Medicine

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The story of disease and healing in the Maltese Islands begins with the earliest inhabitants of Malta and Gozo about 3600 to 2500 B.C.

The most ancient remains of medico-cultural interest have been found in the Stone Age temples of Mnajdra, Ħaġar Qim and Tarxien. The sick resorted to these shrines to implore the deity to restore them to health. By way of thanksgiving for recovery from their illness they were in the habit of depositing in these temples small "ex-votos" of pottery in the shape of the diseased parts of their body: there are examples of a swollen face and foot, and a torso with a prominent abdomen.

That these temples were associated with the healing art is also shown by the figure of the serpent which, since very early times, has symbolised the practice of medicine in the ancient Near East, Egypt and Greece. Pottery objects showing two intertwined coils come from Mnajdra while in the temple of Ġgantija in the neighbouring island of Gozo the figure of a serpent-like creature is carved on a large block of stone.

The underground temple at Ħal Saflieni – known as the Hypogeum and also belonging to the Stone Age period – has furnished us with two statuettes each representing a sleeping woman on a sort of couch. These statuettes are reminiscent of the rite of incubation by which the patient was put to sleep by the priest to have the line of treatment to be followed inspired by the god while the patient was in the hypnotic state.

With the advent of the Phoenicians to Malta about 800 B.C. the god Exmun was honoured as the protector of the sick.

During the Roman period, which begins with the capture of the Maltese Islands from the Carthaginians in 218 B.C., we come across more tangible evidence of the medical art among us such as feeding bottles of baked clay for babies and invalids; a large stone slab used for plugging the entrance of a Roman burial chamber in a catacomb at Rabat (Malta) bearing carvings of surgical instruments including a vaginal speculum, forceps and cupping vessel; the provision of a supply of running water for domestic purposes; the presence of heating arrangements in Roman houses; and the existence of toilet sets made of stone with a notch on their front edges at the public baths at Għajn Tuffieħa – a design anticipating the modern U-shaped lavatory seat.

The most outstanding medical event of Roman rule was the shipwreck on the Island of Malta in 60 A.D. of St Paul and his companions among whom was the physician Luke. This evangelist is the first medical man known to have come to Malta. His Acts constitute the earliest written document known to us dealing with the presence of disease and its treatment in Malta.

Practically no records relative to the years that followed the fall of the Roman Empire have survived in our islands except two – both of which are of a funereal character. One is a tombstone in Greek testifying to the presence of a Christian physician, named Domesticus, who was buried in the vicinity of Mdina which was

then the capital city and citadel of Malta. The inscription is difficult to date but it is likely that it belongs to the period from the third to the fifth century A.D.

The other record consists of a series of stone slabs from a cemetery in Gozo bearing the armorial crests of church dignitaries and noblemen who were taking part in the crusade of 1270 against Tunis and who are believed to have died of plague in Gozo on their way to the North African coast.

Plague has been one of the scourges of seafarers in the Mediterranean since the early Middle Ages; hence the establishment by maritime communities of quarantine measures which were already in existence in Malta by 1458. Among the penalties laid down against breaches of the quarantine laws was the burning of merchandise and also of the homes of offenders to ensure the elimination of the fomites of the disease as then understood.

Not far from Mdina was the hospital of *Santo Spirito* which according to legend was founded by St Francis of Assisi on his way to Africa in 1220. Although this tradition remains unsupported by documentary sources, there is evidence that the hospital was already in existence in 1372 when it was under the direction of a Franciscan Friar of the Order of the Minor Conventuals who came to Malta in that year. In 1575 it was described as consisting of a small church containing only four beds in each of which two patients were placed in accordance with the usage of the time.

Besides the sick, this hospital also received foundlings: for this purpose it had a contrivance called *rota* which was a cot revolving on a vertical axis that communicated with the outside of the hospital by means of a small window through which the unwanted baby was deposited inside the cot.

The hospital building was enlarged in subsequent years and its bed complement increased considerably. It continued to function uninterruptedly as a hospital until 1967 when it was closed down by the government for reasons of economy. Until then it could boast of a continuous history of over six hundred years and claim to be one of the oldest surviving hospitals in Europe.

A new phase in the medical and cultural history of Malta begins with the granting of our islands as a fief to the Knights Hospitallers of the Order of St John of Jerusalem in 1530 by the Emperor Charles the Fifth but our association with this band of autocratic rulers opens rather sadly. In the midst of these political changes we come across the earliest Maltese physician on record. He is Giuseppe Callus who was born in the early years of the sixteenth century. He was already in practice in 1530 and had served in a medical capacity in the naval service of the Order of St John on board of the *Sant'Anna* and later as a District Medical Officer at Mdina.

On taking possession of Malta, the Order of St John had solemnly declared to respect the political and other liberties of the Maltese but Grand Master Jean de la Vallette soon forgot this promise and took the imposition of taxes into his own hands. A group of discontented citizens decided to appeal secretly to Philip II, King of Spain, but their petition fell into the hands of the Grand Master instead of reaching the King. Dr Giuseppe Callus is said to have been the author of the document meant for the King. He was arrested and condemned to death, his execution taking place at Rabat in 1561.

The Order of St John had its origin in Jerusalem about the mid-eleventh century with the aim of nursing those pilgrims that fell ill during their journeys to the Holy Sepulchre. Hence their name of Hospitallers. In later years they developed into a military and naval power as they had to defend themselves and their patients from the attacks of the harassing Moslems.

On coming to Malta one of their first acts was to found a hospital at Birgu, the maritime city where they had initially settled. This hospital was later transferred

to Valletta in 1574. It was known as the Holy Infirmary and there the knights, and at times even the Grand Master, served the sick in person in silver plate. This hospital was exclusively reserved for men, the sick being classified into medical and surgical cases and housed in separate wards according to the nature of their illness.

The Holy Infirmary had its own pharmacy. An early mention of this pharmacy (*apotheca*), with sleeping accommodation for the apothecary (*aromatarius*), occurs in 1587. Drugs and medicaments were imported from Sicily (Palermo, Messina), Italy (Naples, Venice, Leghorn, Florence), France (Marseilles) and Spain (Madrid, Cadiz), the purchases being made by the Order's agents (*ricevitori*) in these places.

Among the pharmaceutical manuals consulted by the apothecary in the compounding of medicaments were the Italian versions of M. Macquer's *Elements de Chymie Theorique* (Paris, 1753) and the *Elements de Chymie Pratique* (Paris, 1756).

Laboratory equipment, such as glass retorts, flasks and alembics were imported from the places already mentioned. No specimens of these utensils have survived apart from a large bronze mortar with the coat-of-arms of Grand Master Ramon Perellos moulded on it. The date 1710 is near its base.

The pharmacy of the Holy Infirmary was renowned for the beauty and variety of its maiolica drug jars and pots, some of which were decorated with the armorial bearings of the Grand Masters Alofius Wignacourt (1601-22) and Ramon Perellos y Roccaful (1697-1720). Most of this ware is of the Caltagirone type.

Near the Holy Infirmary at Valletta was another hospital reserved for women, while a district medical and nursing domiciliary service was set up in the towns for the benefit of sick women who could not be admitted into hospital.

At the Holy Infirmary, Grand Master Nicolas Cotoner founded the School of Anatomy and Surgery in 1676. From this origin has evolved our present Medical School which was later incorporated with the University of Malta when this institution was established by Grand Master Emanuel Pinto de Fonceca in 1769.

At the School of Anatomy and Surgery the greatest importance was attached to the performance of human dissection and of post-mortem examinations for teaching purposes so much so that to provide the necessary material it was decreed in 1739 that the corpses of knights and of laymen dying in the Infirmary were to be made over to the teacher of anatomy.

One of the famous Maltese surgeons who worked and taught at the School of Anatomy and Surgery was Michel'Angelo Grima (1731-1798). He was a contemporary of the renowned English surgeon John Hunter and like the latter received some of his surgical experience on the battle field during the Seven Years War of 1756-63, though the two surgeons were on opposite sides. Grima recorded some of his war cases in his book on traumatic surgery (*Della medicina traumatica*, Florence, 1773). He promoted the spiral suture of the intestine after resection of this organ and experimented successfully on the removal of the spleen in dogs. He also published the results of his work on the *contre-coup* phenomenon of head injuries and on popliteal aneurysm, the latter being published in London in 1773.

Grima was also one of the members of a commission appointed by the Grand Master to investigate the claims of mesmerism as advocated by Franz Anton Mesmer (1734-1815), an Austrian physician, in October 1783. It is significant that this commission reported adversely on this method of therapy several months before the French Royal Commission of King Louis XVI issued its condemnation of mesmerism.

Another prominent Maltese surgeon, whose name is still alive on the continent of Europe, was Joseph Barth (1745-1818). He was born at Valletta and began his

studies at the Holy Infirmary but later went to Vienna where he studied eye diseases and became the oculist of the Empress Maria Theresa. In the Austrian capital he occupied the Chair of Ophthalmology at the University of Vienna – this Chair being purposely founded for him in 1773 by the Empress in recognition of his professional services to her son, later Joseph II. Barth died in Vienna in 1818.

At the Holy Infirmary of Valletta there was a School of Pharmacy apart from the School of Anatomy and Surgery already considered. It is not known when the School of Pharmacy was founded but it is likely that it was set up in 1676 in conjunction with the School of Anatomy and Surgery. In 1690 a botanical garden of medicinal herbs was planted in the ditch of Fort St Elmo – very close to the Holy Infirmary – for the practical instruction of the pharmacy students. By the following century the Pharmacy School had made considerable progress and in 1729 rules and regulations were laid down concerning the curriculum that had to be followed to qualify as a pharmacist.

One of the aims of the School of Anatomy and Surgery was the training of surgeons for service afloat on board the galleys of the Order of St John that often engaged Moslem ships in mortal combat. Some of these galleys had a crew of some three hundred men including knights, sailors, soldiers and slaves to man the oars. To look after the health of this mass of men there was a physician, a surgeon and a number of barber-surgeons, the latter being entrusted with such duties as blood letting, application of dry cupping and teeth extractions.

The fear of bubonic plague – a disease then rampant in the ports of the Mediterranean and the Middle East – had induced the Order of St John to device sanitary means to guard against the introduction of pestilence into the Maltese Islands by contaminated ships. Those suspected of carrying the plague were kept for a period of observation and isolation in Marsamxett or Quarantine Harbour before the crew and merchandise were allowed ashore. Severe punishments – including the death penalty – were laid down for transgressors of the quarantine laws. Soldiers guarding ships in quarantine had orders to shoot any sailor who tried to leave his ship as well as any inhabitant who attempted to communicate with ships detained in quarantine. These measures may, today, seem to be unduly harsh but it must be remembered that in those times there was no medical means of combating plague so that once this disease had gained a foothold on the island it caused not only an extensive mortality but also a wholesale disorganization of the social and economic state of the country as happened, for example, during the epidemics of 1592 and 1675-76.

During the first two months of the outbreak of 1592 some five hundred persons lost their lives but the worst feature of the epidemic was the famine that followed in its wake as Sicily and other Mediterranean ports were so terrified of catching the pestilence from Malta that they refused to trade with the island. Thus the Maltese found themselves cut off from all sources of food supplies so much so that the Grand Master was compelled to order his galleys to leave harbour and seize foreign ships laden with corn and bring them to Maltese ports.

The epidemic dragged on for a whole year killing three thousand persons out of a population of twenty-seven thousand.

The pestilence of 1675-76 was even more distressing. It began in Valletta and soon spread to other areas. The mortality at Tarxien and Birgu was so great that there were not enough men to bury the dead. The outbreak lasted nine months with a loss of eight thousand to eleven thousand souls among whom were twenty-six physicians and surgeons.

From these two epidemics originated in our island the devotion to the saints protectors against the plague Saint Roque and Saint Sebastian. Chapels and altars

were dedicated to them by the survivors who also erected statutes, by way of thanksgiving, on the fronts of houses and at street corners of towns and villages, many of which are still extant.

Following the expulsion of the Order of St John from Malta and the occupation of the Maltese Islands by Napoleon Bonaparte in 1798, the Holy Infirmary of Valletta was taken over by the French for their sick troops.

The civilian patients were transferred from the Holy Infirmary to the nearby monastery and Church of St Mary Magdalen. As the monastery was not large enough to accommodate all the sick, the church was adapted as a ward for surgical cases and its choir as a pharmacy.

When the French evacuated Malta in 1800 this Civil Hospital, as it was called, remained in use for many years as the erstwhile Holy Infirmary passed into the hands of the British military authorities for their own soldiers, and continued to function as a Garrison or Station Hospital until 1920 when a new military hospital was built at Mtarfa.

The Civil Hospital at Valletta showed itself to be ill-adapted for the adequate care of the sick and in 1850 was replaced by the Central Hospital set up at Floriana.

The Quarantine System devised by the Order of St John was retained and strictly applied under British rule as it not only safeguarded the public health of the Maltese Islands but also provided a protective barrier for European ports on the Mediterranean coastline. In fact large quantities of goods thought to be liable to harbour the "contagion" of plague were landed at the Lazzaretto on Manoel Island to undergo a period of quarantine before they were shipped to the ports of Livorno, Marseilles and Algiers to reach European and North African markets.

The aetiology of plague – the chain of causation and transmission formed by a germ, a rat and a flea – was still unknown. The accepted epidemiological concept of the time still blamed personal contact and "contaminated" clothing and paper as the means of catching plague. In practice this way of thinking meant the isolation of travellers and crews at the Lazzaretto.

The Lazzaretto was a complex of buildings that had its origin in 1643 on Manoel Island away from inhabited areas. Here the traveller was kept under observation for any manifestation of plague under the custody of Health Guards.

Merchandise was "purified" by being unpacked and exposed to the air for "ventilation" – a time-consuming process that sometimes took as many as eighty days to perform.

Heavily infected ships were burned with all their rigging and fittings. The seamen on board were shaved of all their hair and plunged repeatedly into the sea before being admitted to the Lazzaretto.

An essential function of the quarantine set-up was the "smoking" or "fumigation" of letters from abroad as it was believed that paper could carry the "contagion" of plague. The process was carried out by an *ad hoc* employee known as the *profumatore* (literally the "perfumer").

Before being "smoked", the letters were not touched by hand but were held by means of a pair of pincers and incised by a scalpel or chisel in two places to ensure that the fumes of the "perfume" penetrated inside them. They were then placed over a grille inside a cabinet over a stove and exposed to the fumes of burning straw and aromatic herbs for half an hour.

Paper, as a carrier of plague, was so much feared that during the epidemic of 1813 it was avoided completely for the purpose of correspondence and drawing up a will, so much so that such documents were written on wood – a material that was not considered to be susceptible to convey the plague.

Intellectual and cultural developments in Malta have for centuries reflected the evolution of ideas and events in Europe.

It was inevitable, therefore, that Maltese medicine should share the same direction of progress in its growth and ultimate pattern.

Italian influence was a major formative force in moulding medical thought and practice in Malta. This was due not only to our geographical proximity to Sicily and southern Italy but also to our political links with these countries since the Norman Count, Roger of Hauteville, occupied Malta in 1090 following his conquest of Sicily.

One of these Sicilian links is associated with the earliest known hospital to be established in Malta in the fourteenth century; when set up at Rabat under the name of St Francis Hospital (later changed to *Santo Spirito* Hospital) this was placed under the Rectorship of a Minor Conventual Friar from Palermo, Fra Nicolò Papalla (1347).

In the following century the Jews formed an important element of the Maltese community, then based at Mdina, with very close contacts with the Jews of Sicily. In Malta, Jews appear to have monopolised the exercise of medicine and surgery after obtaining their licence to practice at Palermo and Randazzo.

With the granting of the Maltese Islands the Order of St John in 1530, Italian and Sicilian physicians, surgeons and pharmacists were employed in the medical services of the Order. In times of a sanitary crisis, medical "experts" were purposely engaged from Sicily. Thus during the plague of 1592-93 Dr Pietro Parisi was sent from Trapani to Malta by the Viceroy of Sicily to endeavour to check the progress of the malady. Another "expert", this time from Messina, Dr Domenico Bottone, was brought over to treat Grand Master Raymon Perellos who was suffering from a "rheumatic fever". Bottone later published an account of the Grand Master's illness in 1712.

The early Chief Government Medical Officers or *protomedici*, who occupied the highest post in the medical hierarchy of the island, were Italians. Whenever doubts arose regarding the application of rules of conduct in medical practice they were to be decided in accordance with the regulations issued by the Sicilian *protomedico*.

For many years before the foundation of the Malta University in 1769, Maltese youths who wished to follow a medical career proceeded to study and graduate in the universities of Salerno, Florence and Bologna; others went to Rome and Palermo to train in pharmacy.

Dissection of the cadaver, as part of the teaching of anatomy, was introduced in 1723 by the Italian Grand Master Marcantonio Zondadari who sponsored the young Maltese surgeon, Gabriele Henin, to study anatomy and surgery at the Hospital of Santa Maria Nuova in Florence. In 1750 another surgeon, Michel'Angelo Grima, trained at the same hospital where, during a stay of eight years, he carried out animal experiments on the removal of the spleen and on intestinal suture.

Italian was the language of literary and scientific culture among professional people in eighteenth century Malta. At the university, lectures were delivered in Italian and the graduation ceremony at the end of the various courses was based on that of the University of Bologna.

When surgeon M.A. Grima, who was lecturer in anatomy and surgery at the Holy Infirmary, published his treatise on traumatic surgery and a textbook on anatomy for his students he wrote them in Italian. Even as late as the nineteenth century the medium of communication of the first medical journals to be published in Malta, such as *L'Ape Melitense* (1838), *Il Barth* (1871) and *La Rivista Medica* (1890) was Italian.

Italian medical influence began to decline at the beginning of the twentieth century owing to the increasing British impact that reached its peak with the outbreak of World War II (1939-45). Italian, as a cultural medium, was replaced by the English language and by the British pattern of medical thought and practice

with the consequent break of the past medico-cultural links between Malta and Italy.

France, like Italy, played a beneficial role in medical developments in Malta especially during the seventeenth and eighteenth centuries. The most distinctive French imprints that left their mark on our medico-cultural past were: – (a) the presence in the island of French physicians and surgeons; (b) the education and training of Maltese medical men in France; (c) seeking medical advice and obtaining hospital supplies; (d) the diffusion of French medical literature among Maltese practitioners and (e) the persistence of medical links in the nineteenth and twentieth centuries.

It is of interest to note that when the Order of St John came to Malta in 1530, it was a French Grand Master – Fra Philip Villiers de L'Isle Adam – who laid the foundation stone of their first hospital to be erected in the island i.e. the Holy Infirmary at Birgu. It was also during the rule of another French Grand Master – Fra Jean Levesque de La Cassiere – that the building of a new Holy Infirmary was commenced at Valletta in 1574.

The highest official in the hierarchy of the Order that presided over the administration of the Holy Infirmary was the Head of the French Langue who bore the title of Grand Hospitaller. Under him was the Infirmarian, who was also a French knight, and who was responsible for the day-to-day running of the Infirmary.

It has been observed that during the seventeenth and eighteenth centuries Malta became politically, though not legally, a French dependence in the sense that more than half the knights in the island were French and that a substantial amount of the Order's revenues were derived from its possession in France. The weight of this French influence became even more manifest in the social and cultural life of Malta following the accession to the Grand Mastership of Fra Emmanuel de Rohan in 1775.

In the medical field this French bias exerted a decidedly profound impact when the Order sought and obtained the professional services of a nucleus of French physicians and surgeons for the care of the sick in Malta particularly in times of some medical emergency as happened during the bubonic plague of 1675-76 when a French physician from Marseilles was engaged by the Order to treat the plague-stricken.

Concurrently with the policy of employing French practitioners, the Order endeavoured to form its own Maltese medical and surgical personnel by training Maltese youths in France. The physicians-to-be proceeded to Montpellier and the budding surgeons to Paris. They received financial assistance from the Order and were placed under the protection of some highly placed person to ensure that the trainee was attached to the best teachers available. In the case of surgeons emphasis was laid on such specific surgical procedures as the removal of stones from the urinary bladder and operations for cataract.

The following physicians and surgeons were trained in France: – (a) Joseph Cossaeus, probably the Latin rendering of Cassia or Cossai or Casha (1636); (b) Giorgio Imbert who wrote a Latin treatise on melancholia published in Montpellier in 1723. He served at the Holy Infirmary of Valletta and the Order's navy and eventually became *protomedico* or Chief Government Medical Officer; (c) Gaetano Azzopardi (1734); (d) Gaetano Delicata (c.1734); (e) Giuseppe Demarco (1742), the author of several publications in Latin; (f) Giorgio Locano (1749) who was appointed Professor of Medicine at our university (1771) and (g) Salvatore Bernard (1724-1806) who graduated at the University of Aix-en-Provence (1749).

Among the surgeons mention may be made of (a) Giuseppe Grillet (c.1709); (b) Antonio Grillet (1704); (c) Giuseppe Farrugia (1754); (d) Michel'Angelo Grima (1758) who after spending three years in Paris joined the French army as surgeon

during the Seven Years War (1756-63). As a result of his war experiences he published a book on the surgery of wounds in 1773. In teaching this subject he followed the methods of his French contemporary Antoine Louis, the Physician-in-Chief of France.

Apart from the training of Maltese doctors and surgeons in France, French medical thought and practice reached Malta through a stream of medical literature in the form of books and the printed proceedings of the *Academie de Chirurgie* of Paris and by means of publications in the libraries set up by two French knights – Joseph De Saint Jay and the Bailly de Tencin – who donated their books to the Public Library in 1714 and 1756 thus rendering this literature available for perusal to members of the profession.

Thanks to this French influence, Malta could boast of a fair-sized group of Maltese professional men who were highly competent to impart medical knowledge to their students and to provide treatment on the French model and, therefore, of the highest European standards to the sick.

Relations between Malta and France became strained following the French Revolution which despoiled the Order of its estates in France with consequent loss of revenues. Five years later *General en Chef* Napoleon Bonaparte captured Malta from the Knights of St John. The French eventually departed from the island in 1800 when Malta passed under British rule with the consequence that the current of medical thought and influence veered mainly towards Edinburgh and London. In spite of this turning point, however, a number of Maltese practitioners continued to seek in France the opportunities to advance their academic medical status and enrich their therapeutic experience.

The French lead was reflected especially in the management of the mentally sick. Thus when Dr Thomas Chetcuti (1797-1863) was appointed Director of the Mental Asylum in 1838, he made it a point to visit institutions not only in Italy and Great Britain but also in France. He returned to Malta imbued with the spirit of the humanitarian reforms of Philippe Pinel (1754-1826) carried out at the Bicetre Asylum. Like Pinel, Chetcuti liberated disturbed mental patients from the chains with which they were restrained. In diagnosing mental illness he adopted the classification of the French psychiatrist Jean Etienne Dominique Esquirol (1772-1840) and, in accordance with the tenets of two other French pioneers in the mental field – E.J. Georget (1795-1828) and William Ferrus (1784-1861) – who stressed the importance of the concept of occupational therapy as an integral element in the management of psychiatric illness.

The French imprint of nineteenth century advances in the areas of general medicine, surgery and neurology was spread in Malta by Dr Gavino Gulia (1835-1889) by means of his medical journal *Il Barth* (1871-77) especially in connection with the investigations of Louis Pasteur (1822-95) in the new field of bacteriology.

One of the last outstanding links with French medicine was forged by Dr. (later Sir) Themistocles Zammit (1864-1935) – the discoverer of the germ of brucellosis in the blood of the goat in 1905 – who in 1891 went to Paris to widen his knowledge of laboratory procedures. There he met Louis Pasteur whom Zammit ardently admired till the end of his life.

At the time of the centenary celebrations of the birth of Pasteur by our university on the 22nd January 1923, Sir Temi Zammit was the Rector of that institution. When, on the 17th October of the same year the *Camera Medica*, representing the Maltese medical profession, presented a bronze bust of the French scientist to the University this gift was very appropriately received by Sir T. Zammit. That bust is displayed at the Medical School as a reminder of Malta's past medical bond with France.

The dawn of the nineteenth century stands out as a turning point in Maltese

history – politically and culturally. On the 5th September 1800 the Maltese Islands came under the protection of King George III and in 1814 passed in full sovereignty to His Britannic Majesty. Thanks to these events Maltese medicine came in close touch with British medical thought and experience. This contact occurred mainly through the physicians and surgeons attached to the British Navy and Army stationed in the island.

The earliest instance concerned the prevention of smallpox which was prevalent in Malta in the late eighteenth century. Protective vaccination against this illness had been discovered in England by the general practitioner Edward Jenner in 1798 and the British Government took steps in 1800 to promote vaccination among its naval and military forces overseas including Malta.

Dr Joseph Marshall and Dr John Walker were sent as vaccinators to the British Fleet in the Mediterranean. Dr Walker eventually went to Egypt but Dr Marshall remained in Malta to introduce vaccination among Maltese practitioners. The first doctors to be initiated in its use were Dr Lorenzo Cassar, the personal physician of Sir Alexander Ball (the British Royal Commissioner) and Dr Aloysio Caruana, the Chief Government Medical Officer. Because of the indifference of the people to avail themselves of this preventive measure, vaccination was made compulsory in 1855.

Malta derived other benefits from the presence in our island of several British doctors who took interest, and recorded their observations, in the medical and natural history of Malta. Among these was Dr F.F. Sankey who put Malta on the map of medicine in two ways – by directing the attention of British physicians in the island's assets as a winter resort for invalids from Britain and by publishing in Malta in 1846 what appears to be one of the earliest – if not the earliest – First Aid books to be printed. In this short work he enunciated three maxima forming a sound guide line for the medical profession world wide and which are still valid today i.e. (a) One must not expect to find in an individual patient all the signs and symptoms of disease as set down in books; (b) when prescribing medicines one must be prepared to be disappointed with their effects; and (c) drugs may be looked upon as poisons which do not always arrest disease and which may cause other complaints in addition to the ones they are given to cure.

Another British physician who left his legacy to Maltese patients was Dr John Davy (1790-1868) who spent seven years in Malta on the army medical staff and who was the moving spirit behind the creation of the first public dispensary at the Auberge d'Italie in Valletta for the out-patient treatment of the needy poor. This is how the present Government polyclinics – until a few years ago known as *il-berġa* – originated. Davy has also left his imprint as the practitioner who treated two distinguished visitors to Malta i.e. Sir Walter Scott (1831) and the Rev. (later Cardinal) John Henry Newman (1838).

An initial attempt to form a non-private medical library in Malta goes back to 1687 when Dr Fra Giuseppe Zammit, the first Director and Lecturer at the School of Anatomy and Surgery at the Holy Infirmary, donated his personal collection of medical books to the Infirmary for the use of its professional staff. With the passage of time these books ceased to be of practical value as they became outdated.

The next effort to found a medical library occurred in 1824 when a British benefactor – the Hon John Hookham Frere (1769-1846) – who had settled in Malta in 1821 – was appointed Chairman of the University Council. In 1833-4 he donated thirty-three works on medicine, surgery and allied subjects to the university for the use of medical students. The title-page of each volume carries his *dedit* and autograph.

These books were written by the established medical authorities of the time

who dominated the contemporary and therapeutic fields and who represented the leading minds of continental universities and of the medical schools of Edinburgh and of Glasgow and the London teaching hospitals of St Bartholomew and of St George.

This collection, now of historical interest, is on show at the Medical School as the John Hookham Frere Memorial Medical Library set up in 1985 to remind students of the origins of the medical library of today.

Two early advantageous developments that resulted from the British connection were the re-establishment of the University, that had been abolished by the French in 1798 on the 6th November 1800; and the appointment of Dr Cleardo Naudi (1780-1837) to the Chair of Experimental Chemistry and Natural History (1805).

In April 1812, Dr Naudi was sent to London by the government to acquaint himself with the running of the schools of medicine and of the hospitals of that city. During his twentyone months stay there he followed lectures in medicine, surgery and chemistry at St Thomas's and at Guy's Hospitals and attended courses in midwifery, dentistry and eye diseases. He returned to Malta enriched with a representative range of British medicine which formed the basis of his lectures to students.

By the early decades of the nineteenth century Maltese young men went to the United Kingdom to pursue their medical studies. The first to qualify there were Dr Vincent Dionysius Portelli (1834) and Dr Salvatore Luigi Pisani (1853). The latter volunteered, with other Maltese doctors, to serve in a medical capacity with the British Army during the Crimean War and had the honour of working with Miss Florence Nightingale who spoke very highly of his surgical skill.

This, however, was not a one-way current; indeed there was a time – between 1826 and 1886 – when no fewer than twelve British physicians obtained a doctorate from the Malta Medical School. Most of them were serving in the British Navy but others belonged to British families residing in Malta.

In April 1813 plague again invaded the island disrupting commerce, agriculture and social life. As no one knew what caused the disease and how the illness passed from one individual to another no really efficacious preventive measures could be taken against the malady which spread over the island in spite of the quarantine precautions enforced by the health authorities.

The plague-stricken were isolated at the Lazzaretto but owing to the great incidence of cases this establishment could no longer cope with the great number of patients brought to it. To provide the necessary accommodation, wooden huts were built to shelter the sick in the ditches outside Porta Reale and Portes des Bombes. The Bishop of Malta, Francesco Saverio Caruana, used to visit the patients in these places and administer the sacraments.

So many attendants on the sick and other public employees died that ultimately the government had to press convicts into the service to clear houses of corpses, to drive the dead cart and to bury the dead. But the convicts, too, were wiped out by the disease. They were replaced by fifty prisoners brought from Sicily but these also were mowed down.

The epidemic came to an end in September 1814 after carrying off four thousand six hundred persons out of a population of one hundred thousand.

Twenty-four years later a new enemy reared its head. This was the dreaded cholera. Of the eight cholera epidemics that visited Malta over a period of seventy-four years i.e. from 1837 to 1911 that of 1865 claims our attention. It was then held that cholera was transmitted from one place to another by means of infected air. Dr Antonio Ghio, the Chief Government Medical Officer of the time, thought otherwise. He felt convinced, from his observations, that the disease was not

spread by the atmosphere but by a microbe that passed from one person to another. To appreciate the great significance of Dr Ghio's idea one must recall that the concept that certain diseases were due to microbes was still quite new to medical science. In fact the cholera germ was discovered twenty years later by the German researcher Robert Koch when Dr Ghio was still living and thus had the satisfaction of knowing that the new science of bacteriology had proved him right.

Although the nineteenth century was often darkened by the tragedy of epidemic illness, it was also a period of achievement and developments in Malta's medical services.

In 1832 the British Navy established a hospital for its seamen on the site of an old villa, that had belonged to the Knight of St John Giovanni Bichi, on the headland between Kalkara Creek and Rinella Bay in the Grand Harbour. This hospital, which was known as Bichi Hospital until its closure in 1970, played a very conspicuous role in Malta's medical history as it was the scene of the first surgical operation to be carried out under ether anaesthesia in Malta. This occurred in March 1847 barely three months after the administration of the first anaesthetic to be given in a London Hospital. The anaesthetist at Bichi Hospital was the naval surgeon Dr (later Sir) Thomas Spencer Wells. Dr Wells showed the apparatus – and how to use it – to his Maltese colleagues and even demonstrated the effects of ether inhalation on two Maltese doctors who volunteered to submit to the experiment which was attended with success. Dr Thomas Spencer Wells eventually left the navy and settled in London where he gained a world-wide renown as a surgeon.

Up to one hundred years ago many of the Maltese midwives and hospital attendants were illiterate and uncouth folk with no background of organised training in midwifery and nursing. The Comptroller of Charitable Institutions, Sir Ferdinand V. Inglott, who was responsible for the administration of our hospital services, had been insisting with government to tackle this problem. He had even entered into a correspondence on the subject with Florence Nightingale who had organised the nursing service in the Crimea during the war of 1854-56 and who was afterwards responsible for the foundation of nursing education and training in England.

A course for the training of midwives was eventually begun in 1869 by Professor Salvatore Luigi Pisani who published a book in Maltese for the use of his student-midwives.

Instruction of hospital nurses was pioneered in 1882 by Dr Teodoro Bonnici when he was a Resident Junior surgeon at the Central Hospital at Floriana.

From these small beginnings has gradually evolved the St Luke' School for Nurses (1938) now forming part of the Institute for Health Care attached to the University of Malta.

Substantial progress was registered in the area of public health with the enactment of appropriate legislation for the provision of a wholesome water supply, the laying down of a drainage system, the prevention of the introduction and spread of communicable diseases and the abolition of burials inside churches.

The highlight of the nineteenth century was the discovery in the human spleen of the causative germ of Brucellosis, then known as Malta or Mediterranean or Undulant Fever, by the British Army surgeon (later Sir) David Bruce with the help of the Maltese laboratory worker Dr Giuseppe Caruana Scicluna (1853-1921). Bruce published his results in 1887 from the Station Hospital of Valletta, the former Holy Infirmary of the Knights of St John.

The source of the germ – then called *Micrococcus melitensis vel Brucii* – and how it invaded the human body was unknown and, therefore, no preventive measures against the illness could be

devised. The number of cases per year among the Maltese was 3.2 per thousand of the population. The British army and navy were equally interested in controlling the disease as, through its prolonged course and high invaliding rate, this fever was seriously undermining the strength of the twenty-five thousand soldiers and sailors of the Mediterranean garrison.

The British military authorities finally took action as the incidence of the fever reached alarming figures among the garrison. The Royal Society, at the request of the Admiralty, War Office and the Colonial Office undertook its investigation and sent out a joint commission to Malta for that purpose representing the army, navy and the Malta Civil government. The commission, of which David Bruce and Themistocles Zammit formed part, set to work at the Public Health Laboratory at Valletta in 1904. Many bacteriological experiments on animals were carried out but in spite of all their labours the source of the microbe continued to elude them.

The investigation had started to become tedious and unrewarding when the discovery was made that the goat was the reservoir of the micrococcus. The actual discovery of the microbe in the blood of the goat was made by Themistocles Zammit on the 25th June 1905.

Armed with the new knowledge that the microbe passed from the blood of the infected goat to the animal's milk, practical steps were taken to prevent the infection from reaching human beings by boiling the milk before its consumption. These steps finally culminated in 1938 in the introduction of the pasteurization of goat's milk which covers the whole of the Maltese Islands and which has resulted in the almost complete eradication of Brucellosis amongst us.

Maltese doctors gave their services during the two World Wars, joined the ranks of the British Colonial Medical Service and of the medical branches of the Army, Navy and Air Force. An appreciable number have made the British Isles their home being engaged in general practice or occupying consultant and academic posts in various specialities. Others are in Africa, Canada, Australia and in the United States of America.

The World Health Organisation has availed itself of Maltese physicians in connection with public health projects such as the control of trachoma and tuberculosis in various parts of the globe.

Bibliography

BRUCE, D., Note on the Discovery of a Micro-organism in Malta Fever, *The Practitioner*, 1887, Vol. 39, p.163.

CASSAR, P., Dr Thomas Chetcuti, *Scientia* (Malta), 1949, Vol.XV, pp.110-124.

Medical History of Malta, London, Wellcome Medical Library, 1965.

The Use of Wood as Writing Material during the Plague of Malta of 1813, *Medical History* (London), Vol.X, July 1966, pp.275-280.

Slitting of Letters for Disinfection in the Eighteenth Century in Malta, *British Medical Journal*, 14th January 1967, p.105.

Overseas Medical Graduates and Students at the University of Malta in the Nineteenth Century, *Melita Historica*, 1981, Vol.VIII, pp.93-100.

Rapporti medico-culturali tra Malta e l'Italia nel passato, *Rivista di storia della medicina* (Roma), Anno XXI, 1977, pp.1-22.

The John Hookham Frere Memorial Medical Library and the Origins of the Malta Medical School Library, Malta, The University Press, 1985.

French Influence on Medical Developments in Malta, Malta, Ministry of Education, 1987.

Malta's Role in Maritime Health under the Auspices of the Order of St John in the Eighteenth Century, Lombard Bank Publications, Malta, 1989, pp.1-25.

DAVY, J., Notes and Observations in the Ionian Islands and Malta, London, 1842, Vol.1 and 2.

DEMARCO, G., Dissertatio de Cocholata ejusque usu et abuso in medicina, Malta, 1760.

GRIMA, M.A., Instituzioni d'anatomia, Venice, 1781.

Della medicina traumatica, Firenze, 1773.

HOWARD, J., An Account of the Principal Lazarettos of Europe, London, 1779.

HENNEN, J., Sketches of the Medical Topography of the Mediterranean, London, 1830.

HARDMAN, W., A History of Malta, London, 1909.

HENIN, G., Observatio chirurgo-anathomica, Messina, 1749.

IL BARTH, 1871-77.

IMBERT, G., *An aegrotantes imaginarii sola diversitate idearum sanandi sint*, Monspelli, 1723.

INGLOTT, F.V., Brief Historical Account of the Treatment of the Insane in Malta, Malta, 1867.

Notizia della Sacra Infermeria, Rome, 1725.

PARISI, P., Avvertimenti sopra la peste, Palermo, 1593.

Aggiunta agli avvertimenti sopra la peste, Palermo, 1603.

PISANI, S.L., Report on the Cholera Epidemic in the year 1887, Malta, 1888.

Reports of the Commission for the Investigation of Mediterranean Fever, Part III, London, 1905, p.83.

SCHEMBRI, G.B., *The Midwife's Guide Book*, Malta, 1896.

Storia della Società Medica d'Incoraggiamento di Malta, Malta, Vol.I, 1845.

ZAMMIT, T., Undulant Fever in the Goat in Malta, *The Annals of Tropical Medicine and Parasitology*, 1922, Vol.16, p.1.

The Medical School of Malta, *Proceedings of the Royal Society of Medicine*, 1920, Vol.XII, pp.133-142.