance and the birth of freedom of thought, individual initiative and action which guided him in his work for British surgery.

It was in the times of Thomas Vicary, then, that a new spirit arose in national thought, and amid a despotic rule, much oppression and injustice, it is possible to trace advances in medicine and surgery, in public health, in social medicine and in culture and education.

It was not until the value of Greek thought became manifest to the practical Englishman that the influence of the Renaissance became widespread. This heritage was brought to England by a band of Oxford men known as the *Humanists*. The teaching of Colet, Grocyn and Linacre, together with young Thomas More, made Oxford famous as a seat of learning. Bishop Fox in 1516 founded Corpus Christi College at Oxford in the interests of the new learning, and John Fisher promoted the spread of Hellenic thought at Cambridge. Once the new learning was established in the Universities, it influenced national thought and practice.¹

England in Tudor Times

The period of the Middle Ages, it has been remarked, had a child-like simplicity of outlook; it experienced extremes of joy and misery, everything was either black or white. It revered authority, that of the

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Church in religion, of the aristocracy in politics, of Aristotle, Galen, Pliny and Pythagoras in science ; it was inconsequent and thoughtless, and loved glitter and display. The England of Thomas Vicary's time was the nation's adolescence.²

Under Henry VII trade and manufactures, especially the woollen industry, were encouraged. The wealth of the country increased, but it was the wealth of a new and powerful class, that of the traders. Queen Anne Boleyn's grandfather was a London merchant, and the most powerful ministers employed by a Tudor king were Wolsey, the son of an Ipswich grazier, and Cromwell, the son of a Putney blacksmith. In the rural districts, the old villeinage or serfdom had gone. With the demand for wool, the landlords found it more profitable to convert their waste and tilled land into pasture land for sheep. In the words of Thomas More,³ "they thrust husbandmen out of their own and made sheep consume, devour and destroy whole fields, houses and cities." This caused much discontent and unemployment, and partly explains the popular support which Henry VIII received in the dissolution of the monasteries which owned most of the land. The abolition of the craft guilds left guildsmen unemployed.

Thus the country in Tudor times was infested with destitute persons. Many became vagabonds, thieves and murderers. The Poor Law legislation of Henry VIII and Edward VI put the onus of relief on the charity of local districts. It was not until the celebrated Poor Law Act of 1601, which made the maintenance of the aged and invalid poor and the provision of work for the able bodied a statutory burden on the parishes through the levying of rates, that the problems of unemployment and destitution began to be handled effectively.

The extent of the population in Tudor times can only be broadly conjectured. A rough census was taken at the time of the Armada (1588), and was found to be something under five millions. The population, according to Froude,⁴ had probably approached this figure many generations before. It had been a stationary population, and did no more than keep pace with the waste from disease, epidemics, high juvenile mortality and civil and foreign war. Wages and the prices of food were regulated, so far as regulation was possible, by Act of Parliament. Wages were high and food was cheap.

On the whole, except for the destitute and the very poor, the standard of nutrition was high. More people probably died of over-eating than under-nourishment, for the multitude of clerks, apprentices, retainers and labourers shared the good things of the tables of their masters.⁵ The Spanish nobles who came into England with King Philip were astonished at the diet which they found among the poor. "These English," said one of them, "have their houses made of sticks and dirt, but they fare commonly so well as the king." "What comyn folke in all this world," says a State paper in 1515,⁶ "may compare with the comyns of England

in riches, freedom, liberty, welfare and all prosperity? What comyn folke is so mighty, so strong in the felde, as the comyns of England?"

The success as rulers of Henry VIII and Elizabeth lay in the fact that their strength rested in the support of the common people and the middle classes. To this end wages and food prices were controlled, pageants were provided for their amusement, and contentment prevailed. The Renaissance introduced a new style of architecture and there was much building of houses or extensions to existing mansions. These dwellings were surrounded by parks and pleasant flower and herb gardens. The princes built palaces, such as Richmond, Nonesuch, Greenwich and Hatfield. Cardinal Wolsey's edifices at Hampton Court and Whitehall were both seized and completed by Henry VIII. The nobles, squires and wealthy merchants followed the royal example and new colleges were founded and built at Oxford and Cambridge. Dress, as we know from the portraits of Holbein, was ostentatious and costly among the courtiers and the well-to-do.

In various ways the amusement of all classes of society was catered for; there were theatrical performances, archery, athletic sports, pageants and shows, bull and bear baiting, badger drawing and cock fighting, while public executions, whipping at the cart's tail, ducking a scold and burning of witches and heretics, provided more sadistic excitement. Such was "Merrie England" in the time of Thomas Vicary.

Education

The Tudor monarchs encouraged and practised scholarship. Linacre was Prince Arthur's tutor. The Oxford humanists, as we have seen, had established the new learning in the Universities. Linacre founded medical lectures which bear his name at Oxford and Cambridge. Yet if it had not been for Sir Thomas Smith, "the flower in his time of the University of Cambridge," the Universities might have perished at the Reformation.

Thomas Vicary knew Latin, but was probably not a classical scholar. However, he emphasized the value of a good general education for the surgeon. He was to be reasonably well versed in philosophy, grammar and rhetoric and a "lettered" man. Vicary's knowledge of and affection for the works of Guido de Cauliaco is indicated by the request in his will "unto the hawle of my company one book called Guido." This was probably *Guido's Cyrurgia* of 1363.

At the grammar schools the boys were taught to read, write and speak Latin. At a few schools, like St. Paul's, Greek was taught and a little mathematics. The pupils were expected to know how to read and write before entrance, a fact which implies the existence of elementary schools kept chiefly by the clergy. Tyndale's translation of the Bible into English undoubtedly stimulated the spread of elementary education. On the whole, there was less illiteracy among the people of England in the sixteenth century than in the first half of the nineteenth. It may be assumed that the medical student in Tudor times received a reasonable

general education, particularly if he went to the University before entering on his professional studies.

Social Medicine and Public Health

In reviewing the general state of England in Tudor times, we have noted signs of progressive prosperity in trade and commerce, the abolition of serfdom and in the main a well-nourished and athletic population. When we turn to the consideration of social medicine and public health, the picture is much less favourable, but there are signs of gradual improvement.

It is in Henry VIII's reign that the beginnings of an enlightened public health policy in regard to water supplies can be noted, for in 1532 there was passed the important Act of Parliament (23rd Hen. VIII, C. 5) which appointed Commissioners of Sewers in all parts of the kingdom. Though much of the work of the Commissioners was riparian in character and directed towards preventing encroachments of the sea, flooding of low grounds and maintenance of river banks, regulations were also made against trade effluents, deposits of rubbish in rivers and pollution of rivers, streams and wells. The larger towns were provided with a regular water system with public standpipes, and water sometimes was laid on to the houses. London for a long time had been well supplied with water, but under the Tudors seven or eight more conduits were set up from which fresh water was hawked about the streets in barrels. These improvements in water supplies probably owed much to Sir Thomas More who was appointed one of the Commissioners of Sewers along Thames bank between East Greenwich and Lambeth in 1514.⁷

Epidemic Diseases

There was much disease in England in Thomas Vicary's days. "Surfeits" due to immoderate eating and drinking often occurred. Gout and stone prevailed among the well-to-do. Scurvy was prevalent, owing to the lack of green vegetables and vitamin-containing foodstuffs, until William Butler (1535-1618), a physician of Cambridge, put scurvy grass and other herbs into the beer. Scabies was so common that it was called "the English Itch." Syphilis was a deadly scourge, as Mr. Johnston Abraham⁸ has shown, and Henry VIII was one of its victims. Leprosy (the term then also included several skin diseases) was nearly abolished through the rigid system of segregation in force, but apparently still lingered, for several leper hospitals survived up to and after the Reformation. Some quarter of a mile to the westward of Charing Cross there stood a religious foundation, a leper hospital with extensive lands, dedicated to St. James the Less, Bishop of Jerusalem. "It was founded," said Stow, "by the citizens of London before the time of man's memory, for fourteen sisters, maidens, that were lepers, living chastely and honestly in divine service." Henry VIII seized this in

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1533, pulled down the hospital, "made a faire parke for his greater comoditie and pleasure" and built there "a goodly manor." Such was the origin of St. James's Park and Palace. There was much indigenous malaria, especially in the Fen districts.

Measles, smallpox and tuberculosis in those days took a heavy toll. Edward VI's racking cough and active consumption "were lit up by the attack of measles and smallpox from which he suffered in April, 1552."

Outbreaks of typhus fever appeared in Europe and began to be more frequent in the towns and overcrowded gaols of this country. In 1540, according to the Continuator of Fabian's *Chronicle*, "divers and many honest persons died of the hot agues and of a great lask throughout the realm." The "hot agues" appear to have been typhus; the "lask" was dysentery. There were epidemics of influenza in 1510 and 1557-8 (Creighton).

But the deadliest epidemics of Tudor times were bubonic plague and the "sweating sickness."

Plague

Plague had remained endemic in England since 1349, the terrible year of the Black Death, which destroyed two million people, half the existing population. At the beginning of the sixteenth century there was a general recrudescence of the disease. After nearly depopulating China, it spread over Germany, Holland, Italy, Spain and Britain in the first decade of the century. In 1500 the plague was so severe in London that Henry VII retired to Calais. From 1511 to 1521 there is not a single year without some reference to the prevalence of plague in the letters of Erasmus and elsewhere. In 1518 plague infested London, and Henry VIII went to Abingdon where people, as he selfishly said, were not continually coming to tell him of deaths, as they did in London. In 1529 there was an outbreak at Edinburgh. From 1537 to 1539 there was much plague in London and in 1547-8 it is noted as rife in the North of England. The worst epidemic of the century was in 1563-4 when a thousand persons died weekly in London.

The chief protective measure was flight from the infected locality, the King and the Court setting the example. Sir Thomas More in a charge he made to the Mayor of Oxford in 1518, ordered inhabitants infected with the plague to keep in their houses and to "put out wisps and bear white rods." They were forbidden to keep animals in their houses, and officers were required to keep the streets of the town cleansed and burn refuse. This procedure was later enforced by the London plague bills of mortality in 1532, parish registers of deaths (1539), and the plague orders of 1543, which were adopted in the Elizabethan regulations. The white wand became the insignia of the "searchers" of infected houses (which had to be marked and closed) and the bearers of the dead. Additional orders later made by the Corporation of London prescribed

burning of infected clothing and bedding, cleansing of streets, closing infected houses for forty days and many regulations about scavenging and sanitation.

The Sweating Sickness

The sweating sickness was one of those mysterious maladies like influenza and *encephalitis lethargica* in our own time which suddenly make their appearance, wreak havoc and destruction for a while, and then as suddenly disappear.

Polydore Vergil⁹ gives the following description of the malady :

“ In the same yere a newe kynde of sicknes came sodenly through the whole region euen after the first entrying of the kyng into this Isle whiche was so sore so peynfull, and sharp that the lyke was neuer harde of, to any mannes remembraunce before that tyme : For sodenly a dedly and burnying sweate inuaded their bodyes and vexed their bloud with a most ardent heat, infested the stomack and the head greuously : by the tormentyng and vexacion of which sicknes, men were so handled and so peynfully pangued that if they were layed in their bed, beyng not hable to suffre the importunate heat, they cast away the shetes and all the clothes lying on the bed. If they were in their apparell and vestures, they would put of all their garmentes euen to their shirtes. Others were so drye that they dranke the colde water to quenche their importune heate and insaciabie thirst. Others that coulde or at the least woulde abyde the heate and stynche (for in dede the sweate had a great and a strong sauore) caused clothes to be layed vpon them as much as they coulde beare, to dryue oute the sweate if it might be. All in maner assone as the sweate took them, or within a short space after, yelded vp their ghost. So that of all them that sickened ther was not one amongst an hundreth that escaped : in somuche, that beside the great nombre which deceased within the cytie of London, two Mayres successiuelly dyed of the same desease within viii daies and vi Aldermen. . . . At the length by study of the Phisicians . . . they learned a present and a spedy remedy . . . whiche is this : If a man on the daye tyme were plagued with the sweate, then he shoulde streyght lye downe with all his clothes and garmentes and lye styll the the whole xxiiij houres. If in the night he were taken, then he shoulde not ryse out of his bed for the space of xxiiij houres . . . and to absteyne from all meate if he might so long susteyne and suffre hungre and to take no more drynke neither hote nor colde, then wyll moderately quentche and delaye his thrustye appetyde.”

Five epidemic outbreaks of sweating sickness occurred in England in the sixteenth century. The disease was first noted in August, 1485, a few days before the landing of Henry VII at Milford Haven. It spread to London, where it caused great mortality. In 1502 it seems to have been prevalent in the West Country, and Prince Arthur probably succumbed to it at Ludlow, when Katherine of Aragon was also attacked, but

recovered. In 1507 a milder outbreak occurred, but 1517 saw a third and much more severe epidemic. It ravaged Oxford and Cambridge and other towns, half the population perishing in some cases. It was confined to England except that it spread to Calais and Antwerp. The fourth epidemic in 1528 was one of great severity. Appearing first in London, it soon spread over the whole of England. Scotland and Ireland were not affected. In London that summer the mortality was very great. "One has a little pain," wrote Du Bellay,¹⁰ the French ambassador, "in the head and heart. Suddenly a sweat breaks out, and a physician is useless, for whether you wrap yourself up much or little, in four hours, sometimes in two or three, you are despatched without languishing."

The disease terrified Henry VIII, who fled from Greenwich to Eltham and thence to remoter places. Archbishop Warham went on with his duties, but eighteen members of his household died, and at Hampton Court where Wolsey displayed equal courage in sticking to his post, his suite was decimated. The Duke of Norfolk was stricken, but recovered, and Cary, Poyntz and Compton, three of the King's courtiers, died. Henry kept a physician constantly with him, confessed his sins daily and occupied his time with prayers and experiments in nostrums against the sweat. The disease spread to the Continent and caused a fearful mortality in Eastern Europe, extending as far as Poland, Russia and Scandinavia. In Hamburg several thousand persons died in a few weeks. France, Italy and the southern countries of Europe escaped. The malady usually lasted a fortnight in each place. By the end of the year "the terrible English Sweat," as it was termed, had entirely disappeared except in eastern Switzerland where it lingered on into the next year. The fifth and final epidemic was in 1551 and was well described by Dr. John Caius in a treatise entitled: *A Booke or Conseil against the Disease Commonly called the Sweate or Sweating Sickness* (1552).^{*} It did not cause much fatality among the poor, but chiefly affected the rich and those who were free livers. Caius noted that "they who had this sweat were either men of wealth, ease or welfare, or of the poorer sort such as were idle persons, good ale drinkers and tavern haunters." Dr. Creighton,¹¹ the epidemiologist, and Dr. Michael Foster¹² considered that the only disease of modern times which bears any resemblance to sweating sickness is *miliary fever* (schweiss-friesel, suette miliaire or "the Picardy sweat"), a malady repeatedly observed in France, Italy and South Germany, but not in the United Kingdom. It was characterized by intense sweating and an eruption of vesicles, lasted longer than sweating sickness, occurred in limited epidemics and was usually not fatal. The first epidemic was

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^{*} I am indebted to Professor W. G. Hoskins for a reference in Nichol's *History of Leicestershire* (p. 891), wherein is given an extract from the Loughborough Parish Register for 1551, as follows: 1551, June: "The Swat, called New Acquaintance, alias Stoupe Knave and Know thy Master began 24th of this month." The Register then mentions twelve persons who were buried in twelve days, and then goes forward to another page where it is written at the top, "The Sweat or New Acquaintance," and mentions seven names all buried in three days, in all nineteen in six (sic) days. After this it seems to cease.

seen in 1718; it continued to 1906 and even later. There were 175 epidemics in France alone.

The physician in Tudor times could do little to check these prevalent epidemics. It was not for want of trying. He exhibited numerous drugs and preparations for the plague and sweating sickness, many of which were unpleasant and based on folklore. Dr. Butts, Dr. Chambre, Dr. Cromer and Dr. Augustin de Augustinis drew up a MS. *Pharmacopœia* of plasters (spasmadraps) and unguents, principally for the use of Henry VIII (Sloane MSS. British Museum, No. 1047). The method of their preparation is very complicated, and they contain, amongst a few efficacious articles, many which are useless.

It has been shown, however, that public health administration on an organized and permanent basis, as denoted by the protection of water supplies, scavenging and plague regulations, had its beginnings in this age. Here again we see the influence of the Renaissance which for the first time applied reason and intelligence to the prevention of disease. Let us for a moment consider the enlightened views of three men in this connexion.

Three Tudor Pioneers in Public Health

Sir Thomas More (1478-1535) is well known as Speaker of the House of Commons, Lord Chancellor, eminent humanist, saint and martyr. In addition, he was a great health reformer. We have to wait until the nineteenth century for a man of equal vision and breadth of view to appear in Edwin Chadwick.

More's friendship with Linacre probably first turned his attention to the problems of public health. His work as Commissioner of Sewers and in controlling plague has already been described. His unfinished treatise, *De Quatuor Novissimis*, written in 1522, a religious book, is full of medical lore and preventive medicine on which he draws for comparison. He believed in treacle as a safeguard against contagion. "Now if a man be so dainty-stomached that going where contagion is, he would grudge to take a little treacle, yet were he very nicely wanton if he might not at the leastwise take a little vinegar and rose-water in his handkerchief." In *Utopia*, printed at Louvain in 1516, More gave an account of "Nowhere"—the imaginary Commonwealth of the Renaissance idealists. The citizens of Utopia esteemed health as "the greatest of all pleasures." Inspired by his knowledge of the principles of Greek medicine, More³ applied his learning to a description of desirable public health provision in Utopia.

He envisaged a well-built city with gardens and open spaces, a public water supply, drainage and cleansed streets, with public abattoirs outside. Public hospitals were provided for the treatment of rich and poor and isolation hospitals for cases of infectious disease. Other amenities included communal meals, the safeguarding of maternity with municipal nurses for infant welfare, nursery schools (or crèches) for children under

five, free universal education for all children with continuation, adolescent and adult schools ; religious instruction, industrial welfare, enlightened marriage laws and eugenic mating and obedience to the laws of health, including fresh air and sunlight and active occupation without undue fatigue.

It is a comprehensive programme of social medicine, which, written in the sixteenth century, expresses many of the aspirations of to-day. If Sir Thomas More had had a wise and discerning master, if that master had given him due authority and powers in administration, England would not have had to wait three hundred years for the initiation of national public health. Instead, Henry VIII sent Sir Thomas More to the scaffold.

Sir Thomas Elyot (? 1490-1546), diplomatist and author, was also an enlightened social reformer. He was traditionally an M.D. of Oxford, although no evidence of this is extant.¹³ He was English ambassador to the Court of the Emperor Charles V, served on several foreign missions and was knighted by Henry VIII, being the first medical man (according to Dr. S. D. Clippindale) to be thus honoured. He wrote *The Castel of Health* (London, 1534), a Latin-English Dictionary (1538) and *The Boke named the Governor* (1531), a treatise on the education of statesmen. *The Castel of Health* is a medical treatise of prescriptions for various ailments, and Elyot gives an account of the disorders from which he himself suffered. He noted that children after their first infancy suffer from a number of maladies and in "England commonly purpyls, meazels and smallpockes." This is the first use of the terms in a systematic work on medicine. The book, like Elyot's other book, was written in English and this aroused resentment among the physicians who regarded Elyot as a layman ; he was, at all events, not a practising physician. Elyot replied to his critics in a preface to the edition of 1541 and mentions that before he was twenty he read with "a worshipful physician" (probably Linacre) the works of Galen and other medical writers. The treatise was very popular ; its teaching is fundamentally unsound, for it is based upon the Galenic doctrine of the "four humours," which then dictated diagnosis and treatment. Elyot also believed in astrology, for he writes : "The causes whereby the air is corrupted be specially four : Influence of the sundry stars, stagnant waters, carrion, overcrowding." The merits of the book are its description of diseases and its independent clinical observations.

Almost contemporary with *The Castel of Health* was the *Book of Children*, by Thomas Phaer or Phayre, in which he gives a list of forty infirmities of children, including a description of "smallpockes and measels." The two diseases were almost regarded as one and were frequently confounded. Thomas Phaer was more of a literary compiler than a physician with original knowledge of diseases. In 1547 he published a *Treatise of the Pestilence*, which was largely copied from a fourteenth-century book on the plague by the Danish bishop of Aarhus.

The third Tudor pioneer in public health was Dr. Andrew Boorde or Borde (? 1490-1549), traveller-physician, "Andreas Perforatus" as he humorously styles himself. He was originally a Carthusian monk, but not being able to abide the rigours of the fraternity (vegetarianism and fasting), he travelled extensively over the continent of Europe "to have the notycyon and practes of Physycke in diuers regyons and countres." In his longest tour (*circa* 1537) he went as far afield as Jerusalem in order to see the Holy Sepulchre. His patrons were Sir Robert Drewry, the Duke of Norfolk, whom he attended and cured, and Thomas Cromwell. Norfolk presented Boorde to Henry VIII. He was an inveterate nomad and practised for a year in Glasgow. He wrote to Cromwell in 1536: "I am now in Skotland in a lytle vnyuersyte or study named Glasco where I study and practyce physk . . . for the sustentacyon of my lyuyng." After practising successfully in London, he settled at Winchester. There he was involved in a scandal and later was put in the Fleet prison in London, where he died in April, 1549. Boorde had a special affection for Montpellier, where he resided for some length of time. He describes it as "the most nobilis vniuersite of the world for physicions and surgions" and "the hed vniuersite in all Europe for the practes of physycke."

It was at Montpellier that he wrote his *Fyrst Boke of the Introduction of Knowledge*, published 1547 (?); the first printed Handbook of Europe; his *Dyetary*, published in 1542 (?); his *Breuyary of Health*, published in 1547; and his lost *Boke of Berdes* (beards) condemning them. Boorde's *Dyetary* is an excellent manual of hygiene based on his medical experience and full of sound commonsense. On nutrition he gives good advice:

"Two meales a daye is suffycient for a resting man; and a labourer may eate three tymes a daye; and he that doth eate ofter, lyveth a bestly lyfe . . . Also sondry meates eaten at one meale is not laudable; nor it is not good to syt long at dyner and supper. An houre is suffycient to syt at dinner; and not so longe at supper."

He also points out the unwise custom of beginning with heavy meats and only putting on better, light and nutritive meats when the appetite is assuaged. The prodigious feasts of the time show that little heed was paid to his counsels.

The instructions in the book for choosing a site and for the building and hygiene of a country house, could hardly be bettered by the textbooks of to-day. These three men—More, Elyot and Boorde—were far ahead of their age. Under the rising sun of the Renaissance they grasped the fundamental principles of social medicine, nutrition and education, and set forth their application in their writings. Much of the seed lay dormant for centuries. It is only in the public health and social reform of to-day that we begin to reap the harvest of their work.

The Hospitals

One of the most evil results of the dissolution of the monasteries was the abolition of the hospitals maintained by the monks for the care and

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Sir Thomas More in his fiftieth year, by Hans Holbein (Royal Library, Windsor Castle). By gracious permission of His Majesty The King.

HENRY VIII GRANTING THE ACT OF UNION TO THE BARBERS AND SURGEONS, BY HANS HOLBEIN.

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T. VYCARY.

Surgeon to H' VIII

treatment of the sick poor. In this short-sighted policy Henry VIII was probably influenced by a scurrilous pamphlet called the *Supplication of the Beggars*, by one Simon Fish, a lawyer of Gray's Inn and a friend of Tyndale's.¹⁴ It was sent to Anne Boleyn, who gave it to the King. It advocated and recommended the wholesale confiscation of Church property and endowments, and that, as the writer pretended, for the benefit of the poor. The double-faced Henry referred the pamphlet to Sir Thomas More, who in 1529 published a counterblast to it, entitled a *Supplication of Souls*. The wise humanist exposed the folly of doing away with the hospitals in these words :

"Then cometh he at last unto the device of some remedy for the poor beggars. Wherein he would have none hospitals made, because he saith that therein the profit goeth to the priests. What remedy findeth the proctor for them? He will allow them no hospitals."

Henry ignored More's advice. By 1539 the total number of suppressed religious establishments was 655 monasteries, 90 colleges, 2,374 chantries and free chapels, and 110 hospitals.

In London the five priories of Austin Canons : Holy Trinity or Christ Church, just within Aldgate, St. Bartholomew's in West Smithfield, St. Mary Overies, St. Mary Spital and St. Mary's Elsing Spital had maintained hospitals for the sick and infirm. They were St. Mary Spital, St. Mary's Elsing Spital, St. Bartholomew's and St. Thomas's in Southwark, St. Mary of Bethlehem (Bethlem Bedlam) for insane patients, was outside Bishopsgate on the site now occupied by Liverpool Street Station.¹⁵

The Corporation of London foresaw the evil that would result from the abolition of these hospitals and, in 1538, Sir Richard Gresham, the Lord Mayor, wrote to the King on behalf of "the poor, sick, blind, aged and impotent persons . . . lying in the street, offending every clean person passing by with their filthy and nasty savours." He asked that the three remaining hospitals, St. Mary Spital, St. Bartholomew's and St. Thomas's, and also the Abbey of Tower Hill, might be placed with their revenues at the disposal of the Mayor and aldermen, so that "all impotent persons not able to labour might be relieved." Nothing was done, but the Court of Aldermen pursued the matter. After the dissolution, they represented "the great infection and other inconveniences" which had followed the closing of the friars' churches. It was not until the outbreak of wars with Scotland and France that Henry took notice of the appeal, because he wanted money and credit from the City. In 1544 he refounded St. Bartholomew's Hospital, but afterwards resumed possession of it. Henry's physicians said the only way of getting the King to listen to reason was to have him fall ill. This was exemplified on his death-bed in 1547, when he made the comprehensive agreement with the citizens which led to his posthumous, if unmerited, distinction as first founder of the "Royal Hospitals." The citizens obtained all they asked, and were also made governors of Bethlehem Hospital with all its posses-

sions. A sum equal to the estimated value of the endowments of the hospitals' 500 marks a year, was to be raised in London annually; provision was to be made for the cure of souls, and all the remaining revenues were to be devoted to the relief of the poor.

Early in the reign of Edward VI, some money was collected and St. Bartholomew's was reopened, doubtless much to the joy of Thomas Vicary; in 1552 Edward added St. Thomas's Hospital and its rectory to his father's gift, and the citizens bought other property from him, the transaction being ratified by Act of Parliament. The Corporation then raised large sums and formulated an elaborate scheme for the treatment of the sick and the relief of poverty. Poor house-holders received outdoor relief; the sick were tended at St. Bartholomew's; the permanently infirm at St. Thomas's; the children of poor persons were fed, clothed and educated at Christ's Hospital (founded in the buildings of the Grey Friars); the insane were treated at Bethlehem Hospital; the undeserving, vagabonds and worse, were made to work in Bridewell, which was of the nature of a prison hospital. Bridewell had been one of Henry VIII's palaces; after 1531 it was used as a residence for ambassadors; Edward VI, when dying, gave it to the City, but it was not until 1556 that Queen Mary reluctantly relinquished it.

In this way, through the wisdom and persistence of the merchants and citizens of London, the five Royal Hospitals were founded. This enlightened policy checked disease, aided London's health and medical education, and is one more example of how the teaching of the Renaissance promoted social reform.

The blow struck at the treatment of the sick in the provinces by the suppression of the hospitals was more deadly. A few of the old hospitals were refounded, but twenty-three of the principal English counties had no hospital until the eighteenth century.

Revival of Medicine

In the Middle Ages the physicians were chiefly ecclesiastics. But there were, as the preamble of the Act of the third year of King Henry VIII recites, a great number of ignorant persons exercising "the science and cunning of physic and surgery, to the perfect knowledge whereof be requisite both great learning and ripe experience." These were unlettered persons, common artificers, as smiths, weavers and women, some being unable to read and yet professing to treat and cure disease. This Act provided that no one shall practise medicine within the City of London or within seven miles of it unless he have been examined, approved and admitted by the Bishop of London or the Dean of St. Paul's. In medicine the candidates were to be examined by four doctors of physic; for surgery, other expert persons in that faculty. Outside London and its precincts the examinations were to be by the Bishop of the diocese, or his vicar-general, with such expert persons as he may think convenient. The Act did not apply to Oxford and Cambridge medical graduates.

This reform, the first beginning of organization of the medical profession in England, was undoubtedly due to the influence of Henry's physician, Thomas Linacre, a medical graduate of Padua and Oxford, who had seen the reputation and distinction to which the medical profession could attain in Italy under the star of the Renaissance, and in the interests of the public wished to separate physicians and surgeons from the horde of empirics and quacks. As is well known, he followed up this first essay by founding the Royal College of Physicians of London in 1518. The Letters Patent state that to the establishment of this incorporation the King was moved by the example of similar institutions in Italy and elsewhere, by the solicitations of at least one of his own physicians, Thomas Linacre, and by the advice and recommendation of his chancellor, Cardinal Wolsey. The Letters Patent were confirmed by Statute 14, Henry VIII. The original founders of the College, John Chambre, Thomas Linacre, Ferdinand de Victoria, all physicians to the King, Nicholas Halsewell, John Francis and Robert Yaxley, with the addition of two other physicians, Richard Bartlot and Thomas Bentley, were named Elects, who should yearly appoint from among themselves a President. No person, except a graduate of Oxford or Cambridge, without dispensation, was to be permitted to practise physic throughout England unless he had been examined and approved by the President and three of the Elects.

"It was expedient and necessary to provide that no person be suffered to exercise and practise physic, but only those persons that be profound, sad and discreet, groundedly learned and deeply studied in physic."

The apothecaries were then members of the Grocers' Company, by whom they were regulated. All apothecaries had their wares and medicaments examined by four representatives of the College of Physicians.

As indicative of the influence of the Renaissance in medicine, it is to be noted that three at least of the founders possessed foreign medical degrees. John Chambre, a priest, was M.D. of Padua and Warden of Merton College, Oxford; Thomas Linacre, who took orders late in life, was M.D. of Padua, and Ferdinand de Victoria, who was also physician to Queen Katherine of Aragon, had probably a Spanish medical degree. Six of the eight Elects, if not all, were Doctors of Medicine of Oxford, so that this University had the major share in founding the College.

Oxford in Tudor times had a prescribed medical course. The M.D. could not be got in less than fourteen years. The Statutes demanded the initial Arts course to the M.A. degree then a faculty course of seven years. The student had to dispute twice, respond once, and see two anatomies before obtaining his Bachelor's degree. A dispensation might be obtained allowing the medical faculty course to begin at the B.A. stage; this shortened the course to the M.B. stage by about two years, and enabled the student to get the licence to practise and the licence to give "cursory" lectures to his juniors. He then became a pupil teacher or demonstrator. The full course still demanded fourteen years from

matriculation. The candidate must perform two anatomies and effect at least three cures before he was admitted to the M.D. (K.Ed.VI Statutes, 1549). Provision for clinical study both in physic and chirurgery was woefully deficient. To obtain this the best students went to Continental schools or gained experience as Army medical officers.

King Edward VI sent a Special Commission to Oxford to see how medical education could be improved, with power, if necessary, to assign one College solely to the study of medicine. This Commission effected little, for shortly afterwards, in Queen Mary's reign, the College of Physicians protested to Cardinal Pole against the admission of ignorant and unlettered men to medical degrees. The fact was that this licensing of physicians and surgeons produced a dearth of medical practitioners. To remedy this, alien practitioners had to be imported, examined and licensed to practise. The standard of practice after being partly—though far from entirely—redeemed from the quacks, was lowered again by the dissolution of the monasteries, when many ejected priests turned to medicine for their livelihood. Thomas Powel quotes the words of one of these priests, who proposed—unwillingly—to do this :

“I have no other means left for my maintenance but to turn physitian, and before I shall be absolute master of that mystery, God he knowes how many men's lives it will cost. For few physitians use to try experiments on their own bodies.” (*Art of Thriving*, by Thomas Powel. Scott's Somers' Tracts, 7,200.)

Several papers have been written by Dr. Goldwin Smith,¹⁶ and others with the object of emphasizing the low standard of medical practice in these times. Dr. Edgar¹⁷ and Dr. Pomeranz¹⁸ have pointed out, with apt quotations, what a poor figure the physician cuts in the plays of Shakespeare and in those of other Tudor dramatists. But the doctor has always been the theme of satire on the stage from the comedies of Plautus and Terence to *The Doctor's Dilemma*. It has also been remarked that the physicians of the Tudor Age made few contributions to the advancement of medical knowledge. Such a stricture is too severe, when the writings of John Caius on the sweating sickness and those of Sir Thomas Elyot and Andrew Boorde are remembered. Queen Elizabeth termed Caius “the most learned physician of his age,” an epithet which posterity has confirmed. Caius was a physician, an anatomist, a great classical scholar, an antiquarian and a naturalist. Then there were Edward Wotton (1492-1555), M.D. of Padua and Oxford, the first English physician to publish a systematic treatise on natural history, and William Turner (d. 1568), M.A. Cambridge, and M.D. of Bologna or Ferrara, and Dean of Wells, the first Englishman who studied plants scientifically. His *Herval* marks him as the father of English botany. The Elects of the College of Physicians, Sir William Butts, who interceded with his royal patient, Henry VIII, both for Wolsey and for Cranmer, and others, were regarded by their contemporaries as eminent physicians. In their busy professional lives they had little leisure for setting down the fruits of their

experience, and what advances they made in the healing art went unrecorded. I must refer here to one illustrious Tudor physician, perhaps the most lovable of them all.

John Clement, M.D. Oxon, was brought up in the household of Sir Thomas More, who said of him : " He is so proficient in Latin and Greek that I have great hopes of his becoming an ornament to his country and to literature." That aspiration was fulfilled. In 1519 Clement settled in Corpus Christi College, Oxford, having been appointed Wolsey's rhetoric reader in the University and later professor of Greek. More wrote to Erasmus :

" My Clement lectures at Oxford to an audience larger than has ever gathered to any other lecturer. It is astonishing how universal is the approbation and love he gains. Even those to whom classical literature was almost anathema attend his lectures and gradually modify their opposition. Linacre, who, as you know, never praises any one very much, admires him greatly, so that if I did not love Clement so much I should be almost tempted to envy the praise he wins."¹⁹

Clement's wife, and former pupil, Margaret Gigs, was deeply read both in Greek and medicine, and helped him in his work. He became F.R.C.P. in 1528, and in the following year was one of the physicians sent by Henry VIII to Wolsey when he lay ill at Esher after his fall from favour. In 1544 Clement was elected President of the College of Physicians. Constant like More in his attachment to the old faith, Clement retired to Louvain when Edward VI ascended the throne. He returned to England in Mary's reign, but the accession of Elizabeth drove him once more abroad. He died at Mechlin in 1572. His writings relate to classical studies, and he does not seem to have given the world the benefit of his medical knowledge.

The dividing line between physician and surgeon was not clearly drawn under the Tudors. By the Physicians' Act of 1540 (32 Hen. VIII) medicine was defined as comprehending surgery and gave the physicians the right to practise surgery when and where they liked. Some of the surgeons practised physic, although this was forbidden by an Act of 1543 which stated : " No common surgeons may administer medicine outward . . . for although the most parte of the said craft of surgeons have small coonning, yet they wouold take great soomes of money and doo little therefore ; and by reason thereof they doo oftentimes impaire and hurt theyre patients, rather then do them goode."

Caius, as we know, lectured on anatomy, and the Barber-Surgeons enlisted the services of good physicians to teach their members both anatomy and surgery. One of these was Richard Caldwell, M.D.Oxon, F.R.C.P., who, with Lord Lumley, founded a surgery lecture, the Lumleian Lectures. The Barber-Surgeons' Company, to whom this was first offered, failed to take advantage of it, and the lectureship then went to the Royal College of Physicians.

Other physicians practised obstetrics as well as physic. George Owen (d. 1558), M.D.Oxon, physician to Henry VIII, Edward VI and Mary, is said to have brought Edward VI into the world by performing Caesarean Section on his mother. Owen was President of the College of Physicians in 1553 and 1554, and was the author of a treatise entitled "A Meet diet for the New Ague set forth by Mr. Owen," Fol. Lond. 1558.

We must be mindful that the Tudor Age was one of transition. As Sir John Simon²⁰ has observed :

"Apothecary, surgeon, physician, each had a mark of his own : the first, his familiarity with the uses of worts and drugs ; the second, his skill for bleeding, bandaging, bone-setting and the like ; the third his book-learning, especially in the Greeks and Latins, and often his mastery of at least one occult science : but the apothecary was still a variety of grocer, the surgeon still a variety of barber, and the physician but just ceasing to be an ecclesiastic."

Under the influence of the Renaissance, Thomas Linacre organized physicians into a fraternity, promoted their education on the lines of Greek thought, and established English medicine as a scholarly and learned profession. He received much help from his illustrious medical contemporaries and immediate successors. The value of this achievement must be measured by its after-fruits rather than by its immediate results in the advance of medical knowledge, though these were by no means inconsiderable.

Revival of Surgery

Many physicians, as we have noted, were still ecclesiastics. So at first had been many of the medieval surgeons, particularly among the Benedictines, until the practice of surgery by the clergy was forbidden by the Council of Tours in 1163.

In 1279 a College of Surgeons, under the patronage of St. Cosmes and St. Damianus, known as the Collège de St. Côme, was founded by Pitard, who had accompanied St. Louis to Palestine as his surgeon. It attracted many pupils, and the corporations of surgeons in London and Edinburgh were modelled upon it.

But medieval surgery was based largely upon tradition, surgical writings were reproductions of the classical or Arabian authors, and it was not until the Renaissance that surgeons dared to employ independent observation and reflection.

Sir Hugh Lett,²¹ in a previous lecture, has shown how the study of anatomy was revived and freed from stereotyped beliefs by Andreas Vesalius (1514-1564) of Padua, how anatomy was studied and encouraged at Barber-Surgeons' Hall, and the contribution that Thomas Vicary made to this foundation of true surgery in his administration and teaching, and by his elementary textbook for apprentice-students entitled *A Profitable Treatise of the Anatomie of Man's Body*, which, unfortunately, was based upon the old treatises of Galen and others, and did not include the new teaching of Vesalius.

Vesalius's great work on anatomy was published at Basle in 1543, and as early as 1545 Thomas Gemini brought out a translation of Vesalius's *Epitome* entitled *Compendiosa totius Anatomie delineatio*, with copper-plate engravings copied from Van Calcar's woodcuts. It was dedicated to Henry VIII. In 1553 Gemini published an English translation of his Compendium made by Nicholas Udall, better known as the author of the first English comedy, *Ralph Roister Doister*. This manual was dedicated to Edward VI. The third edition in 1559 was dedicated to Queen Elizabeth.

There was also a new spirit abroad in surgery, which was first kindled on the Continent by P. Paracelsus (1493-1541) and by Ambroise Paré (1510-1590). Paracelsus was notable as a direct observer of disease processes, for example hospital gangrene and healing of wounds. His special surgical treatises are *Die Kleine Chirurgie* (1528) and *Die Grosse Wund-Arznei* (1536-1537). Paré's treatment of gunshot wounds by simple dressings instead of hot oil, and his use of the ligature for large arteries, thus rendering amputation possible on a more extensive scale, are well known.

Thomas Vicary's work in uniting the Corporation of Surgeons with the Barber-Surgeons, and in promoting the teaching of anatomy and surgery, led immediately to progress in British Surgery.

First, as students were well taught by experienced surgeons, operative surgery became much more dexterous and resourceful. This led on to further advances. In lithotomy, improvements were made in the use of the staff and other instruments. A "radical" cure of hernia superseded the application of the actual cautery, operation for stricture of the urethra was improved, plastic operations were done, and ophthalmic surgery was taken to some extent out of the hands of quacks. Trephining was largely practised, even for persistent migraine. Philip William, Prince of Orange, is said to have been trephined seventeen times.

One of the duties of a royal surgeon was to attend on the torture or maiming of a State prisoner who had been sentenced to such an ordeal. In the former case he had to see that the punishment was not prolonged to the danger of the victim's life ; in the latter he had to check haemorrhage and dress the mutilated stump. Probably Thomas Vicary attended when Sir Edmund Knyvet was adjudged to lose his right hand for striking the Master Clare of Norfolk, a servant of the Earl of Surrey, in the royal palace. It was a dread and solemn ceremony.

"The Sergeant Chirurgion came with his instruments ; the Sergeant of the Woodyard with mallet and block where the hand was to lie ; the King's Master Cook with the knife ; the Sergeant of the Larder to set the knife right on the joint ; the Sergeant Farrier with searing irons to sear the blood-vessels ; the Sergeant of the poultry with a cock to be killed on the same block with the same knife ; the Yeoman of the

Chandry with sear cloths ; the Yeoman of the Scullery with a pan of fire to heat the irons ; a chafer of water to cool the irons, and two forms for the officers to set their stuff on ; the Sergeant of the Cellar with wine, ale and beer ; and, lastly, the Yeoman of the Ewrie with a basin, ewer and towels."

As Sir Edmund laid his hand on the block, word was brought of the King's pardon. Kind-hearted Katherine Howard had pleaded with Henry VIII for remission of the punishment.²²

We may justifiably assume that the rejuvenating spirit of the Renaissance inspired many of Thomas Vicary's surgical contemporaries and successors. There was John Halle of Maidstone, no doubt a friend of Vicary, who on the instructions of the Barber-Surgeons' Company evicted quacks from that district by searching medical examinations. He wrote a book called *Historiall Expostulation against the Beastlie Abusers of Chirurgery and Physick in our Time*.

Thomas Gale (1507-1587), apprenticed to Richard Ferris, a distinguished Barber-Surgeon, at first served as an army surgeon with Henry VIII's troops at Montreuil. He removed the unqualified practitioners, who were decimating the English regiments, from the Service. Later he settled in London, and in 1561 became Master of the Barber-Surgeons. Two years later he published his *Certaine Works of Chirurgerie*. He advocated conservative surgery and attacked the envenomed theory of gunshot wounds. The "sure grounds" on which surgery was to be founded were that the student should be "lettered," "expert," "ingenious," "vertuous" and "well-maneryd." Treatment was not to be done solely for "lucre or gayne's sake," though this did not exclude "an honest and competent reward."

Thomas Gale succeeded Thomas Vicary as lecturer at Barber-Surgeons' Hall, and was in his turn succeeded by William Clowes. The latter was Surgeon to Queen Elizabeth and on the staff of St. Bartholomew's Hospital. Born about 1540, he served first as an army surgeon in the Earl of Warwick's army at Le Havre, and later as a naval surgeon in the victory over the Armada. He first wrote on *De Morbo Gallico* (1579). In spite of its Latin title, it was written in English. He also wrote on tuberculous affections of the skin, affirming the efficacy of the royal touch for cases not responding to ordinary treatment. He recorded his long experience and many interesting cases in his *Prooved Practice for all Young Chirurgians*. Clowes was rough of speech and free with his hands. In 1577 he was hauled up before the Court of Barber-Surgeons for fighting in the fields with George Baker, another royal surgeon, and was pardoned.

The Company of Barber-Surgeons undoubtedly raised the study and practice of surgery to a high level, organized professional teaching and standards, raised the social status and general education of the surgeon, and opened a new era in observation and treatment of surgical maladies.

Here the highest meed of praise is due to Thomas Vicary and his followers, Thomas Gale and William Clowes.

CONCLUSION

For an hour we have gone back together to the England of the sixteenth century and have tried to realize the times in which Thomas Vicary lived. We have seen his royal patients, bluff King Hal, the consumptive boy King Edward, the sallow-faced tragic Queen Mary and the red-haired, be-ruffed, resplendent Queen Elizabeth, with "the body of a weak, feeble woman ; but having the heart and stomach of a king—and of a King of England, too." We have met in Thomas Vicary's company the men he knew and who influenced him, the scholarly Linacre, the learned Erasmus, Dean Colet, Sir Thomas More, the saint and martyr, Sir Thomas Eylot and facetious Andrew Boorde, Sir William Butts and other Tudor physicians ; and the surgeons, Thomas Gale and William Clowes ; all like Vicary inspired by the Renaissance and who laboured together to improve education, medicine, surgery and public health so as to leave their country a better place than they found it.

At Vicary's side, in imagination, we have trudged through the ill-paved streets under the overhanging gables of the houses. We have witnessed the ravages wrought by the plague and the sweating sickness. We have gone into the country, visited the pleasant manor-houses, strolled in the flower gardens and seen something of the rural sports, the feasting, the jousting and the maskers and morris-dancers. We have marked the changes brought about by the dissolution of the monasteries, the struggle to maintain the hospitals of London and the Colleges of Oxford and Cambridge, and noted the poverty and destitution which existed side by side with profusion and extravagance in high places. We have passed from medieval times into the Elizabethan Age. As Froude said : " Now it is all gone—like an unsubstantial pageant faded ; and between us and the old English there lies a gulf of mystery which the prose of the historian will never adequately bridge."

Thomas Vicary lived like us in a state of transition, a time of unrest and of social upheaval, when old men dreamed dreams and young men saw visions. It was, as I have endeavoured to show, in medicine, surgery and public health, not a time of building but of laying foundations well and truly on which a future edifice was to arise ; not a time of harvest but a time in which the seeds of knowledge were sown. Linacre organized medicine and Vicary established surgery as learned professions. They thus opened the doors to the light of the Renaissance, brushed aside the cobwebs of the schoolmen, taught the value of independent thought, experiment and observation and rendered possible the epoch-making discovery of William Harvey, the investigations of John Hunter and the triumphs of medical research which continue up to the present day. Equally, we have traced the beginnings of social medicine and public health in the enlightened writings of Sir Thomas More and his administration.

SIR ARTHUR MACNALTY

For all this we honour the Oxford humanists and Thomas Vicary to-day. Each in our own way, whether our gifts be great or small, must follow the high aims the Tudor pioneers set before us to maintain health, to prevent and cure disease and to improve the lot of man.

“ Let knowledge grow from more to more ;
But more of reverence in us dwell ;
That mind and soul according well,
May make one music as before.”

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