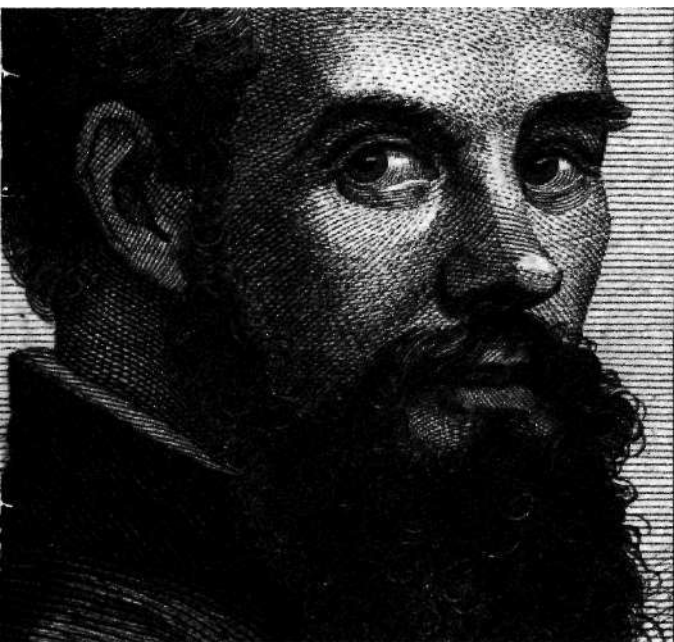




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# Vesalius



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## **Editorial**

*Vesalius* brings to all members of the International Society for the History of Medicine a new channel for information, not only of a scientific nature in well presented articles of high standard, but also with news of the activities and future plans of the Society. The two issues for 1995 (of which this is the second) are both offered free of extra charge to all members.

The Administrative Council, at its annual meeting in June 1995 in Paris, recommended the following proposals in relation to the new journal.

It had been agreed by the General Assembly of the Society in Granada (1992) that only those members currently paying their annual dues would in future be registered as members, and that these fully paid up members would be eligible to receive copies of *Vesalius* in 1995, free of extra charge. It was then decided by the General Assembly at Glasgow (1994) to launch the Society's journal.

In 1996, members of the Society will be offered the choice either of continuing their membership for that year at the present annual subscription of 600 BEF (the journal for 1996 not included in the fee) : or of electing for a "new membership" annual fee of 1,500 BEF to include the journal *Vesalius*. The double option for 1996 will allow the journal-inclusive paying members a continued opportunity to judge the value of the journal. From 1997 onwards, only one category of membership will be available, which will include receipt of the journal. All members attending the 1996 Congress in Athens will then decide the future annual subscription. The bureau is expected to recommend that it should remain at the new level of 1,500 BEF. These changes inevitably mean that the moratorium on annual membership subscriptions, permitted for many years to Eastern European and some other countries, must end in 1997.

These recommendations will need to be confirmed by members at the next General Assembly. However, the Bureau is confident that all members will be aware of the great advantages that our journal will offer as a means of scientific and interactive communication between the Membership, the National Delegates and the Council. It is also hoped that the new venture will not only provide enjoyment for all current paying members in having their own Society Journal, but will stimulate new applications for membership.

*Vesalius* apporte à tous les membres de la Société Internationale d'Histoire de la Médecine un nouvel outil d'information, non seulement de nature scientifique à travers des articles de qualité, mais également pour recevoir des nouvelles concernant les activités et les projets de la Société. Les deux numéros de 1995 (dont celui-ci est le second) ont été offert gracieusement à tous les membres.

Lors de sa réunion annuelle en juin 95 à Paris, le Conseil d'Administration a pris les décisions suivantes: Comme il avait été approuvé, à l'Assemblée Générale de Grenade (1992), seuls les membres payant régulièrement leur cotisation seraient dorénavant enregistrés en tant que membres effectifs et recevraient la revue *Vesalius* en 1995.

En 1996, les membres de la société auront le choix entre, soit continuer à payer l'actuelle cotisation de 600 BEF (le volume II du journal n'étant pas compris dans cette somme), soit verser la nouvelle cotisation fixée à 1.500 BEF et qui inclut l'abonnement au journal. Ces options devraient laisser le temps aux membres d'apprécier l'intérêt et la place du nouveau journal. Cependant, à partir de 1997, la cotisation annuelle inclura automatiquement l'abonnement à la revue *Vesalius* et l'Assemblée Générale de la Société, qui se tiendra en septembre 96 à Athènes, en fixera le montant. Le Bureau recommandera toutefois de ne pas dépasser la somme de 1.500 BEF.

Ces décisions rendent obsolète le moratorium relatif à la cotisation pour les pays défavorisés

Le Bureau espère que le nouveau journal tiendra ses promesses et apportera aux membres un nouveau forum à côté du Congrès International pour les échanges d'informations entre chercheurs ainsi que pour les contacts entre les membres, les délégués et les administrateurs. Pour notre Société, avoir son journal devrait stimuler de nouveaux travaux, apporter un plus à ses membres et accroître son audience.

*Robrecht Van Hee and Chester Burns*  
Trésoriers, Treasurers

## **Perceptions of Amputation before and after Gunpowder**

John Kirkup

### **Summary**

*Woodall's remark on limb amputation, in 1617, that "it is no small presumption to Dismember the Image of God", reflected lingering doubts attributable to widespread ancient beliefs or taboos which, at least during the early historic period, shunned elective amputations completely. Death was preferred to operative destruction of the body's integrity, even when societies were aware of traumatic, disease-induced and legal amputations, eventually to be accepted and managed rationally. Deep-rooted resistance to planned dismemberment became unbalanced by the malevolent wounds of gunshot missiles which contrasted vividly with cold steel and blunt injuries of earlier warfare. Massive soft tissue destruction, bone comminution and, above all, embedded missiles and clothing posed perplexing complications for both patients and surgeons, often causing gangrene and death. Finally despite resultant deformity, amputation was recognised as a means of preserving life. It is maintained the philosophical perception, believing it is better to live with three limbs than to die with four, gained acceptance due to the persuasive influence of gunpowder on battlefields and in battle-ships. Notwithstanding, until carbolised catgut ligatures were employed amputation remained a hazardous procedure; it persists as a repugnant operation of last resort.*

### **Résumé**

*A propos de l'amputation des membres, Woodall écrivait en 1617 que c'était pure arrogance de démembrer "l'Image de Dieu". Cette remarque reflétait des doutes attribués à d'anciennes croyances ou tabous très répandus, qui s'opposaient à ce type de chirurgie. On préférait la mort à la destruction de l'intégrité du corps par opération, même lorsque l'amputation était due à des accidents, des maladies ou des punitions. Cette résistance psychologique contre les amputations a diminué lorsque les mauvaises blessures par balles ont remplacés les blessures plus simples provenant d'armes blanches. La destruction massive des tissus mous, la pulvérisation des os et surtout les missiles et les lambeaux de vêtement enfouis dans le corps rendaient la situation des blessés très pécaire et le chirurgien devait faire des choix difficiles car l'évolution se faisait souvent vers la gangrène ou la mort. Finalement, l'amputation fut acceptée comme moyen de préserver la vie malgré tous ses problèmes. La croyance qu'il valait mieux vivre avec trois membres que mourir avec quatre se répandit grâce à la force de persuasion des plaies d'armes à feu sur les champs de bataille et sur les bateaux de guerre. Néanmoins, l'amputation resta une intervention risquée jusqu'à l'utilisation des ligatures au catgut phénique. L'amputation est encore de nos jours une opération répugnante seulement pratiquée en dernier recours.*

*The amputation of a limb is an operation terrible to bear, horrid to see, and must leave the person on whom it has been performed in a mutilated imperfect state; but still it is one of those which becomes, in certain circumstances, absolutely and indispensably necessary*

Pott (1779)

## Introduction

Mankind's familiarity with natural limb amputations secondary to congenital defects, frost-bite and vascular failure is, credibly, as ancient as the human race. Ultimately these and the spontaneous healing of traumatic amputations due to domestic, hunting and battle injuries encouraged acceptance of the amputee, at least in some communities. Much later guillotine excision of hands and feet was established as a punishment of prisoners-of-war and, in certain societies, formalised as a penalty for law breaking. More problematical is the pre-historic approach to incomplete severance; it is possible trailing limbs were lopped off by friends, or more likely by the victim as described in the First World War by Duhamel (1917). Even more mysterious is the initiation of elective amputation, that is the sectioning of sound tissues in order to excise diseased and injured appendages radically. In any event injuries severe enough to suggest major amputation, in order to forestall death, were uncommon throughout the historic era until the 16th century, certainly in Europe when, it is argued, gunshot injuries precipitated a total change in surgical outlook.

Perceptions of amputation varied with individual view-points adopted by patients and surgeons at a perilous moment of crisis, yet both were influenced powerfully by traditional attitudes exercised by the society in which they lived. Some societies regarded dismemberment as a last desperate resort to preserve life whereas others, restrained by taboos and religious convictions to preserve bodily unity, ensured elective amputation never took place; death from a gangrenous limb was accepted more readily than elective mutilation of the human corpus. And, if by chance a limb healed after a severe compound wound, this was regarded as a triumph, even when wound healing took many years and subsequently the limb remained functionless (Hilton-Simpson 1922).

In practice it is easier to find historical accounts of an individual surgeon's perception of amputation than those of patients and their communities, although often the surgeon ventilates all three viewpoints. John Woodall's (1617) comments in 1617 are an example. He wrote :

*Amputation or Dismembering is the most lamentable part of chirurgery, it were therefore the honour of a Surgeon never to use dismembering at all if it were possible... For it is no small presumption to Dismember the Image of God.*

and, he added

*This worke ... is best to be done in the morning, doe it not willingly the signe being in the place, neither the day of the full moone...*

This summarises personal doubts and expresses society's astrological superstitions surrounding the risks and gloomy finality of the procedure. But Woodall continued :

*... necessitie hath no law; the Patient will declare in his naturall desire to live, the comfort that hee hath by it. Since therefore it is of necessary use, let the discreet Surgeon be ever prepared for it.*

Thus, in early 17th century Britain, neither patient nor surgeon were constrained by fundamental sanctions against amputation, for life was crucial, irrespective of the resultant operative mutilation. In reality, Woodall was keener to amputate gangrenous limbs than to section living tissues and prevent gangrene, a topic to which we will return.

## Before Gun Shot Injuries

The ancient stele inscribed with the law code of Hammurabi, circa 1750 BC, is dramatically impressive for stipulating that when operations ended fatally, the hands of the surgeon responsible would be cut off as a punishment

(Sigerist 1951). Could this be the first written record of dismemberment for any purpose ?

If the Smith and Ebers papyri, and other documents of ancient Egypt offer no account of surgical amputation (Ghalioungui 1983) the Samhita Sushruta (Bishagratna 1907-1911) of ancient India advised amputation as high as the wrist and ankle for deeply embedded thorns in the hands and feet. In the 9th century BC, Homer's *Iliad* described in outline one hundred and forty one injuries among the mythical war heroes, including traumatic but not elective amputations (Daremborg 1865)); probably this reflected the state of actual battlefield wound care in Ancient Greece. Some commentators believe the early Greeks shrank from major limb amputation primarily because of inability to stem fatal blood loss (Cooper 1822).

By the 4th century BC, Hippocrates (Adams, 1849) and other early classical authors noted gangrenous limb separation and assisted this slow process by incision between dead and healthy tissues. If we ignore minor amputations of injured fingers and toes (Milne 1907), removal of gangrenous tissue was the only form of major dismemberment recognised until Celsus (Spencer 1938), in the 1st century AD, mentioned vessel occlusion between ligatures and hinted at elective amputation, proximal to gangrenous tissue. Heliodorus and Archigenes (Lund 1936), contemporaneous with Celsus, reflected similar attitudes and observed that ulceration, tumour formation, deformities and trauma, in addition to established gangrene, were appropriate indications for dismemberment. No classical authors however record conclusive amputation for trauma through healthy tissue in order to frustrate gangrene and death. And despite the work of Celsus, both Galen in the 2nd century AD and Paulus (Adams 1846) in the 7th century, resumed Hippocratic practices of restricting amputation to dead tissue.

In general, Arabic authors continued this conservative approach, making considerable use of heated cauteries to dry up gangrene. However Albucasis (Spink & Lewis 1973a), of the 10th century AD, was prepared to amputate as high as the knee and elbow joints for dangerous bites of marine scorpions, vipers and venomous spiders, utilising cautery to control haemorrhage. Yet when faced with a patient who requested amputation of a gangrenous hand, a probable case of ergotism, Albucasis refused to help as he feared operation would result in death; he reported the patient later cut it off himself, and concluded (Spink & Lewis 1973b):

*I narrate this story as help against this kind of malady when it occurs; and as guidance for you to take and act upon.*

This suggests Albucasis accepted a personal error of judgement and, at the same time, demonstrates the desperation of patients motivated to undertake their own operation in certain circumstances.

The surgeon's fear of uncontrolled bleeding and death of the patient being attributed to his interference pervaded surgical philosophy throughout the Middle Ages. This undoubtedly retarded the acceptance of prophylactic amputation. A case history such as the following is rare. Usmah (1929), a 12th century Arabic writer, reported a physician of the Lebanon treating a crusading knight for a leg ulcer by poultice. Despite apparent success, a Frankish physician interfered asking the knight if he preferred to live with one leg or die with two ? When he replied one leg, the physician called for an axeman who laid the leg on a block of wood and amputated the limb after two blows, the first having failed to sever the bone; it is considered the knight died of blood loss.

Mediaeval surgical authors who discuss elective amputation, unfortunately fail to offer

evidence of personal experience, thus in 1363, Guy de Chauliac (Joubert 1659) noted the need for amputation and disarticulation mentioning razor, saw, cautery and boiling oil, only to add he did not amputate himself as he awaited natural limb separation.

Trauma prior to gun-shot injuries was much less devitalising to limbs and the question of elective amputation was rarely posed. After cold steel injuries Wiseman (1676a) indicated amputation was not routine even with multiple wounds. He stated :

*I shall now consider of Wounds with loss of substance made by Bill, Pole-axe, Sword, etc. some cutting twice or thrice in one or near one place ... in the Wars they are frequent, especially when the Horse-men fall in amongst the Infantry, and cruelly hack them; the poor Souldiers the while sheltering their Heads with their Arms, sometimes with the one, then the other, until they both be most cruelly mangled.*

He concluded these mangled limbs eventually healed even if neglected and digested by maggots; he does not debate the inevitable major nerve and tendon defects of such injuries. And Bell (1812) stated in 1812 :

*... flesh wounds with the bayonet, or sword, or sabre, are less dangerous than gun-shot wounds ... there is no painful searching for foreign bodies, nor any slow exfoliation of bones; there is neither any danger from too high an inflammation, nor any great risk of gangrene.*

### **After Gunshot Injuries**

The introduction of gunshot missiles in 14th century Europe slowly displaced arrows and slingshot, to change the fundamental nature of battle injuries. Initially concern was expressed that blackening of the tissues by gunpowder, due to obligatory weapon discharge at close

range, was a source of "poisoning"; this being offered as an explanation for the malevolent appearance and behaviour of these novel wounds. Removal and neutralisation of the poison by simple lavage and later by instilling warm or possibly boiling oil was viewed as a key step in management (Wangensteen, Smith & Wangenstein 1963).

As the velocity and efficiency of the new weapons increased, the ratio of gunshot to cold steel injuries changed. At first surgeons were perplexed by wounds caused by cannon balls, chain shot and large wooden splinters (derived from the rending of battleship timbers) which produced massive soft tissue damage, combined with comminuted open fractures contaminated by indriven clothing, armour, missile material, bone and wood. As these wounds were not blackened by gun-powder, surgeons concluded, eventually, that embedded foreign bodies were the source of lethal complications and should be extracted. Lacking anaesthesia, extractions were often incomplete thus failing to prevent infection and death. Early in the 16th century such wounds, especially where main arteries and joints were involved, persuaded many military surgeons to dismember through healthy tissue before complications arose, at least below elbow and knee joint levels.

In 1517 Von Gersdorff (Zimmerman & Veith 1967), the first author to illustrate limb amputation warned :

*If the limb must be cut off, and nothing else will help, ... you should advise the patient above all to go to confession and receive the Holy Sacrement on the day before you ampute. And if the surgeon hears Mass before operation, God will favour his work.*

This emphasised the surgeon's concern to inform both patient and society of the gravity of major dismemberment whose outcome hinged on religious observances.

Later in the 16th century, as a result of the work of Pare (1575) and others, primary amputation became the recommended solution for severe gunshot wounds to save life; slowly this advice extended to compound fractures of whatever cause. Even so Clowes (1596) in 1596 reminded his surgical readers that the patients :

*... have ministered unto them some good exhortation, concerning patience in adversitie, to be made by the minister or preacher. And you shall likewise advertise the friends of the patient, that the worke which you go about is great, and not without danger of death.*

If not always expressed, the fears of cruel pain during amputation, of death from blood loss or from subsequent sepsis, and anxieties about the quality of the stump and future rehabilitation were implicit in the calculations of both patient and surgeon, even when the appearance of amputees was accepted by society.

However not all surgeons and few patients were comfortable with radical solutions as Woodall's approach demonstrates; he reviewed two diagnostic situations. Firstly, patients with established gangrene who could be dismembered at leisure through insensitive dead tissue without bleeding; this reflected specialised experience at St Bartholomew's Hospital, London where he recorded a hundred or more such amputations. And secondly, patients with grossly shattered limbs, usually due to gunshot who required urgent limb amputation through sound and sensitive tissues (Woodall 1639). Woodall offered no case observations of the latter in contrast to several examples of gangrenous trimming.

Few colleagues were able to follow Woodall's cautious counsel, for few had access to hospital beds to monitor the gangrenous process and its slow separation, which often occupied many

months. Moreover, on ships and battlefields this approach was impossible and neither surgeons nor their patients could limit their problems to the morning or avoid the day of the full moon.

As Wiseman (1676b) made clear, the patient often initiated and indeed insisted on dismemberment in certain circumstances. Clearly, repeated dressing and splinting of a shattered leg was painful enough without the erratic movement of a sailing ship in all weathers, and the hazard of the limb being nibbled by rats, such prospects crystallised the demand of many sailors for immediate amputation in return for greater freedom of movement and earlier resolution of pain, assuming all went well. Experienced soldiers too were aware when amputation seemed the rational solution. Even children might plead their case as Ryder described in 1685. his patient was the nine year old son of a lawyer, whose leg was crushed by a cartwheel four years previously. Confined to bed, emaciated, his knee dislocated with the heel stuck to his buttock and eleven discharging fistulae, Ryder (1685) feared to suggest amputation and hinted there was no cure. To which :

*The boy very heartily replied, he knew he should be well if I would cut off his thigh and if I would lend him a knife, he would cut it off himself.*

Duly encouraged, Ryder performed above knee amputation; happily, the stump healed and the boy regained weight and good health.

By the end of the 17th century, society and surgeons generally approved of early amputation for shattered limbs, delay being considered a source of early death or many months of painful and uncertain healing in miserable hospital conditions. During the 18th century dissenting surgical opinions were voiced as wound-care was analysed more closely; a case in point is the compound tibial fracture suffered by Pott, the well-known London surgeon, saved



by a colleague from the proposed amputation. An extreme view was adopted by Bilguer who campaigned against elective amputation in a monograph of 1761 entitled *A dissertation on the inutility of the amputation of limbs*. This was based on observations that some patients who refused amputation survived and by his experience in a large Prussian military hospital where, systematically, gunshot wounds were explored, enlarged and excised. This necessitated repeated painful incisions and dressings and, for leg wounds, long confinement in bed; nine or ten months in hospital was not uncommon. Indeed Bilguer (1764) commented:

*... this method of curing limbs ... is accompanied with a great deal of pain, with murmurs and impatience on the part of the sick; that it requires a very judicious surgeon, and gives him abundance of trouble, care and anxiety; besides I do not pretend that every patient was saved by it.*

Conditions for this approach rarely obtained on battleships or on moving battlefields; for example in the French army advancing to and retreating from Moscow where the epic amputation feats of Larrey are frequently quoted (Dible, 1970).

Nevertheless Bilguer provoked a fierce debate which probably moderated extreme views and encouraged statistical studies. On the basis of modest field experience, Hunter (1794) was among those who counselled against primary amputation, yet accepted a delayed procedure if necessary.

In practice, striking the balance was never easy, for individual wounds and circumstances varied widely. As Gross (1862) concluded in 1862:

*The cases which may reasonably require and those which may not require interference with the knife are not always so clearly defined as not to give rise, in very many*

*instances, to the most serious apprehension... that, while the surgeon endeavours to avoid Scylla, he may not unwittingly run into Charybdis, mutilating a limb that might have been saved, and endangering life by the retention of one that should have been promptly amputated.*

The military surgeon Hennen (1820) maintained that his patients attributed surgical dismemberment to the fire of the enemy rather than the incision knife. Certainly soldiers and sailors generally continued to accept amputation as realistic treatment, as did an increasing number of the civil population exhausted by chronic bone ulcers, tuberculous joints and tumours.

Benefiting from general anaesthesia during the 19th and 20th centuries, surgeons initiated numerous alternative procedures to circumvent amputation. For example, joint excision for disease, ligature for aneurysm, trephine decompression of deep bone abscesses, improved fracture splintage, antiseptic and ultimately aseptic wound care, Xray localisation of foreign bodies, arterial reconstruction, blood transfusion, open debridement and closed plaster casts, antibiotic therapy, helicopter evacuation, bone tumour excision and its prosthetic replacement. As Schadewaldt (1974) observed, amputations composed 1 % only of all operations in 1974 compared to 20 % in 1860.

Unhappily the velocity and destructive nature of gunshot missiles has increased with time and escalated the menace of wounding. According to Aldea and Shaw (1986), the incidence of amputation at 2 % in the First World War, increased to 5.3 % in the Second World War, and to some 13 % in the Korean and Vietnam Wars. In current civil wars, traumatic and elective amputations of lower limbs are fuelled by the indiscriminate dispersal of anti-personnel mines, especially in parts of Africa and in Afghanistan (Coupland 1992). Happily

the death rate after elective amputation has dropped markedly from up to 70 % for thigh section at the battle of Waterloo to 40 % in the American Civil War and to single figures in recent conflicts (Aldea & Shaw 1986).

Modern anaesthesia, asepsis, transfusion, antibiotics and vessel reconstruction have reduced operative hazards dramatically and, as the wheel has turned full circle, now promote the re-attachment of traumatically severed limbs. The same expertise permits safe dismemberment of the elderly with vascular failure and gangrene, now accepted as obligatory in many parts of the world.

## Conclusions

### 1. Concepts of Society

The approval of society at large is desirable, if surgeons are to advise confidently and patients accept willingly dismemberment as a means of survival. Until the Renaissance the indications for such surgery were few and often inhibited by religious constraints. If the fear of death from haemorrhage during amputation haunted Greek, Roman and Mediaeval authorities, other societies considered the maintenance of bodily integrity more important than merely preserving life. Coupland (1992) after recent extensive experience of war wounds in Red Cross hospitals confirmed the continuance of this attitude in some cultures, stating :

*The patients may prefer a useless limb to a functioning prosthesis, whilst others may prefer to die from their wounds rather than suffer amputation. Such views must be accepted and accommodated in decision making.*

Paradoxically members of the same cultures accept legal amputations as a punishment, presumably to stigmatise the law-breaker.

### 2. Fears of the Patient

Until the introduction of general anaesthesia about 150 years ago, the pain of incision and the application of both cautery and ligatures terrorised many patients. Parallel fears of death from complications such as haemorrhage and infection, only diminished when wound antisepsis and asepsis were established barely a century ago. Meanwhile acceptable solutions to anxieties over long-term functional prospects were delayed until very recent advances in rehabilitation and light-weight cosmetic artificial limbs.

Even so the fear and distaste of mutilation persists in all societies, to differing degrees, although many conclude it is better to live with three limbs than die with four.

### 3. Concerns of the Surgeon

Gunshot missiles produced mysterious wounds which, surgeons discovered eventually, needed drastic and unpleasant measures; from this evolved modern tourniquets, new instruments and novel techniques, and also a specific surgical philosophy which accepted limb sacrifice to preserve life. If today the correct indications and the levels of section remain matters for significant concern and debate, especially after trauma, the control of bleeding, infection and healing are now matters of surgical routine.

Nonetheless surgeons amputate with repugnance as a procedure of last resort, some harbouring, subconsciously at least, a sense of surgical defeat. Indeed the spectre of Bilguer has reappeared, as protracted efforts to save limbs are pursued, when prompt amputations would have been judicious. In addressing this dilemma, the annual Watson-Jones Lecture of the Royal College of Surgeons of England in September 1994 was entitled aptly, "Limb salvage versus amputation: technique over reason ?".

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## Biographical Note

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## **Une equipe chirurgicale beige a la bataille de Normandie en 1944**

Henri Reinhold

### **Résumé**

*Durant cette année de 1994 ont été commémorés, avec gravité et dignité, les grands épisodes de la bataille de Normandie de 1944. Les artisans de la victoire, de ce qui a été qualifié la plus grande bataille de l'histoire, furent essentiellement les troupes américaines, britanniques et canadiennes. Mais y furent également engagés des contingents de pays d'Europe continentale, notamment des Français, des Polonais, des Hollandais et des Belges. Plusieurs d'entre eux n'ont été mis en ligne qu'au début d'août 1944, dès que toute la péninsule du Cotentin, de Caen à Avranches, était aux mains des Forces Alliées et qu'une guerre de mouvement était envisagée. Apparemment, le Haut Commandement Allié avait décidé de préserver ces unités d'un effectif réduit durant la phase la plus meurtrière de la conquête d'une solide tête de pont. Elles étaient ainsi susceptibles d'être utilisées ensuite dans les combats conduisant à la libération de leurs pays respectifs.*

*Dans cet article nous évoquons une participation médicale belge dans la campagne de Normandie.*

### **Summary**

*During the year 1994, the main episodes of the battle of Normandy (1944) were commemorated with solemnity and dignity. The workmen of the victory, in what was called the Greatest Battle of History, were essentially the American, British and Canadian troops. But, units composed of men from some European countries, particularly Frenchmen, Poles, Dutchmen and Belgians were also involved. Some of these units were engaged in action only at the beginning of August 1944, as soon as the whole peninsula of Cotentin, from Caen to Avranches, was firmly held by the Allied Forces and an offensive war through the Continent was considered. Apparently, the Allied Supreme Command had decided to preserve a reduced effective force of these units, during the most bloody phase of the battle for the conquest of a strong bridgehead. So they were kept in a position to participate in the liberation of their respective countries.*

*In this paper, the author evokes a Belgian medical participation in the campaign of Normandy.*

### **Les Forces de terre belges en Grande-Bretagne**

Les Belges, qui ont combattu en Normandie, étaient groupés dans la Brigade Piron, ainsi appelée selon le nom de son commandant. Sa composition est décrite au tableau 1 (1,2)

*Prof. Henri Reinhold, Professeur Emérite, Université Libre de Bruxelles, Belgique*

### **BRIGADE PIRON**

2.200 Hommes - 500 Véhicules

3 Unités d'Infanterie motorisée

1 Batterie d'Artillerie

1 Escadron d'Autos blindées

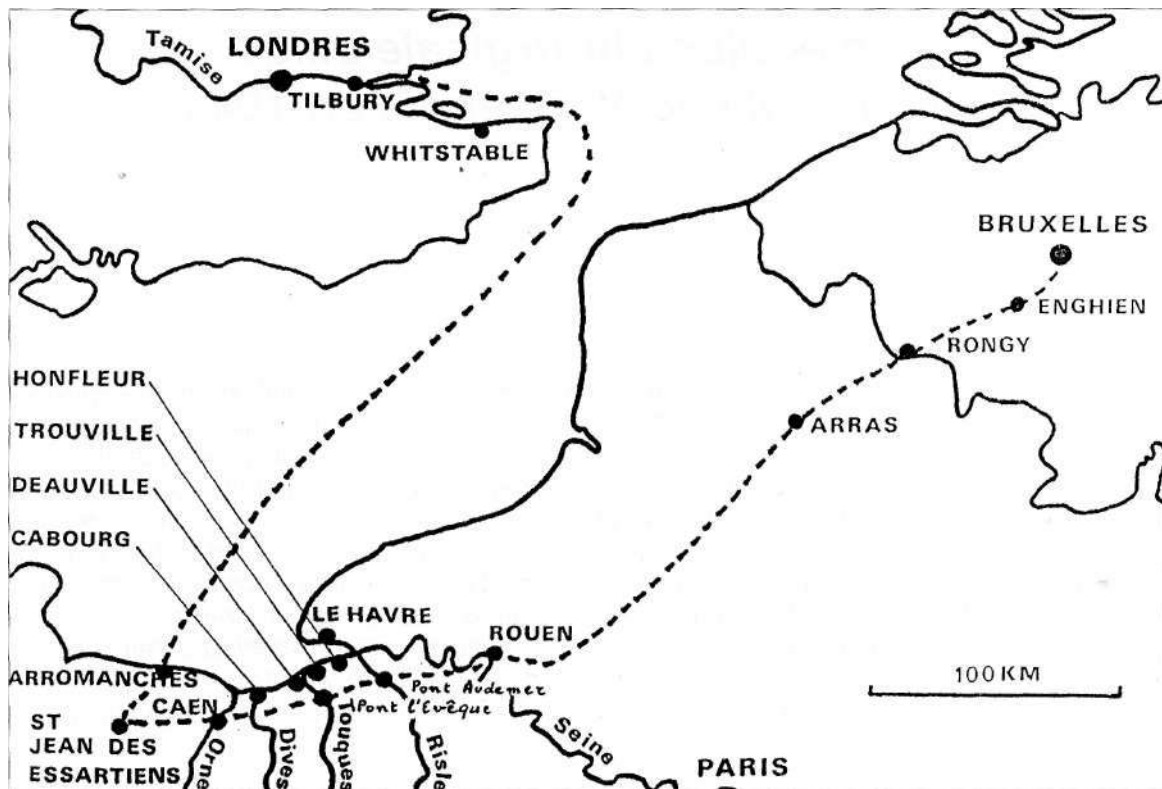
1 Compagnie de Génie

1 "Brigade Train" (ravitaillement)

1 "Light Aid Detachment" (Atelier mobile)

Le service médical de la Brigade

Fig. 1 : Parcours suivi de Tilbury à Bruxelles



Les sous-unités de la Brigade disposaient d'un médecin et de brancardiers-infirmiers qui, en action, installaient un poste de secours avancé dit "Regimental aid Post" (RAP). Mais ont existé en outre des unités purement médicales. La "Belgian Field Ambulance" avait pour mission de transporter les blessés à partir des premiers postes de secours vers une "Advanced dressing Station", relais plus équipé. Avaient aussi été créées une "Belgian Field Surgical Unit" (FSU) et une "Belgian Field Transfusion Unit" (FTU). Ces deux dernières font l'objet du présent exposé.

Comme son nom l'indique, la FSU était une unité chirurgicale. Dans l'organisation de médecine militaire britannique, le premier travail chirurgical dans l'armée déployée se faisait à l'échelon de Corps d'Armée, sauf pour des interventions d'une extrême urgence, telles que trachéotomie, fermeture d'un pneumothorax ouvert, amputation d'un membre détruit. Les Forces Belges n'ayant que l'effectif d'une brigade, la FSU et la FTU furent détachées au Corps d'Armée dans lequel cette brigade était en opération.

Elles étaient ainsi entièrement intégrées dans le "Royal Army Medical Corps" et les Belges qui y étaient traités ne constituaient qu'une minorité des blessés.

Qu'était exactement une FSU ? C'était une équipe chirurgicale de renfort destinée à accroître la capacité de travail au premier échelon chirurgical, la "Casualty Clearing Station" (CCS), lorsque la situation rendait ceci nécessaire. Elle était conçue pour être entièrement autonome pour son fonctionnement médical. Le personnel était composé d'un officier chirurgien, un officier anesthésiste, 5 infirmiers, 3 chauffeurs et une ordonnance. L'unité possédait son charroi d'une voiture personnelle dite "staff car" et 2 camions de 3 tonnes. L'équipement comprenait une tente opératoire, une tente d'hospitalisation pour 20 blessés avec toute la literie et même une génératrice électrique. Le matériel transporté permettait d'effectuer une centaine d'opérations. La conception de telles unités octroyait une grande souplesse dans l'organisation du travail.

L'initiative de la création d'une FSU belge était due au docteur Alfred DUMONT (1903-1966). Le souvenir de cet éminent confrère est toujours présent dans la mémoire de nombreux médecins belges, étant donné sa riche carrière professionnelle. Dans l'après-guerre, il fut en effet l'un des chirurgiens qui ont introduit en Belgique la chirurgie intrathoracique. Parmi ses fonctions ultérieures importantes on peut citer la direction du Département de Chirurgie thoracique de l'Hôpital St.-Pierre de Bruxelles. Il fut aussi Directeur du Centre de Transfusion sanguine de la Croix-Rouge de Belgique et Secrétaire de Rédaction des Acta Chirurgica Belgica. Alfred DUMONT avait commencé une formation de chirurgie en 1933 au Service du Professeur Albert HUSTIN à l'Hôpital Brugmann. Au cours de la campagne de mai 1940, il commanda une ambulance au 1er Corps d'Armée. Fait prisonnier, il s'évada et s'engagea dans la Résistance. En 1942, il entreprit une évasion vers l'Angleterre. Arrêté en Espagne, il fut enfermé durant 5 mois dans le sinistre camp de Miranda de Ebro où croupissaient quelque 2.000 prisonniers espagnols et étrangers dans des conditions épouvantables. En janvier 1943 il arriva finalement en Grande-Bretagne. Souhaitant mettre son expérience chirurgicale au service de la cause des Alliés, il demanda la création d'une FSU. Était aussi nécessaire à cet effet un médecin anesthésiste, spécialiste inexistant en Belgique à l'époque. Étant moi-même médecin aux Forces Belges en Grande-Bretagne, je sollicitai un congé pour une formation rapide dans cette discipline.

La FSU belge fut ainsi mise sur pied au début de 1944 et les hommes furent entraînés au montage et au démontage de l'installation, en attendant de pouvoir entrer en action.

Une FTU était d'autre part composée d'un officier médecin, 1 à 2 soldats techniciens et 1 chauffeur. Elle disposait d'un camion équipé de frigorifères. L'officier de la FTU belge était le Sous-Lt. Roger LINZ qui, après la guerre, devint

Chef du Laboratoire de Bactériologie de l'Hôpital St.-Pierre de Bruxelles. La décision de créer cette unité ayant été prise tardivement, le véhicule spécialisé n'avait pas pu être équipé complètement, mais l'équipe pouvait entrer en action en s'intégrant dans une autre unité existante.

### **Le départ en Normandie**

Fin mai 1944, la grande offensive en préparation me parut imminente. Subitement, les hôpitaux refusaient l'admission de cas non urgents, ce qui indiquait la constitution d'une réserve de lits disponibles. Après la nouvelle du débarquement du 6 juin, de nombreux combattants belges manifestaient une cuisante impatience. Mais si la Brigade avait été lancée avec les vagues d'assaut précoces, j'aurais sans doute eu moins de chances de pouvoir rédiger ce compte rendu aujourd'hui.

C'est le 29 juillet qu'arriva l'ordre de faire mouvement pour rejoindre le "21 st. Army Group" de la "British Liberation Army". L'action militaire requérant le secret, nous n'avions aucune idée comment allait se dérouler notre expédition. Mais le déplacement de ce qui comparativement n'était qu'un contingent mineur, était loin d'être une mince affaire. Nous fûmes d'abord transférés dans un camp de transit. Les 2.200 hommes et 500 véhicules furent ensuite méthodiquement embarqués au port de Tilbury à l'embouchure de la Tamise (fig. 1) sur 4 "Liberty Ships", cargos de 10.000 tonnes construits en grande série par la puissante industrie américaine. Les 4 bateaux ont ensuite avancé d'une cinquantaine de kilomètres vers l'est en face de Whitstable où ils ont occupé leur place désignée dans un convoi en formation (fig. 2). Le 6 août, escorté par la marine de guerre, le convoi a levé l'ancre et a parcouru près de 400 km jusqu'à la côte normande. L'arrivée au port artificiel Mulberry B, construit par l'Amirauté à Arromanches, fut une découverte tout à fait sensationnelle (fig. 3). Le débarquement, que j'avais imaginé ardu, pénible, se déroula avec la plus étonnante sim-

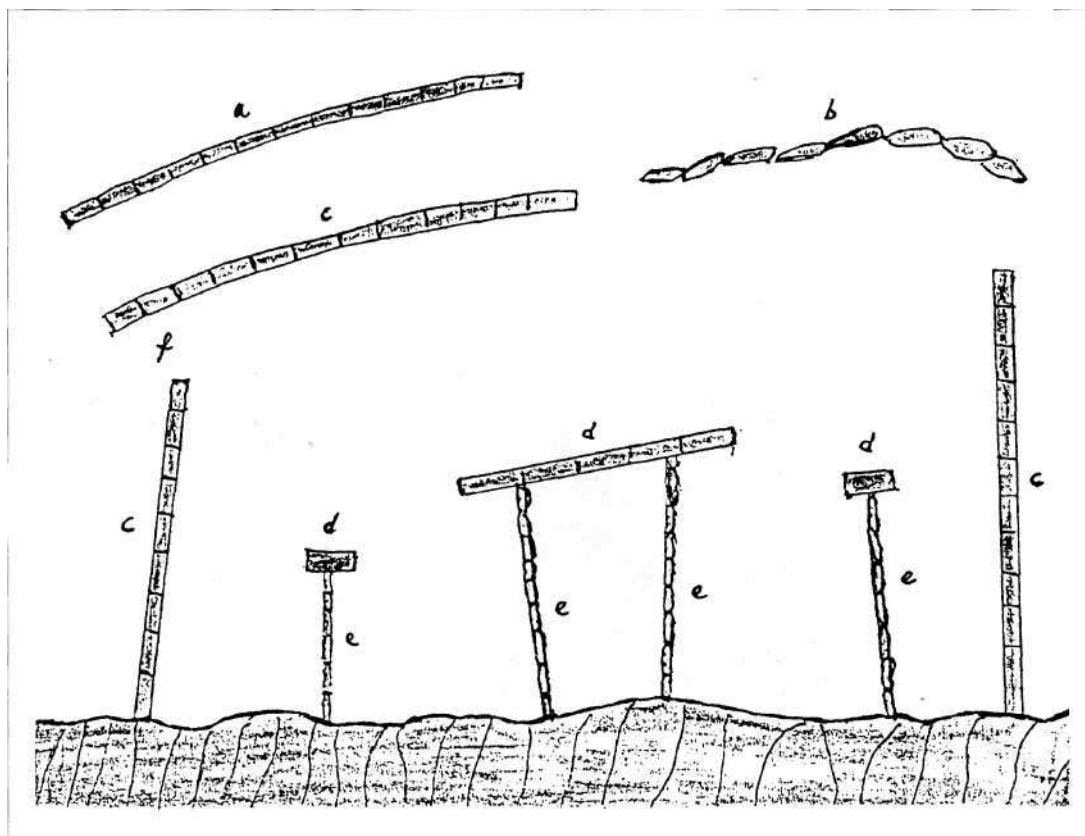
*Fig. 2 : Officiers et hommes du Service de Santé sur le "Transport Ship" Henri Austin, rassemblés pour une communication de service. Le port du masque à gaz est remplacé par celui de la ceinture de sauvetage.*



plicité. Nous accostâmes à un grand quai flottant. Certains véhicules roulèrent par des passerelles du bateau sur le quai; d'autres étaient transférés par des grues avec une précision impeccable et dans une parfaite sérénité. A partir du quai, des jetées flottantes, longues d'environ un demi-kilomètre, nous ont amenés sur la terre ferme. Tout cela se passa dans un calme impeccable, comme une opération technique courante, mais pas sans une émotion intense d'avoir remis pied sur cette petite zone de territoire fraîchement reconquis. La forte émotion fut bientôt coupée par la vue d'écriteaux empreints d'un humour typiquement anglosaxon. Pendant la traversée, nous portions tous sur la poitrine une ceinture de sauvetage. Au débarcadère, nous passâmes devant un panneau portant l'inscription "Put your May West down here". Dans l'argot militaire, le "life belt" avait ainsi une autre appellation, évoquant l'actrice américaine, célèbre à l'époque, dont le relief anatomique faisait la popularité. Un peu plus loin, il y avait une nouvelle note d'humour : un poteau indicateur, planté à côté de la piste, indiquait aux arrivants la direction de Paris et celle de Berlin.

Les unités combattantes belges furent placées sous les ordres de la "6th. Airborne Division", en ligne depuis deux mois et ayant subi de lourdes pertes. Nos deux unités médicales furent envoyées à un hôpital de campagne du même corps d'armée, le 33 CCS du "1st. Army Corps", installé près du village St. Jean des Essartiers, dans une "Medical Area" en association avec 3 autres unités médicales. Je me représentais un hôpital de campagne dans une zone de combat comme inévitablement désordonné et plutôt malpropre. Dans notre trajet depuis Arromanches un trafic dense, sur un nombre fort limité de chemins de terre, soulevait continuellement des nuages de poussière. Retombant sur la végétation environnante, celle-ci avait conféré à la nature une couleur terne grise. L'hôpital, monté dans une prairie à l'écart des itinéraires encombrés, avait un cadre verdoyant merveilleux. Les nombreuses tentes étaient impeccablement alignées et harmonieusement distancées. On n'apercevait ni débris, ni souillures quelconques abandonnés sur le sol. Le premier contact visuel avait causé une véritable émotion esthétique, peu en accord avec les circonstances du moment.

Fig. 3 : Schéma du port artificiel Mulberry B. a) brise-lames flottant, b) barrage de navires coulés, dont le cargo "Belgique", c) barrages de caissons coulés, d) quais d'accostage, e) jetées flottantes de raccordement, f) chenal d'entrée du port



### L'action en campagne

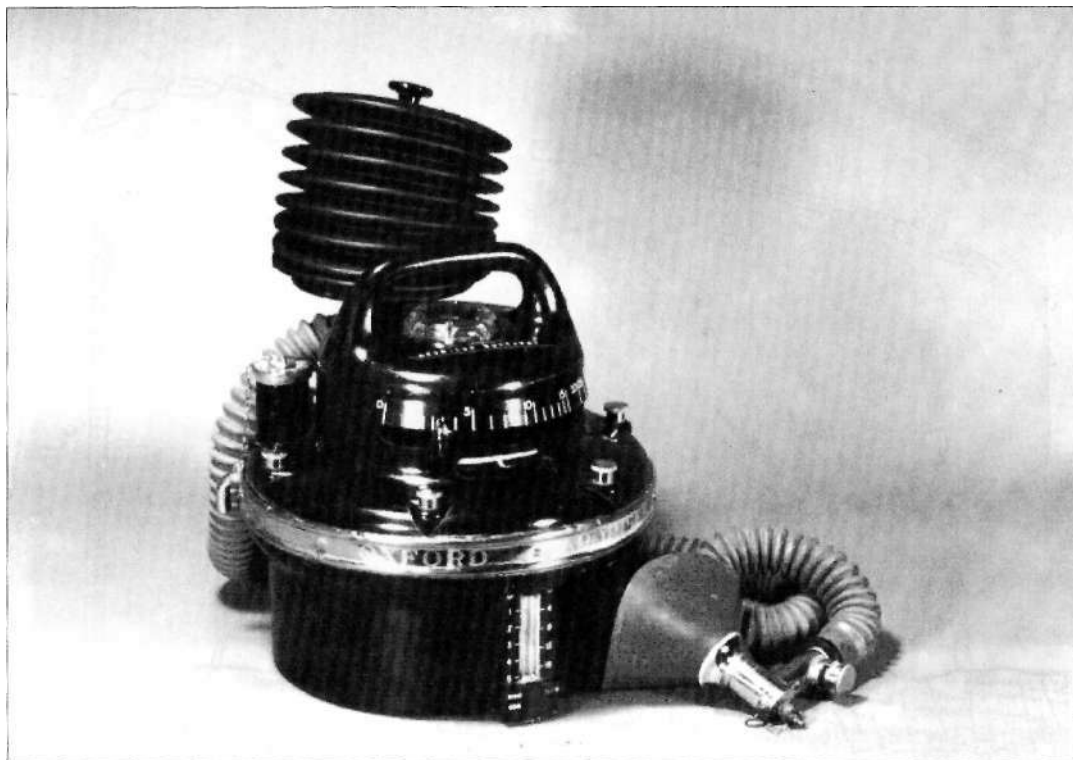
Nous fûmes aussitôt mis à la tâche. Les ambulances déposaient les blessés à la tente dite "Resuscitation". Celle-ci était à la fois un poste de triage et de réanimation. Les patients y subissaient un examen détaillé. Ceux qui étaient à même de poursuivre la route sans risque étaient évacués en Angleterre. Les blessés nécessitant préalablement un traitement chirurgical étaient retenus et y recevaient éventuellement des soins de réanimation.

Le terme réanimation nous fait penser à nos unités de soins intensifs présentes. Mais en 1944 les nombreux moyens, actuellement déployés pour le monitoring, les investigations diagnostiques et la thérapeutique, étaient inconnus pour la plupart. L'état du patient était évalué essentiellement par l'aspect de la peau, la fréquence et la qualité du pouls et la détermination de la pression artérielle.

Dans le domaine thérapeutique, la réanimation respiratoire était inexistante. Pour la respiration artificielle d'urgence, étaient enseignées les méthodes de Schâfer, de Sylvester, de Holger-Nielsen, d'Eve. Les trois premières recouraient à des manoeuvres de compression du thorax ou de son agrandissement par des tractions sur les membres. Dans la méthode d'Eve, le patient, ligoté sur une civière, était oscillé sur un angle de 60° à raison de 20 fois par minute. Ces méthodes n'avaient pas d'efficacité valable et une survie ne pouvait résulter que d'une récupération spontanée précoce. C'est à partir des années 1950 que des groupes d'étude américains ont mis au point les méthodes de respiration artificielle par pression positive intermittente, d'application généralisée à l'heure actuelle. En fait, dans des centres de recherche ou de chirurgie d'avant-garde, des appareils sophistiqués avaient été mis au point, mais ceux-ci n'avaient guère pénétré la pratique générale en 1944.



Fig. 4 : "Oxford Vaporiser", appareil portatif pour la narcose à l'éther



Comme analeptiques, étaient utilisés la nikethamide, l'éphédrine et des vasopresseurs apparentés, mais la seule catécholamine disponible était la précieuse adrénaline. L'arsenal thérapeutique comprenait des bonbonnes d'oxygène et d'excellents masques d'oxygénothérapie.

Les blessés en état de choc étaient souvent placés sous des ponts chauffants. C'étaient des arceaux, constituant un demi-cylindre, dont l'intérieur était garni de lampes électriques chauffantes. La description classique de l'état de choc était la pâleur, des extrémités cyanosées et une peau froide et moite. On croyait ainsi aux vertus d'un réchauffement externe. Toutefois, dans la littérature, des voix autorisées avaient déjà mis en garde contre un recours démesuré de réchauffement.

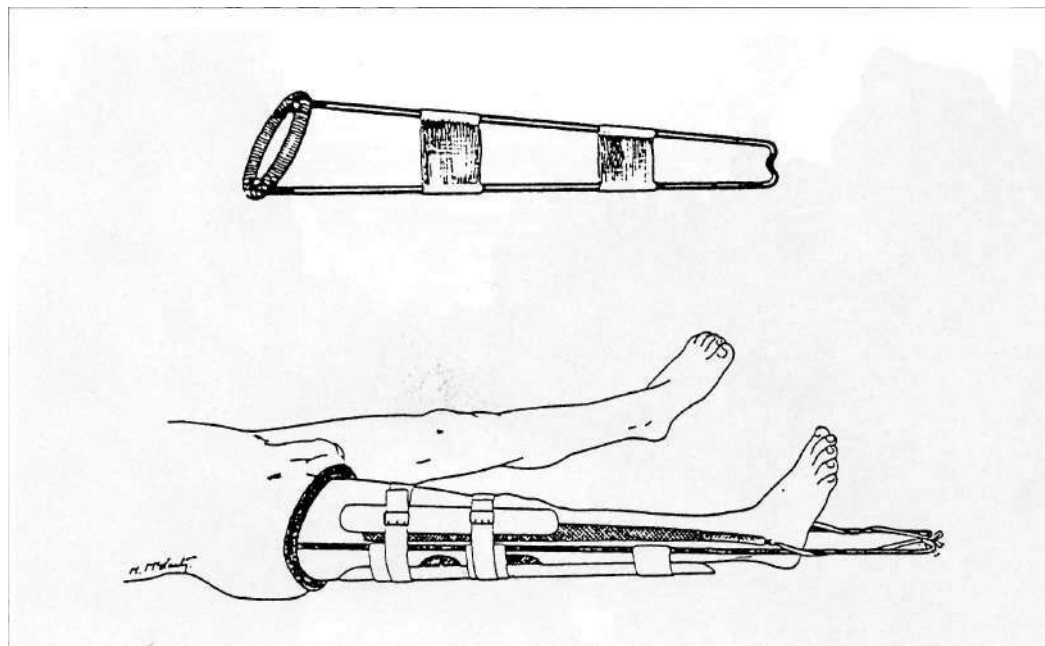
En réalité, l'essentiel de la réanimation était de nature circulatoire, c'est-à-dire l'administration de perfusions intra-veineuses et de transfu-

sions. Les besoins à ce sujet ont toujours été magnifiquement couverts. Les médecins de la tente "Resuscitation" suivaient les effets de cette thérapeutique et décidaient d'une amélioration suffisante pour une opérabilité.

Malgré l'absence du monitoring actuel et d'une réanimation respiratoire véritable, latente "Resuscitation" a rempli un rôle considérable dans le sauvetage de blessés. Il faut rappeler qu'une cause majeure de mort précoce au front de 1914-1918 était le choc hémorragique. C'est en 1917 que la transfusion a commencé à être pratiquée à une échelle importante et c'est depuis lors que des blessés très graves ont réussi à survivre, aboutissant aux grands invalides de guerre.

En 1944, la pratique de transfusion sanguine était parfaitement développée en Belgique. C'est d'ailleurs notre compatriote Albert Hustin qui avait découvert la conservation du sang par le citrate. Par contre, des solutions adéquates

Fig. 5 : Le "Thomas' Splint" et patient appareillé avec cette attelle.



pour perfusion intra-veineuse, répondant notamment au critère d'absence de pyrogène, n'étaient pas obtenables et on faisait uniquement des injections sous-cutanées ou intramusculaires. On ne pourrait assez rendre hommage à l'efficacité des unités de transfusion. Des équipes ont été en action dès le 16 juin 1944 et une banque de sang a fonctionné en Normandie à partir du 11 juin. Les livraisons, effectuées par bateau et par avion, ont couvert une consommation moyenne de 400 bouteilles par jour (3, 4).

Une fois considéré opérable, le blessé était envoyé à la tente opératoire selon les priorités décidées.

Pour l'anesthésie, nous disposions de trois produits : le thiopentone ou Pentothal, le chlorure d'éthyle et l'éther. Le Pentothal avait été introduit aux Etats-Unis en 1935, mais était encore inconnu en 1944 en Belgique. Il était utilisé pour l'induction de la narcose chez tous les patients et souvent comme seul agent anesthésique; dans ce dernier cas, l'injection initiale à la seringue était souvent suivie d'un goutte-à-goutte continu d'une solution à 0,4 %. Pour les opéra-

tions plus importantes, l'anesthésique principal était l'éther, comme d'ailleurs aussi sur le continent européen. Mais la méthode d'administration était très différente.

Sur le continent on utilisait généralement l'appareil d'Ombredanne, décrit par cet auteur en 1908, de conception encore fort primitive et d'un dosage totalement imprécis. En outre, le fonctionnement comportait la réinhalation d'une partie de l'air expiré avec augmentation du taux sanguin de CO<sub>2</sub>. Ceci produisait une hyperventilation gênante en chirurgie abdominale. L'appareil dont nous étions équipés était l'Oxford Vaporiser (fig. 4), créé en 1941. Débitant des concentrations d'éther précises, il constituait un progrès considérable. Pour l'emploi en campagne il avait en outre l'avantage d'être compact, aisément transportable et de fonctionner à l'air atmosphérique avec possibilité d'adjonction d'oxygène, si disponible. Le chlorure d'éthyle n'était administré que durant quelques minutes pour faciliter l'absorption d'éther.

Concernant le travail chirurgical, la table d'opérations était rudimentaire sur des tréteaux. Avec l'aide de coussins et de couvertures on

Fig. 6 : Traversée de la ville de Caen le 2 septembre 1944.



s'efforçait de mettre le patient dans la position posturale requise. L'éclairage était donné par des ampoules électrique fixées aux bouts de 6 lattes disposées comme les rayons d'une roue autour d'un axe central. La technique chirurgicale était celle apprise par l'expérience de la guerre de 1914-1918. Sur la table d'instruments il y avait toujours un bassin contenant des litres d'une solution d'acri flavine à 0,1 % de couleur jaune intense.

Des expériences de laboratoire avaient montré que des plaies inoculées avec une dose de streptocoques pyogènes, évoluant normalement vers la cellulite et la septicémie, guérissaient bien si elles étaient nettoyées endéans les 2 heures avec cette solution antiseptique (5). Aussi, chez nos blessés, sans doute encore sous l'effet du spectre des redoutables infections qui avaient sévi durant la première guerre mondiale, les plaies et les cavités internes ouvertes étaient abondamment lavées avec cette solution jaune or. En outre, les instruments et les gants y étaient périodiquement rincés, conservant un aspect agréablement propre au

champ opératoire. C'était le style de l'époque, maintenant évanoui. En fin d'opération, les plaies, soit fermées, soit laissées ouvertes, étaient saupoudrées de poudre de sulfamide, conformément à l'expérience favorable obtenue au cours de la guerre d'Espagne.

J'ai le souvenir de seulement trois infections dramatiques, toutes chez des blessés allemands, trouvés abandonnés par leurs troupes en retraite. L'un était un jeune de 17 ans, atteint de péritonite, pleurant désespérément en appelant sa mère; le deuxième avait une gangrène dans un vaste trou de la région fessière; le troisième avait un empyémethoracique paraissant curable. A part les facteurs des conditions de la bataille, il y a lieu de remarquer que la qualité de la médecine allemande était tombée à un niveau déplorable. Pour le régime nazi, la médecine n'était pas contributive à la puissance de la nation et les études de médecine avaient ainsi été écourtées. En conséquence, les jeunes médecins étaient d'une ignorance crasse et seuls les aînés de la profession avaient une compétence valable. J.K. Willson-Pepper (6) a

Fig. 7 : Passage de la Seine à Rouen sur le pont de chemin de fer partiellement détruit



décrit l'état de 105 blessés allemands dont il avait repris la charge aux médecins militaires allemands en novembre 1944. Beaucoup d'entre eux avaient des drains laissés passivement en place depuis 6 semaines à 3 mois. Le pus s'écoulait dans des bassins placés sur le lit et parfois devenus adhérents au matelas. Étonnamment, certains blessés avaient des drains ouverts en-dessous de leur plâtre. Les patients étaient rarement lavés et couverts d'escarres. Ils avaient les yeux hagards de drogués. Une infirmière a été vue injectant de la morphine en série, avec une seringue de 10 ml., sans changer d'aiguille.

Dans les services de santé des Alliés, à part la différence de qualité de la médecine, l'année 1944 était le début d'une utilisation importante de la pénicilline. Le précieux produit était administré parcimonieusement à raison de 20.000 unités toutes les 3 heures ou bien en débit intramusculaire continu d'une solution de 100.000 unités dans 500 ml. de liquide. Traités ainsi, des hommes des unités blindées, victimes de brûlures étendues et arrivant plusieurs jours

plus tard à un hôpital en Angleterre, présentaient après l'enlèvement des pansements une surface tissulaire cruentée sans suppuration, fait véritablement étonnant à l'époque.

Pour les fractures du membre inférieur, l'attelle de Thomas (fig.5), décrite par cet orthopédiste britannique en 1870, a toujours été largement utilisée (7). Cet ingénieux support a rendu de précieux services, permettant de stabiliser efficacement, avec facilité et rapidité, le membre traumatisé, au point que bon nombre de fracturés n'ont pas requis d'autre traitement ultérieur.

L'opération terminée, le blessé était transféré à une tente d'hospitalisation, où il était pris en charge par d'autres médecins.

La tente opératoire était ainsi en activité pratiquement continue. Deux équipes s'y succédaient à une alternance de 8 heures, de sorte que chacune était au travail pendant 12 heures sur les 24. Les 8 heures d'intermède étaient consacrées au sommeil, à la toilette et aux

repas. A ce rythme de travail, nous avons sans doute un rendement maximal, restant toujours en excellente forme, sans jamais souffrir d'un excès de fatigue, ce qui était évidemment très important pour la sécurité des patients.

Une telle structure d'exercice de la médecine avait un certain caractère de taylorisme. Nous étions ancrés à la salle d'opérations sans voir les patients avant l'opération et sans les suivre ensuite. Du point de vue de la médecine civile, ceci apparaissait comme une médecine déshumanisée. Alfred Dumont en était quelquefois offusqué. Mais les règles en vigueur étaient clairement bénéfiques. L'ambiance du travail était d'ailleurs hautement gratifiante. Jamais nous n'avons manqué de quoi que ce soit dans les médicaments, les solutions de perfusion, lesangtransfusionnel, les fournitures diverses. Nous avons le sentiment d'accomplir nos tâches dans des conditions optimales pour les circonstances existantes. Sûrement, des blessés sont décédés avant d'arriver à la tente opératoire.

D'autre part, nous n'avons pas connaissance de l'évolution après l'opération. Il y avait aussi des cas irrattrapables. J'ai ainsi le souvenir d'un blessé arrivé en coma, ayant une artère carotide déchirée. Nous avons uniquement pu extraire le projectile, vider l'hématome et ligaturer l'artère et le patient est parti dans un coma inchangé. Un autre souvenir émouvant des limites de possibilités au premier échelon chirurgical est celui d'un très jeune Belge. Il avait été engagé comme volontaire à moins de 18 ans, ayant menti sur sa date de naissance. Un éclat d'obus avait tranché sa verge qui ne pendait plus que par un lambeau de peau. Nous étions très peines par l'injustice du sort pour ce jeune courageux. Afin de faire quelque chose, même sans espoir, ne fût-ce que pour son moral, une suture fut pratiquée avant de l'évacuer. Trois ans plus tard, en novembre 1947, j'assistais à une réunion de la Société Belge de Chirurgie. Au programme de la séance figurait une com-

munication du célèbre chirurgien plastique britannique Sir Harold Gillies sur ses résultats opératoires de la récente guerre. Il avait fait venir à la réunion un ancien patient. Il le fit monter sur l'estrade et le pria de se déculotter. Fièrement, Sir Harold fit des commentaires sur la réussite d'une plastique du pénis qu'il décrivit très fonctionnel pour les deux rôles à remplir. J'identifiai notre jeune blessé de Normandie et ce fut une très heureuse surprise.

Ainsi donc, nous n'avons jamais eu l'impression de ne pas disposer des moyens pour pouvoir faire pour nos blessés tout ce qui était possible. Nous avons aussi eu la chance, grâce à ceci, de ne jamais avoir de décès sur la table d'opérations. Je crois utile de faire encore une remarque sur l'atmosphère psychologique dans laquelle nous avons travaillé et ce pour la raison suivante. En 1970 fut diffusé, avec grand succès commercial, le film MASH, ayant comme cadre le Service de Santé dans la Guerre de Corée. Dans la société moderne, les images du cinéma tendent à être une référence pour le public. En occurrence, cette image était une farce grotesque, choquante en rapport avec le sujet traité. Dans la réalité vécue en Normandie, nous n'avons jamais envie de plaisanter mais étions profondément tourmentés par les drames dont nous étions témoins.

Le registre des opérations que nous avons pratiquées n'a pas été retrouvé. Dans un rapport du Commandant du 33 CCS, le Lt. Col. Heywood Jones, contenant des analyses statistiques, la durée moyenne des opérations fut de 1 h. 42 min. Sur cette base, nous aurions soigné environ 150 blessés au cours de la bataille de Normandie (Public Record Office, London) Doc. WO 222/701).

### **Fin de, a campagne**

Continuellement absorbés par le travail, nous étions peu informés sur l'évolution de la situation militaire, conscients seulement de l'âpreté

des combats par l'afflux des blessés, notamment de la fameuse poche de Falaise. Quelquefois, nous entendions des explosions lointaines, mais elles ne perturbaient nullement notre activité. Nous étions confiants sans rien savoir de précis.

Durant tout ce mois d'août, la Brigade belge avait combattu en direction Nord-Est parallèlement à la côte atlantique. Elle avait franchi successivement les obstacles naturels des rivières Orne, Dives, Touges, Risie et libéré de nombreuses petites villes et villages, Franceville, Merville, Cabourg, Pont-l'Evêque, Pont-Audemer, Auberville, Villers-sur-Mer, Deauville, Trouville, Honfleur (Fig. 1). Ses missions militaires avaient été exécutées avec brio. En témoigne le message de félicitations envoyé le 29 août par le Major-Général Richard Gale, Commandant de la "6th. Airborne Division" (1). Il est bien connu que nos amis anglais ne sont guère prodigues en éloges et ceux qu'ils exprimaient ont été indubitablement bien mérités. L'objectif suivant pour la Brigade était de pousser vers Le Havre, port d'importance stratégique. Mais le 1 septembre, il apparut que, sur tout le front de Normandie, les Allemands reculaient en déroute. Les ordres furent alors changés et la Brigade Belge allait prendre place derrière la "Brigade of Guards" pour marcher sur Bruxelles.

Nous reçûmes ainsi subitement à la 33CCS, le 1 septembre, l'ordre pour les Belges de charger le matériel, toutes affaires cessantes, et de partir vers Rouen et y rejoindre la Brigade Belge. Ce fut une surprise totale avec une explosion de joie. Le passage de Caen nous donna le spectacle des effroyables destructions de guerre (fig.6). Nous pûmes traverser la Seine à Rouen sur un pont de chemin de fer, dont le tablier était brisé, encombré de débris et de cadavres de chevaux, mais franchissable (fig. 7). Dans l'après-midi du 4 septembre, nous entrâmes dans Bruxelles libéré, dans une atmosphère de liesse inoubliable. C'était l'heureuse clôture de la bataille de Normandie.

## 50 ans plus tard

Bien qu'ils ne remontent qu'à 50 ans, les faits relatés sont devenus de l'histoire, appartenant à un passé révolu. Bien des pratiques décrites ont cessé d'exister. Pour une autre raison aussi, la médecine militaire de 1944 est devenue histoire. A l'époque, pour sauver des vies humaines, la chirurgie était portée vers le blessé, près du front. Avec la performance actuelle des hélicoptères, il est devenu possible et plus rationnel de transporter avec rapidité les blessés vers des hôpitaux civils normaux plutôt que de les soigner dans des conditions de camping de boy-scouts et de bricolages inventifs.

Il est difficile et serait présomptueux de porter un jugement d'ensemble sur le travail des unités de chirurgie militaires en 1944. Une comparaison avec la Première Guerre Mondiale conduit clairement à la conclusion de progrès énormes. Par rapport à la campagne de 1940, tous les récits dont j'ai eu connaissance furent un écho de confusion, de désordre et d'incapacité, liés aux conditions militaires. Pour 1944, il reste le sentiment d'avoir pris part à une action qui avait été magnifiquement préparée et planifiée et où tout a fonctionné admirablement, avec une organisation et une discipline sans faille.

Moralement, se pencher sur ce passé éveille des sentiments mêlés. Il y a eu les drames douloureux qu'engendre toute guerre. Etre témoin d'un défilé d'hommes jeunes et vaillants, brutalement anéantis ou partiellement démolis est terriblement bouleversant. Dans la bataille de Normandie, la Brigade Belge a perdu 28 hommes. Parmi ceux-ci, il y avait un ami proche, le Lt. Benjamin Pinkous, blessé mortellement à la traversée de la Touques. Etudiant en pharmacie, il se trouvait avec moi au Centre d'Instruction du Service de Santé belge aux Sables d'Olonne le 18 juin 1940, lors de la capitulation de Pétain. Nous avions fait ensemble notre évasion vers l'Angleterre et partagé de périlleuses aventures. Il a suivi la formation à l'Ecole

des Officiers de Sandhurst et ensuite celle de commandos en Ecosse. Il est tombé, comme il est dit, "au champ d'honneur". Mais déjà avant l'engagement au combat, l'entraînement rude durant les années de préparation fit des victimes qui sont mortes sans aucune gloire. Un camarade très attachant, Robert Stenuit, étudiant en philosophie et lettres, d'un caractère joyeux, véritable boute-en-train, s'est tué en vol d'entraînement sur un avion Spitfire. Je fus témoin de la mort accidentelle du Capitaine Georges Truffaut, député socialiste, très aimé de ses hommes. Dirigeant un exercice de lancement de grenades pour sa Compagnie, il n'appliqua pas assez pour lui-même les précautions qu'il recommandait. Un éclat pénétra par l'orbite dans son crâne et il fut tué sur le coup.

Personnellement, je suis un enfant de la Première Guerre Mondiale. Sur les bancs de l'école, il me fut enseigné que la guerre 1914-1918 avait été la dernière et que dorénavant les conflits entre Etats seraient résolus au sein de la Société des Nations. Les paroles du maître de classe étaient, pour moi comme pour tout enfant, la vérité. Les événements n'ont point tardé à démentir cette affirmation. L'agressivité est regrettamment un trait de la nature humaine. Nous continuons à voir des nations et des groupes humains s'affronter sauvagement dans une compétition vaniteuse pour le pouvoir. Toutefois, notre combat dans la Deuxième Guerre Mondiale avait un objectif d'une signification supérieure : celui de reconquérir une vie de liberté. Aux sacrifices que nous avons dû subir, avec nos alliés de 1939 à 1945, l'alternative était un monde dirigé par des Hitler, des Mussolini, leurs émules et acolytes. Après une guerre meurtrière nous ne vivons certes pas dans un monde qui nous satisfait, mais nous pouvons considérer que nous avons au moins évité un monde pire.

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## Note biographique

*Né en 1917 à Scheveningen, Hollande, l'auteur était en fin d'études de médecine à l'Université Libre de Bruxelles lorsque, le 10 mai 1940, l'armée allemande envahit la Belgique. Ayant rejoint comme volontaire le Service de Santé de l'Armée Belge, il quitta le continent européen après la capitulation de Pétain pour rejoindre les Forces Belges Libres en formation en Grande-Bretagne.*

*Là il apprit la spécialité d'anesthésiologie, inexistante à l'époque en Belgique. Ayant participé comme anesthésiste à la bataille de Normandie, il en fit sa profession après la guerre. Il créa ainsi à l'Institut Jules Bordet le premier Centre d'Anesthésiologie des hôpitaux universitaires de Bruxelles. Il y développa l'enseignement de cette spécialité, fut un des fondateurs de la Société Belge d'Anesthésie et de Réanimation et secrétaire de rédaction des Acta Anaesthesiologica Belgica.*

*Ses publications ont principalement porté sur divers agents anesthésiques qui ont été introduits dans la pratique clinique depuis 1944, les effets de ces produits sur la circulation cérébrale, certaines complications peropératoires et postopératoires ainsi que des sujets d'Histoire de la Médecine, de l'anesthésie et de la réanimation.*

**C'est avec tristesse que nous avons appris le décès du Prof. Henri Reinhold le 15 septembre 1995, à Emek Soreq, Israël. Nous présentons à sa famille et ses proches nos plus sincères condoléances.**

## ***Mondino's book and the human body***

Mark H. Infusino, Dorothy Win and Ynez V. O'Neill

### **Abstract**

*The assertion that Mondino da Luzzi, the 14th Century Bolognese anatomist, was the first genuine human anatomist is questioned. Mondino's work is examined and his findings shown to be less than original. The investigations of surgeons, who conducted post mortem examinations during the 13th Century are highlighted, their contributions to anatomical science underscored, and their knowledge of human structure reexamined and evaluated.*

### **Résumé**

*L'assertion selon laquelle Mondino da Luzzi, l'anatomiste bolonais du quatorzième siècle était le premier anatomiste humain authentique est remise en question. L'oeuvre de Mondino est réexaminée et les résultats démontrent qu'elle est moins originale qu'estimée auparavant. Les recherches entreprises sur les chirurgiens qui ont pratiqué des autopsies au cours du treizième siècle sont rapportées ici, ceci montre que l'importance de leurs contributions à l'anatomie a vait été sous-évaluée jusqu'à ce jour. Leur approche du corps humain est ainsi réexaminé et réévalué.*

One of the common assertions in many accounts of medical history, is that an early 14th century book written by a Bolognese academician, Mondino da Luzzi, was the first text of human anatomy (Major 300; Singer 1928 74). Castiglione, one of the most eminent medical historians of the twentieth century, suggests that it "may be regarded as the first anatomical text worthy of the name" (Castiglione 343). In keeping with this tradition, over thirty years ago, the eminent Vesalian scholar, CD. O'Malley, described Mondino's *Anothomia* which the Bolognese professor completed in 1316, as the first modern book on anatomy. O'Malley explained this judgement by noting that Mondino's master opus was the first work devoted exclusi-

vely to the subject, and that it contained a few observations derived from its author's own dissection of human cadavers (O'Malley 13).

If one accepts these qualifications, O'Malley's dictum can still be defended. Certainly, Mondino's methods were extremely influential in academic circles and his work was used as the definitive text for university dissections until Vesalius' time and slightly beyond (Ongaro, 68-82). The anatomical demonstrations and lectures that Vesalius delivered to students in Bologna in 1540, some three years before the publication of his *Fabricawere* organized as a commentary on Mondino's *Anothomia* (Heseler 45). But during the last quarter century, we have learned that Mondino's work drew little from its author's practical experience (Kudlien 1964 210-214). The corpus he relied on chiefly was a body of text, the mass of material available to him from the translations of Arabic and Greek texts effected during the 11th, 12th and 13th centuries.

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Mondino's work can be shown to have incorporated the observations of earlier classical and Islamic investigations, particularly those of Galen and Avicenna. More surprising perhaps is the influence of the so-called Salernitan anatomists which pervade the treatise. Statements from the works of these animal dissectors of more than a century earlier who, like Mondino, worked in an academic setting, are more frequent than are statements of his own findings. In fact, one eminent medical historian and medievalist asserted that "If we must have a sudden rebirth... (these animal dissectors)... make the best case" (MacKinney 233). His own examinations of human material and those of his contemporaries exerted relatively little effect on his text.

Mondino's discussion of the uterus is illustrative of this point. Although he tells us he dissected the bodies of two women in 1315, and discovered that the uterus of one was almost twice as large as the other, he continues to repeat the old fallacy that the human uterus is divided into seven cells (Singer 1925 76). This traditional view enjoyed a distinguished lineage having been proposed, if not originated by the author of the so-called first Salernitan anatomy, written in the twelfth century which described the dissection of a pig.

In all of the late versions of the *anatomia porci* the legend of the seven-celled uterus is propounded (Corner 53; Sudhoff K. 144; Kudlien, 1965 415-416; Reiser 54-55). Mondino seems to have subscribed to this traditional myth despite his contention that he had actually performed human dissection. Perhaps he was confused by the sow, pregnant with thirteen unborn piglets, that he dissected a year after dissecting the two women (Dryander 26v; Singer 1925 76).

Mondino also accepted the notion that the human uterus had horns. This idea was to continue for two centuries. It was illustrated in the *Isagogae* of Berengario da Carpi, a 16th century commentator on Mondino's *Anothomia*,

where a rather plump woman points to an object on a pedestal which is purported to be her own uterus, but is in fact the uterus of a cow (Berengario da Carpi 1522 24v 1522; Lind 79). The uteri of sows, cows and some other mammals do indeed have hornlike appendages.

The picture also serves to illustrate the perhaps unfortunate durability of Mondino's influence. Berengario, who some two centuries later succeeded Mondino in the Bolognese chair of anatomy, designed his massive major work as a commentary on Mondino's *Anothomia* (Berengario da Carpi 1521). Although Berengario's *Commentaria* proper has no illustrations, its digest, the *Isagogae* does, and it is from that work that the strange amalgam of human and animal anatomy derives.

Moving to another anatomical locus, the classical notion of functional localization in three cerebral chambers, the sites respectively of fantasy, cognition and memory, is illustrated in another of Berengario's works, his discussion of head injuries, *Tractatus de fractura calve (sic) sive cranei* (Berengario da Carpi, title page 1518). Mondino diverges from this the most prevalent form of the localization doctrine, not again as the result of empirical investigation, but because of his adherence, as he himself tells us, to Avicenna's insistence on distinguishing fantasy from imagination (Clarke and Dewhurst 20-21; Dryander 52r; Singer 1925 90-91). It should be noted, however, that he apparently had no use for Avicenna's separation of *cogitativa* and *estimativa*. To Mondino this doctrine, required *a priori*, a four chamber, or at least a "double chamber plus two" physiology and anatomy, affording another example of his reliance on textual authority.

The effect of Galenic authority is reflected in Mondino's contention that injuries to different parts of the brain resulted in different disturbances of cerebral function. This notion contrasts with that of Avicenna but can be traced to the

Galenic work *De locis affectis* (Galen 327 ff.), where Galen by way of clinical observation, comes nearest to formulating a localization theory of brain function. This Galenic work would have been available to Mondino, as it was translated from Greek to Latin in the late 12th century and Mondino apparently found it a useful prop to his version of cerebral ventricular theory. Mondino also follows Galen in maintaining that a *rete mirabile* or miraculous network, which we know is found only in the brains of ungulates, can be found in the human cerebrum (Singer 1925 94).

It is in his description of cardiac form and function, however, that Mondino displays the greatest devotion to his chief classical authority, Aristotle, even if obtained second hand through the writings of Avicenna. Mondino, like Aristotle, believed the heart's central position in the body demonstrated its role as the "source and ultimate root of all the organs" (Dryander 36v; Singer 1925 82). The most obvious Aristotelian influence in Mondino's cardiac account, however, is his contention like Aristotle's that the heart is three chambered.

Several aspects of this description are curious, but we will analyse only one. It involves instructions for dissecting the heart in order to make the supposed "three chambers" appear. *"Cut then the heart, first in the right side beginning from the point, yet guarding thyself against reaching the opposite wall, but dividing at the side of the middle ventricle... When you have seen this, cut open the left ventricle leaving whole the middle wall where is the third ventricle... No less wondrous is the middle ventricle. For this ventricle is not one cavity but many small cavities, extending rather toward the right than the left, to the end that the blood which crosseth from the right ventricle to the left may be continually subtilized as to be turned into spirit"* (Dryander 37r-37v; Singer 1925 83-84 ff.).

Thus what Mondino does here is reconcile Aristotle's vision of a triventricular heart with the Galenic notion that the interventricular cardiac septum is permeable and acts as a filter allowing only the most rarefied portion of the blood to reach the left ventricle where it is concocted into vital spirit. Mondino thus conflates the opinions of Aristotle with those of Galen which allows him to preserve the Galenic idea that the vital spirit which moved in the arterial blood was formed in the middle ventricle whose existence Aristotle had maintained.

These selected examples then illustrate that Mondino's authorities were more important to his thinking and text than was the empirical evidence he obtained from the dissection table. But are we being too harsh? Were any of Mondino's contemporaries willing or able to defy authoritative dicta on the basis of their empirical observations concerning human anatomy? Obviously this article would not have been written had there not been.

There was, in fact, a 70-year old tradition of surgeons proceeding in precisely this fashion. They are known to twentieth-century scholars as the New Surgeons or the School of Bologna, and to themselves as the *moderni*. The most industrious, and with a certain sad irony, the last of this line was Mondino's contemporary, Henri de Mondeville, a French surgeon. Henri studied medicine and surgery at Paris in the 1270's and like other *moderni*, gained clinical experience on battlefields. While serving with the royal armies of Philippe le Bel, he may even have travelled to England in the retinue of the king's brother, Charles de Valois. On his return to France Henri laboured long and hard, to compose his *Great Surgery*, with a major chapter on anatomy, revising it right up until his death sometime after 1320 (O'Neill and Infusino 223-226).

As a military surgeon, Henri was particularly interested in head injuries. Having read Aristotle's contention that male craniums contained three

**Tractatus de Fractura Calvae siue  
Cranei a Carpo editus.**



*Wicentius Riccardi Sc., et. M., et. amicis*

sutures and females only one, he decided unlike many of his predecessors to examine them :

*It is necessary to note that, despite the popular misconception on the difference between the bones and the sutures of the female and the male, and even though the Philosopher, in the first book of De historiis, at the beginning of chapter 4, speaking of the anatomy of the cranium, may say that there is a round bone having in women one single suture in the circumference of the head, and in males three, which rejoin into one ... it is necessary to note that in truth there is absolutely no difference between them, as one can demonstrate in the ossuary of the Cemetery of the Holy Innocents, where one can find one hundred thousand skulls. (Nicaise 34).*

Henri's empirical emphasis comes through again in his use of pictures during his anatomy classes -- an innovation -- and by his advice to other teachers to teach cranial anatomy from a detailed wooden model of the human head (Nicaise 26; Mackinney 235). As an academician, however, Mondeville was also influenced by Aristotle in style and in some cases in substance.

A thirteenth century surgeon who was willing to diverge from classical authorities was the Piacenzian, William of Saliceto, a medieval surgeon who explicitly emphasizes the empirical and practical side of anatomy :

*(Therefore,) it seems to me better and more useful to proceed, generally, in anatomy, as I promised, that is, in exposing the number, and the form, and the site, and the location of the members which can be made manifest to the senses, so that you, in the course of incisions, cauteries, and manual procedures can proceed in them without error. (William of Saliceto 163r)*

William wrote a topographical anatomy that described structure and only structure. Little if any physiological discussion, Galenic or Aristotelian interrupts his straight descriptive anatomy.

When, in the anatomical chapter in his *Surgery*, he arrived at the ventricles of the brain, the seats of human perception, cognition and memory, he faced a challenge to his matter-of-fact approach. These essential organs were usually conceived of as hollows, often not those beneath the brain, as in our modern terminology, but lost somewhere amid the folds of the meninges (the tough connective tissues protecting the brain). Most earlier writers had covered their vagueness with lengthy discussion of cerebral function (Sudhoff W. 149-181; Clarke and Dewhurst 10-44).

Mondino, as we saw above, simply appropriated Avicenna's discussion. William, in his characteristic style, gets right down to the facts of size, number, form and location as he believed he had seen them. Indeed he had seen them, since he decides that the ventricles must be what we call the anterior, medial and posterior lobes of the brain, the "rounded protuberances above the cavities" as he puts it (William of Saliceto 163r).

William avoids another old "ghost" of cranial anatomy, the alleged existence of "*rete mirabile*", a netlike cushion of vessels, beneath the human brain. "That blessed and wonderful reticular plexus", as Vesalius was to complain centuries later, "there is nothing of which physicians speak more often -- even though they have never seen it ! " (O'Malley 179). In contrast to Mondino's dutiful repetition of this error, William simply proceeds to describe the hollows we call ventricles which do in fact exist there. Henri de Mondeville feels obligated to mention the "*rete*", but only briefly, as an after thought to his cranial discussion, and seems at pains to identify this structure with the blood vessels around the pituitary (Nicaise 37).

How, you may wonder, did Saliceto get access to cadavers if he was not primarily an academician ? One motive -- or pretext -- was forensic. In an earlier article, an autopsy ordered at the beginning of the 13th century by Pope Innocent III has been analyzed (O'Neill 429-433). Not only church officials, but city authorities as well, wanted to know cause of death in cases of injuries inflicted in brawls, in cases of suspected poisoning, and in cases of suspected pestilential death. Surgeons were called on to make these inquiries. In addition surgeons regularly performed, for families who could afford it, functions for which we would call a mortician. Such services often called for considerable dismemberment of the cadaver, for preservative purposes, or (just as often it seems), for pious ones. A lord or lady might want his or her heart buried at a favorite monastery or shrine, the head at the seat of power during life and the "remaining remains", if we may so express it, at the original family home. Pope Boniface may not have liked such practices (and it was at these procedures, not at academic dissections, that his famous bull against dismemberment was aimed) but kings and nobles usually went ahead and continued them anyway, as a recent study has shown (Brown 1990 803-832 and 1985 241 - 266).

The forensic motive may have been more prominent in Italy because of its legalistic climate, and the pious impulse more influential in Northern Europe - England, France and Germany. In any case, prominent, well-educated physician-surgeons like these predecessors and contemporaries of Mondino had many very specific questions about the human body, and a number of opportunities to answer them.

The credentials of a purely academic text like Mondino's for the title of "first anatomical text worthy of the name" are therefore shaky. This formal treatise seems to have less right to the title than do the surgical and medical texts written by the enterprising surgeons who conducted procedures on human cadavers with a practiced and critical eye. Their contributions may have been recorded in mere chapters rather than separate accounts, but one cannot help but suspect that if the advancement of anatomy had been left to investigators like them, rather than to the likes of Mondino, Guido de Vigevano, or Guy de Chauliac, and the classicists, Europe might not have needed to wait 250 more years for an Andreas Vesalius of Brussels to offer a credible response to the challenges posed by Galen and Aristotle. Until then, the books obscured the body more than they revealed it.

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### Biographies

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## **Contraception and Abortion in the Greco-Roman World**

Plinio Prioreshi

### **Summary**

*The author discusses the validity of the claim that, in Antiquity, effective contraceptives and abortifacients were available, were widely used, and their use was responsible for the decline of population in certain periods. After reviewing the maneuvers and drugs used for those purposes, the author concludes that ancient physicians did not have at their disposal effective contraceptives and abortifacients other than those that acted mechanically. In view of the danger associated with the mechanical induction of abortion, the ineffectiveness of pharmacological agents, and the limitations of mechanical contraceptives, it is concluded that drugs and other means of inducing abortion and contraception had a very limited impact on population in Antiquity.*

### **Résumé**

*L'auteur revient sur l'affirmation selon laquelle, tout au long de l'Antiquité, il existait des moyens contraceptifs et abortifs largement utilisés qui pouvaient expliquer la diminution de la natalité à certaines périodes. Après avoir passé en revue les techniques et les substances utilisées, l'auteur conclut qu'hormis les techniques mécaniques, les anciens médecins n'avaient pas à leur disposition d'autre moyen anti-conceptionnel ou abortif efficace. Vu les complications survenant lorsqu'on déclenchait un avortement et l'inefficacité des thérapeutiques, l'auteur conclut que l'avortement et la contraception n'ont vraisemblablement eu qu'un impact très limité sur la densité de population durant l'Antiquité.*

It would appear that in the classical world there were periods during which population declined and legislators tried to take measures to reverse the trend (1). In the second century B.C., Polybius decried the decline of the population of Greece (2), and in Rome the censor Quintus Metellus (late second century B.C.) wanted to make marriage obligatory to encourage the generation of offspring; later, Augustus introduced legislation designed to increase the number of children (3).

Sexual restraint, delayed marriages, coitus interruptus, infanticide, and child abandonment have all been considered as possible reasons for the decline in population, but it has been held that there is not enough historical evidence to justify the conclusion that such factors were significant (4) although, in the case of infanticide, some disagree (5). The contraceptive effect of lactation was unknown to ancient physicians (6) and it is therefore unlikely that it was purposefully used by women to avoid conception.

Contraception and abortion could have been responsible for the population decline but before we can conclude they were causative factors we must decide if effective agents for those purposes were available at the time.

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Ancient medical literature often refers to mechanical and pharmacological means for abortion and contraception. Abortifacients are mentioned in more or less detail in the surviving works of Aetius, Aristotle, Caelius Aurelianus, Celsus, Dioscorides, Galen, Hippocrates (that is, the Hippocratic Corpus), Mustio (or Moschion), Oribasius, Paulus Aegineta, Pliny, S. Placitus Payriensis, Ps. Apuleius Platonicus, Soranus, Theodorus Priscianus. With the exception of Celsus, Mustio, and Theodorus Priscianus, the same authors also discuss contraceptives (7).

It has been said that, because modern pharmacology has shown that some of the plants used in Antiquity for this purpose contain active abortifacients, "the findings of modern medical science... enable us to believe the testimony of historical documents concerning the use of plant substances for birth control," and that indeed women had at their disposal effective contraceptive drugs" [from Antiquity] right up to the twentieth century" (8).

We believe that such a conclusion is unjustified. Although there is no question that many contraceptives and abortifacients are mentioned in ancient medical literature (9), some passages suggest that they were not always effective. In the case of abortifacients, for example, we find in Ovid an example of failure to produce an abortion with herbs and medications :

*What herbs and what medicines did my nurse not bring to me and put them underneath with bold hand so that the growing burden could be driven out from deep in my bosom... Ah, too full of life, the baby resisted all attempts and was saved from his hidden enemy (10).*

And a passage of Procopius says :  
*Now she had chanced to conceive a child by one of her lovers while she was still on the stage, and being late about discovering her misfortune she did everything to accomplish, in her usual way, an abortion, but she was unsuccessful, by all the means employed, in*

*killing the untimely infant, for by now it lacked but little of its human shape. Consequently, since she met with no success, she gave up trying and was compelled to bear the child (11).*

This passage suggests that the lady (who was to become, as wife of Justinian, the Empress Theodora) previously had abortions but could not find an effective abortifacient for a more advanced pregnancy.

In addition, an evaluation of the many alleged contraceptive and abortive agents found in ancient literature leads to the conclusion that most of them were ineffective. We have chosen the following as representative samples from ancient literature (12) :

### **Contraceptive agents**

#### **a) Mechanical (locally acting)**

Smearing "that part of the uterus on which the seed falls", i.e., the cervix, with cedar oil or cosmetic white or frankincense (13); intravaginal application of axe-weed and honey (14); alum (15); cabbage (after coition) (16); coronilla (17); pepper (after coition) (18); wool plugs (19).

#### **b) Systemic**

Administration (by mouth) of asplenon (a plant also called hemionion) (20); fern (21); rue (22); mint (23); *thelypteris (pteris aquilina*, a fern) with honey and wine (24); eating the small worms supposedly bred by parsley (25); willow leaves (26); drinking fern root or flowers and leaves of willow in wine (27); ingestion of copper salts (28).

#### **c) Others**

Letting the semen come out of the vagina after coitus (29); sneezing after sexual intercourse (30); smearing cedar oil over the penis before coition (31). Preparations that decrease sexual desire could be considered as indirect contraceptives. According to Pliny, the ashes of

the nails and of the hide of the lynx, taken in drink by men, decrease their libido and the same result is observed when those ashes are sprinkled on women (32). Goats, ticks and bulls can be used for the same purpose :

*... if the loins of a woman are rubbed thoroughly with the blood of a tick from a black wild-bull, she will be disgusted with sexual intercourse, and also with her love if she drinks the urine of a he-goat, nard being added to disguise the foul taste (33).*

Similarly, men's libido can be decreased by the ingestion of the parts of certain plants, such as *condrion (condrilla)* (34). Some contraceptive agents took the form of amulets :

*There is also a third kind of phalangium, a hairy spider with an enormous head. When this is cut open, there are said to be found inside two little worms, which, tied in deer skin as an amulet on women before sunrise, act as a contraceptive, as Caecilius has told us in his Commentarii. They retain this property for a year. Of all such preventives this only would it be right for me to mention, to help those women who are so prolific that they stand in need of such a respite (35). Wear the liver of a cat in a tube on the left foot ... or else wear part of the womb of a lioness in a tube of ivory. This is very effective (36). [Asparagus] being hanged about [as an amulet], and the decoction of it drunk, it makes one barren, and not fit for generation (37).*

It was also believed that contraception could be achieved by smearing the penis with green mint before copulation (38), or by the smearing of the body of the woman with menstrual blood or by her stepping over it (39).

### Abortives

#### a) Mechanical

By mechanical abortive agents it is meant sharp-edged instruments and shafts introduced

into the pregnant uterus (40). Most of the evidence that abortion was produced by such means comes from Ovid (41) although Soranus also mentions them (see below).

#### b) Systemic

Administration, by mouth, of fern (42); rue (43); *thelypteris (pteris aquilina)*, a kind of fern with honey and wine (44); seeds of wallflower with wine (45); beaver's testicles (46); goat's fung with aromatic herbs (47); a decoction of clinopodium (48).

#### c) Others

The smell of lamps being put out (49); alum intravaginal (50); various pessaries (made with cabbage (51); savin, myrrh, lupine, centaury, etc.) (52) (53).

The following passage from Soranus includes contraceptives and abortifacients of most of the categories just mentioned (54) :

*For if it is much more advantageous not to conceive than to destroy the embryo, one must consequently beware of having sexual intercourse at those periods which we said were suitable for conception (55). And during the sexual act, at the critical moment of coitus when the man is about to discharge the seed, the woman must hold her breath and draw herself away a little, so that the seed may not be hurled too deep into the cavity of the uterus. And getting up immediately and squatting down, she should induce sneezing and carefully wipe the vagina all round; she might even drink something cold. It also aids in preventing conception to smear the orifice of the uterus all over before with old olive oil or honey or cedar resin or juice of the balsam tree, alone or together with white lead; or with a moist cerate containing myrtle oil and white lead; or before the act with moist alum, or with galbanum together with wine; or to put a lock of fine wool into the orifice of the uterus; or, before sexual relations to use vaginal*



*suppositories which have the power to contract and to condense. For such of these things as are styptic, clogging, and cooling cause the orifice of the uterus to shut before the time of coitus and do not let the seed pass into its fundus. [Such, however, as are hot] and irritating, not only do not allow the seed of the man to remain in the cavity of the uterus, but draw forth as well another fluid from it.*

*And we shall make specific mention of some. Pine bark, tanning sumach, equal quantities of each, rub with wine and apply in due measure before coitus after wool has been wrapped around; and after two or three hours she may remove it and have intercourse.*

*Another: Of Cimolian earth, root of panax, equal quantities, rub with water separately and together, and when sticky apply in like manner. Or : Grind the inside of fresh pomegranate peel with water, and apply. Or. Grind two parts of pomegranate peel and one part of oak galls, from small suppositories and insert after the cessation of menstruation. Or: Moist alum, the inside of pomegranate rind, mix with water, and apply with wool. Or: Of unripe oak galls, of the inside of pomegranate peel, of ginger, of each 2 drachms, mould it with wine to the size of vetch peas and dry indoors and give before coitus, to be applied as a vaginal suppository. Or: Grind the flesh of dried figs and apply together with natron. Or: Apply pomegranate peel with an equal amount of gum and an equal amount of oil of roses.*

*Then one should always follow with a drink of honey water. But one should beware of things which are very pungent, because of the ulcerations arising from them. And we use all these things after the end of menstruation.*

*Moreover to some people it seems advisable: once during the month to drink Cyrenaic balm to the amount of a chick-pea in two cyaths of water for the purpose of inducing*

*menstruation. Or : of panax balm and Cyrenaic balm and rue seed, of each two obols, [grind] and coat with wax and give to swallow; then follow with a drink of diluted wine or let it be drunk in diluted wine. [Or:] Of wallflower seed and myrtle, of each three obols, of myrrh a drachm, of white pepper two seeds; give to drink with wine for three days. Or: of rocket seed one obol, of cow parsnip one-half obol; drink with oxymel. However, these things not only prevent conception, but also destroy any already existing. In our opinion, moreover, the evil from these things is too great, since they damage and upset the stomach, and besides cause congestion of the head and induce sympathetic reactions. Others, however, have even made use of amulets which on grounds of antipathy they believe to have great effect; such are uteri of mules and the dirt in their ears and more things of this kind which according to the outcome reveal themselves as falsehoods.*

*Yet if conception has taken place..., for 30 days, ...in order that the embryo be separated, the woman should have [more violent exercise], walking about energetically and being shaken by means of draught animals; she should also leap energetically and carry things which are heavy beyond her strength. She should use diuretic concoctions which also have the power to bring on menstruation, and empty and purge the abdomen with relatively pungent clysters; sometimes using warm and sweet olive oil as injections, sometimes anointing the whole body thoroughly therewith and rubbing it vigorously, especially around the pubes, the abdomen, and the loins, bathing daily in sweet water which is not too hot, lingering in the baths and drinking first a little wine and living on pungent food. If this is without effect, one must also treat locally by having her sit in a bath of a decoction of linseed, fenugreek, mallow, marsh mallow, and wormwood. She must also use poultices of the same substances*

and have injections of old oil, alone or together with rue juice or maybe with honey, or of iris oil, or of absinthium together with honey, or of panax balm or else of spelt together with rue and honey, or of Syrian unguent. And if the situation remains the same she must no longer apply the common poultices, but those made of meal of lupine together with ox bile and absinthium, [and she must use] plasters of a similar kind. For a woman who intends to have an abortion, it is necessary for two or even three days beforehand to take protracted baths, little food and to use softening vaginal suppositories; also to abstain from wine; then to be bled and a relatively great quantity taken away. For the dictum of Hippocrates in the "Aphorisms", even if not true in a case of constriction, is yet true of a healthy woman: "A pregnant woman if bled, miscarries". For just as sweat, urine or faeces are excreted if the parts containing these substances slacken very much, so the fetus falls out after the uterus dilates. Following the venesection one must shake her by means of draught animals (for now the shaking is more effective on the parts which previously have been relaxed) and one must use softening vaginal suppositories. But if a woman reacts unfavorably to venesection and is languid, one must first relax the parts by means of sitz baths, full baths, softening vaginal suppositories, by keeping her on water and limited food, and by means of aperients and the application of a softening clyster; afterwards one must apply an abortive vaginal suppository. Of the latter one should choose those which are not too pungent, that they may not cause too great a sympathetic reaction and heat. And of the more gentle ones there exist for instance: of myrtle, wallflower seed, bitter lupines equal quantities, by means of water, mould troches the size of a bean. Or : of rue leaves 3 drachms, of myrtle 2 drachms and the same of sweet bay, mix with wine in the same way,

and give her a drink. Another vaginal suppository which produces abortion with relatively little danger : of wallflower, cardamom, brimstone, absinthium, myrrh, equal quantities, mould with water. And she who intends to apply these things should be bathed beforehand or made to relax by sitz baths; and if after some time she brings forth nothing, she should again be relaxed by sitz baths and for the second time a suppository should be applied. In addition, many different things have been mentioned by others; one must, however, beware of things that are too powerful and of separating the embryo by means of something sharp-edged, for danger arises that some of the adjacent parts be wounded. After the abortion one must treat as for inflammation (56).

## Discussion

It is evident that an intravaginal foreign body mechanically obstructing the *ostium* uter/would be an effective contraceptive and that the dilatation of the *ostium* produced by the introduction of an instrument or foreign body during pregnancy would indeed cause abortion.

As for the efficacy of non-mechanical means of contraception and abortion, a perusal of the examples given above indicates that some of the plants and maneuvers used were obviously ineffective (wearing amulets, smearing the penis with mint, drinking urine of she-goat, sneezing after coition, etc.). What about the others ?

The number of pharmacological agents used in ancient medicine is very large (in the Hippocratic corpus the medicinal plants number in the hundreds (57) and there are about 900 entries in the herbal of Dioscorides (58)); it is evident that some of them must have had pharmacological properties. Of the hundreds used as contraceptives or abortifacients (59), a handful have been found, in fact, to have contraceptive and abortifacient properties (60), although they are

not used as such in contemporary medicine. Even assuming, however, that those agents were effective and safe, it must be underlined that, as a general rule, the finding that among the many plants used for a particular purpose some have the pharmacological capacity of producing the desired effect does not allow us to conclude that the ancient physician used them because he knew that they possessed such a capacity (61). Three conditions have to be fulfilled before we can draw such a conclusion : 1) that those plants were used more than others in the particular clinical situation; 2) that the doses were sufficient to produce the effect; 3) that the preparation was appropriate and used properly.

Often we find that in ancient therapeutics one or more of these conditions were not met. Usually, the effective plants were not used more often than the ineffective ones and, in such cases, one cannot avoid concluding that the effective plant was included in the therapeutic regimen by chance.

If, for example, we try to determine whether, in the *Corpus Hippocraticum*, *papaver somniferum* was employed for the control of pain, we find that the plant was used often, it is true, but usually with other plants and for such disparate conditions as empyema (62), "phthisis" (63), "typhus" (64), leucorrhoea (65), habitual abortion (66), "dropsy of the uterus" (67), metrorrhagia (68), and "displacement of the uterus" (69). In all these cases there is no mention of pain. On only three occasions is the relief of pain mentioned, and, in two of these, poppy is used as one ingredient in a mixture with other drugs (thirty in one case (70), four-burned for fumigation - in another (71)) and in the one other case it is given with just one other drug (72). Therefore, the mere fact that the Hippocratic physician used poppy does not warrant concluding that it was used for the purpose of controlling pain.

In addition, in antiquity, the doses of contraceptives and abortifacients either were not

indicated or were similar to those used for other medications, and modern observations concerning the ingestion of large quantities of a given agent by animals are not applicable to medications taken by women in antiquity. For example, in the 1940s it was found that, in Australia, sheep grazing on a particular type of clover showed sharply reduced fertility. The explanation was found to be that the clover contained substances (isoflavonoids) that reduce fertility (73). Were we to find that the same type of clover was used in Antiquity as a contraceptive (74), would we be justified in assuming that the ancients had identified a plant that effectively interfered with conception ? Of course not, because the Australian sheep were eating quantities of clover, in relation to their body weight, much greater than the quantities that women could have ingested.

Moreover, it was necessary that an effective medication be used properly, it is evident that if cedar oil applied intravaginally in sufficient quantity could have prevented, mechanically, the entrance of the sperm into the uterus, the smearing of the penis with the same substance would have no effect. Similarly, cabbage introduced into the vagina before coition could have been an effective contraceptive (for the same mechanical reasons) but evidently not when inserted after. We have seen above that both these inappropriate means were used. Among the large number of agents applied intravaginally as contraceptives, the possibility that some may have created a chemical milieu unsuitable for the spermatozoa cannot be excluded. In this case they would have had a contraceptive action independent of their capacity to obstruct the *ostium uteri*. As the physician was not aware of such chemical properties, however, the use of such drugs would have been random. This being the case, it is unlikely that these drugs could have had a significant effect on the decrease of fertility. As for the systemically administered abortifacients used in antiquity, the possibility that they could

have been effective is even more remote. In fact, no plant or simple agent readily available in nature seems to have the capacity of inducing abortion safely. The development of chemicals capable of so doing (prostaglandins (75), mifepristone (76)), is a very recent development of contemporary pharmacology and while such chemicals are now being used in other countries, they are still being evaluated in the United States. Attempting to produce spontaneously occurring biological events (e.g., healing, contraception, conception, abortion) with means that are ineffective leads to the erroneous belief that the ineffective means are responsible for the event, and therefore effective. Spontaneous abortion and sterile coition are not unusual, of course, and if the patient has taken medication with the purpose of obtaining such an outcome she will be tempted to conclude that the result was caused by the medication.

This would explain why, in ancient literature, references to drugs that are obviously ineffective are so frequent. Ineffective medications have, in fact, been used in medicine for millennia because their lack of efficacy was masked by the spontaneous occurrence of the desired outcome (in the case of healing, by the *vis medicatrix naturae*). The belief that abortion and contraception could be brought about by magic utterances and the administration of ineffective drugs is found in practically all cultures. In ancient India, for example, it was believed that suppression of the emission of semen for contraceptive purposes could be achieved by, at the moment of emission, contracting the anal sphincter while meditating upon the mystic word "OM", or thinking of "a very unsteady ape who is moving on the branches of a tree", or "smearing the soles of the feet (or the umbilicus with various substances" (77). The Egyptians believed that "to make a woman cease to become pregnant for one year, two years or three years", it was sufficient to insert in her vagina a mixture of acacia, dates, honey and seedwool (78).

In some cases, the lack of efficacy could have been masked by the simultaneous use of efficacious mechanical means. For example, Lucretius says that a contraceptive maneuver on the part of women is to gyrate their hips during intercourse and that prostitutes do so to avoid pregnancy (79). Although Lucretius was not a physician, his statement probably reflects a belief that was common at the time. Perhaps prostitutes, along with gyrations, used other means, for example vaginal plugs, and attributed to the gyrations what was due, in fact, to the plugs. Similarly, Juvenal refers to drugs capable of inducing abortion when taken by mouth (80). It could be, however, that, in some cases, women were given drugs before abortion was induced by mechanical means with the idea that the drugs caused the abortion and the dilatation of the ostium was only ancillary (e.g., to permit the elimination of the dead fetus) (81).

The same may be said concerning contraception. Effective mechanical measures may have been associated with ineffective systemic ones and the positive result attributed to the latter as well. The fact that there were so many recipes suggests that most were not effective (82); it is likely that if there had been effective contraceptive and abortive medications readily available, many useless ones, such as amulets, would not have had reason to exist.

In view of the above, it seems justified to assume that the ancient physician did not have at his disposal effective contraceptives and abortifacients other than those that acted mechanically (83). Considering the high mortality undoubtedly associated with the use of mechanical abortifacients (that is, the intrauterine introduction of rods and scraping instruments), it is unlikely that they were used on a large scale. In addition, it is unlikely that effective contraceptive measures (vaginal plugs), lost among the large number of ineffective ones, were sufficiently known and used to have a significant effect on fertility (84). It would appear, therefore, that

drugs and maneuvers used as contraceptives and abortifacients in antiquity were not responsible for population declines and that the cause (or causes) of the phenomenon must be sought elsewhere.

### Notes

1. Keith Hopkins, "Contraception in the Roman Empire", *Comparative Studies in Society and History*, VIII, 124-151, 1966; Keith Hopkins, "A Textual Emendation in a Fragment of Musonius Rufus : A Note on Contraception", *Classical Quarterly*, XV, 72-74, 1985; John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991; John M. Riddle, *Contraception and Abortion from the Ancient World to the Renaissance*, Harvard University Press, 1992, pp. 1-2.
2. Polybius, *Historiae*, XXXVI, xvii, 5-12.
3. Censor Quintus Metellus (second century B.C.), "proposed that everybody should be compelled to marry for the sake of generating children. His speech is preserved and was read by Augustus before the Senate, as if it were written for these days, when he was discussing the problem of marriage in our social classes" (Livy, *Periocha*, LIX). The same speech is mentioned by Aulus Gellius (*Noctes Atticae*, I, vi), who, however, wrongly attributes it to Metellus Numidicus. Suetonius (*Divus Augustus*, xxxiv and lxxxix) mentions that Augustus enacted laws to encourage marriage and that he read to the Senate Quintus Metellus' speech. See also: Keith Hopkins, "Contraception in the Roman Empire", *Comparative Studies in Society and History*, VIII, 124-151, 1966. The Augustan laws *Lex Julia de maritandis ordinibus* (18 B.C.) and *Lex Papia Poppaea* (9 A. D.) were followed by the Alimentary Laws, which provided, between the first and third centuries A.D., payments to parents to raise children. See : John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991, footnote 114.
4. John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991; Donald Engels, "The Problem of Female Infanticide in the Greco-Roman World", *Classical Philology*, LXXV, 112-120, 1980.
5. William W. Harris, "The theoretical Possibility of Extensive Infanticide in the Graeco-Roman World", *Classical Quarterly*, XXXII, 114-116, 1982; Paul Carrick, *Medical Ethics in Antiquity*, Dordrecht, D. Reidel, 1985, pp. 101-102.
6. Wieslaw Suder, "Allaitement et contraception dans les textes medicaux latins et grecs antiques", in *Le latin medical. La constitution d'un langage scientifique*, Memoire X, edited by Guy Sabbath, Saint-Etienne, Publications de l'Universite de Saint-Etienne, 1991, pp. 135-141. The belief that Aristotle (*De generatione animalium*, IV, x, 777a, 13-16 and *Historia animalium*, VII, xi, 587b, 25-30) and Pseudo-Plutarch (*De liberis educandis*, 5 - Loeb Edition, p. 14) may have known the phenomenon, is based on passages of doubtful interpretation.
7. Keith Hopkins, "Contraception in the Roman Empire", *Comparative Studies in Society and History*, VIII, 124-151, 1966.
8. John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991. See also : John M. Riddle, *Contraception and Abortion from the Ancient World to the Renaissance*, Harvard University Press, 1992, p. 56.
9. Keller found about two hundred alleged abortives mentioned in the ancient literature (Achim Keller, *Die Abortiva in der römischen Kaiserzeit*, Stuttgart, Deutscher Apotheker Verlag, 1988). Fontanille mentions about four hundred abortive or contraceptive preparations (Marie-Therese Fontanille, *Avortement et contraception dans la medecine greco-romaine*, Paris, Laboratoires Searle, 1977).
10. *Quas mihi non herbas, quae non medicamina nutrix attulit audacis supposuitque manu ut penitus nostris... visceribus crescens excuteretur onus I A, nimium vivax admotis restitit infans artibus et tecto tutus ab hoste fu!* (Ovid, *Heroides*, XI, 43-44).
11. Procopius, *Secret History*, XVII, 16-17. Translation by H.B. Dewing, The Loeb Classical Library, Cambridge, Harvard University Press, 1935.
12. For comprehensive lists, see : Wolfgang Jochle, "Menses inducing Drugs : Their Role in Antique, Medieval and Renaissance Gynecology and Birth Control", *Contraception*, X, 4, 425-439, 1974. Marie-Therese Fontanille, *avortement et contra-*

- ception dans la medecine greco-romaine, Paris, Laboratoires Searle, 1977; Achim Keller, *Die Abortiva in der romischen Kaizerzeit*, Stuttgart, Deutscher Apotheker Verlag, 1988.
13. Aristotle, *Historia animalium*, VII (IX), iii, 583a, 22-24.
  14. *The Greek Herbal of Dioscorides*, II, 146. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  15. *The Greek Herbal of Dioscorides*, V, 123. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  16. Oribasius, *Euporiston*, IV, 116, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, V, pp. 777-778.
  17. Oribasius, *Euporiston*, IV, 116, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, V, pp. 777-778.
  18. *The Greek Herbal of Dioscorides*, II, 189. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  19. See : Oribasius, *Collectiones medicae*, X, 25, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, II, p. 442. See also Soranus, quotation below.
  20. Pliny, *Natural History*, XXVII, xvii, 34.
  21. Pliny, *Natural History*, XXVII, iv, 80.
  22. Pliny, *Natural History*, XX, li, 142-143.
  23. Pliny, *Natural History*, XX, liii, 147-148.
  24. *The Greek Herbal of Dioscorides*, IV, 187. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  25. Pliny, *Natural History*, XX, xliv, 114.
  26. *The Greek Herbal of Dioscorides*, 1, 136. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  27. Oribasius, *Euporiston*, IV, 116, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, V, pp. 777-778.
  28. This is the only example of oral contraceptive in the Hippocratic Corpus : "If a woman does not want to become pregnant, dissolve in water a quantity the size of a bean of *misu* [a copper ore found in Cyprus], give it to her to drink, and she will not become pregnant for a year" (*On the Nature of Woman*, xcvi, Littre, VII, p. 414). The same prescription is repeated in *On Women's Diseases*, I, lxxvi, Littre, VIII, p. 170. It is of interest that, although the idea that ingestion of copper salts would make a woman sterile for one year is to be considered the result of imaginary pharmacology, it has been said of this alleged contraceptive : "There is sufficient evidence... to merit the hypothesis that the first contraceptive mentioned in Greek medicine [that is, *misu*] is based on rational observations by women who were seeking to control their fertility through contraception" (John M. Riddle, *Contraception and Abortion from the Ancient World to the Renaissance*, Cambridge, Harvard University Press, 1992, p.76).
  29. Hippocrates, *On the Seed*, v, Littre, VII, p. 476.
  30. Pliny, *Natural History*, VII, vi, 42.
  31. Pliny obviously did not believe in the power of this maneuver because he reports it as being a hearsay (*quodtradunf*) miracle (*portentum*). Pliny, *Natural History*, XXIV, xi, 18.
  32. Pliny, *Natural History*, XXVIII, xxxii, 122.
  33. Pliny, *Natural History*, XXVIII, lxxvii, 256. Translation by W.H.S. Jones, The Loeb Classical Library, Cambridge, Harvard University Press, 1956.
  34. Pliny, *Natural History*, XXII, xlv, 91.
  35. Pliny, *Natural History*, XXIX, xxvii, 85. Translation by W.H.S. Jones, The Loeb Classical Library, Cambridge, Harvard University Press, 1956.
  36. Aetius of Amida, 16, 17. Quoted by Keith Hopkins, "Contraception in the Roman Empire", *Comparative Studies in Society and History*, V111, 124-151, 1966.
  37. *The Greek Herbal of Dioscorides*, 11, 152. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
  38. Oribasius, *Euporiston*, IV, 116, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, V, pp. 777-778.
  39. *The Greek Herbal of Dioscorides*, II, 97. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).

40. We do not consider pessaries mechanical means for inducing abortion as they could work only because of their pharmacological properties. On the other hand, we consider them mechanical contraceptives because they could act as shields preventing the entrance of the sperm into the uterus.
41. Ovid (*Fasti*, I, 623) states that abortion was produced *ictu caedo* (with a blind blow). The expression has been interpreted as meaning the introduction of an instrument into the uterus (see: Enzo Nardi, *Procurato aborto nel mondo greco-romano*, Milan, Giuffrè, 1971, p. 185, note 98). In *Amores*, we find : *suis patiuntur vulnera telis, et caecae armant... manus* ("women suffer wounds from their own weapons when they arm their hands to blindly stab (their viscera)" - II, xiv, 3-4), and *vestra quid effoditis subiectis viscera telis, et nondum natis dira venena datis ?* ("[women], why do you dig with shafts at your vitals from below and give dire poisons to your children yet unborn?" - II, xiv, 27-28). See also: Enzo Nardi, *Procurato aborto nel mondo greco-romano*, Milan, Giuffrè, 1971, pp. 185, 195, 234, 235, 239, 297.
42. Pliny, *Natural History*, XXVII, lv, 80.
43. Pliny, *Natural History*, XX, li, 142-143.
44. *The Greek Herbal of Dioscorides*, IV, 187. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
45. *The Greek Herbal of Dioscorides*, 111,138. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
46. *The Greek Herbal of Dioscorides*, II, 26. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
47. *The Greek Herbal of Dioscorides*, II, 98. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
48. *The Greek Herbal of Dioscorides*, 111,109. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
49. Pliny, *Natural History*, VII, vii, 43.
50. *The Greek Herbal of Dioscorides*, V, 123. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
51. *The Greek Herbal of Dioscorides*, II, 146. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
52. Oribasius, *Euporiston*, IV, 112, in *Oeuvres d'Oribase*, edited and translated by C. Daremberg and U.C. Bussemaker, Paris, Imprimerie Nationale, 6 vols, 1851, V, pp. 772-773.
53. An abortive pessary (*pesson phthorion*) is also mentioned in the Hippocratic Oath.
54. This is almost all that Soranus has to say on the subject and we quote him *in extenso* to give the reader a first-hand idea of what physicians knew about abortion and contraception and which agents they used.
55. "The best time for fruitful intercourse is when menstruation is ending and abating, when urge and appetite for coitus are present, when the body is neither in want nor too congested and heavy from drunkenness and indigestion, and after the body has been rubbed down and a little food been eaten and when a pleasant state exists in every respect". *Soranus' Gynecology*, I, x, 36. Translated by Owsei Temkin, Baltimore, The Johns Hopkins University Press, 1991 (reprint of 1956 edition), pp. 34-35.
56. *Soranus' Gynecology*, I, xix, 61-65. Translated by Owsei Temkin, Baltimore, The Johns Hopkins University Press, 1991 (reprint of 1956 edition), pp. 63-68. It is of interest that Soranus does not believe in amulets and recognizes the danger of mechanical abortifacients.
57. Heinrich Von Staden (*Herophilus : the Art of Medicine in Early Alexandria*, Cambridge, Cambridge University Press, 1989, p. 18) puts the number at 250; Stannard says "more than 200" (Jerry Stannard, "Hippocratic Pharmacology", *Bull. Hist. Med.*, XXXV, 497-518, 1961); Moisan estimates it at about 350 (Monique Moisan, "Les Plantes Narcotiques dans le Corpus Hippocratique", in *La maladie et les maladies dans la collection hippocratique*, Actes du Vie Colloque International Hippocratique, edited by Paul Potter et al., Quebec, Les Editions du Sphinx, 1990, pp. 381-391); Girards believes the same number to be "more than 450" (Christine Girard, "L'hellebore, panacee ou placebo ?" in *La maladie et les maladies dans la collection hippocratique*, Actes du Vie Colloque International Hippocratique, edited by Paul Potter et al., Quebec, Les Editions du Sphinx, 1990, pp. 391-405).

58. *The Greek Herbal of Dioscorides*. Translated by John Goodyer and edited by Robert T. Gunther, New York, Hafner Publishing Co., 1959 (reprint of the 1934 edition).
59. As mentioned above, Fontanille lists about four hundred preparations between abortives and contraceptives (Marie-Therese Fontanille, *Avortement et contraception dans la medecine greco-romaine*, Paris, Laboratoires Searle, 1977).
60. Riddle mentions less than ten. See : John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991.
61. P. Pioreschi and D. Babin, "Ancient Use of Cannabis", *Nature*, CCCLXIV, 680, August 19, 1993. See also : J. Worth Estes, *The Medical Skills of Ancient Egypt*, Canton, Science History Publications, 1989, p. 102; P. Pioreschi, *A History of Medicine, Vol I, Primitive and Ancient Medicine*, Lewiston, The Edwin Mellen Press, 1991, pp. 67-69.
62. *On the Regimen of Acute Diseases (Appendix)*, xxx, Littre, II, p. 518.
63. *On Internal Affections*, xii, Littre, VII, p. 196.
64. *On Internal Affections*, ix, Littre, VII, p. 266.
65. *On the Nature of Woman*, xv, Littre, VII, pp. 332-334; *On Women's Diseases II*, cxvii, Littre, VIII, p. 252.
66. *On the Nature of Woman*, xxxv, Littre, VII, p. 376.
67. *On Women's Diseases I*, ix, Littre, VIM, p. 120.
68. *On Women's Diseases II*, Littre, VIII, p. 244.
69. *On Women's Diseases II*, clxix, cci, Littre, VIM, p. 324, 326, 386.
70. *On the Nature of Woman*, xxxii, Littre, VII, p.356, 358.
71. *On Women's Diseases II*, ccvi, Littre, VIII, p. 398..
72. *On Women's Diseases II*, ccvi, Littre, VIII, p. 400.
73. John M. Riddle, "Oral Contraceptives and Early-Term Abortifacients during Classical Antiquity and the Middle Ages", *Past and Present*, CXXXII, 3-32, 1991.
74. Clover was, in fact, used in antiquity as an abortive. See : Marie-Therese Fontanille, *Avortement et contraception dans la medecine greco-romaine*, Paris, Laboratoires Searle, 1977, pp. 86, 146; Achim Keller, *Die Abortiva in der romischen Kaiserzeit*, Stuttgart, Deutscher Apotheker Verlag, 1988, pp. 91, 230.
75. Goodman and Gilman's *The Pharmacological Basis of Therapeutics*, Eighth Edition, New York, McGraw-Hill, 1993, p. 949.
76. Irving M. Spitz, and C.W. Bardin, "Mifepristone (RU 486) - A Modulator of Progestin and Glucocorticoid Action", *N. Engl. J. Med.*, CCCXXIX, 6, 404-412, Aug. 5, 1993.
77. N.H. Keswani, "Contraception in Ancient India", in *Neuroendocrine Regulation of Fertility*, edited by Anand Kumar, Basel, Karger, 1976, pp. 2-7.
78. *The Papyrus Ebers*, translation of B. Ebbell, Copenhagen, Levin and Munksgaard, 1937, p. 108. The mixture could have been effective if it occluded the *ostium*, but then any other mixture of similar consistency would also have been.
79. Lucretius, *De rerum natura*, IV, 1267-1275.
80. Juvenal, *Saturae*, VI, 595-598.
81. A concomitant use of abortifacients and mechanical means may be implied in the passage of Ovid's *Amores* quoted above (II, xiv, 27-28).
82. Marie-Therese Fontanille, *Avortement et contraception dans la medecine greco-romaine*, Paris, Laboratoires Searle, 1977, p. 76.
83. Paul Carrick, *Medical Ethics in Antiquity*, Dordrecht, D. Reidel, 1985, pp. 105-106.
84. Norman E. Himes, *Medical History of Contraception*, New York, Schocken Books, 1970 (reprint of the 1936 edition), pp. 97, 100.

### Biographical Note

Plinio Pioreschi, M.D., Ph. D., Professor of Pharmacology, Assistant Professor of Medicine, Member of the division of History of Medicine, Creighton University, Omaha, Nebraska, U.S.A. Dr. Pioreschi is the author of several dozen scientific publications in pharmacology and experimental medicine. Trained in internal medicine, he has practiced medicine at university clinics and hospitals. For several years, he has been interested in the history of medicine and has published, in this field, papers, books, and book reviews; his books on history of medicine are : *A History of Human Responses to Death* (New York, The Edwin Mellen Press, 1990); *A History of Medicine, Vol.I, Primitive and Ancient Medicine* (New York, The Edwin Mellen Press, 1991); *A History of Medicine, Vol.II, Greek Medicine* (New York, The Edwin Mellen Press, 1994). At present, Dr. Pioreschi is working on the third volume of his *History of Medicine (Roman Medicine)*. His book *Man and War* (New York, Philosophical Library, 1987) is a historical work not related to medicine.



**Par  
sympathie**



**With  
sympathy**

## ***Places the medical historian should visit***

*When you visit a strange city it is not always easy to find the way to sites of medical historical interest, or even to learn whether there are any. How often has one regretted not knowing where to go, and learned about what you have missed after your return home. To help minimise this risk we have asked a number of members to contribute urban itineraries to cover short visits of one or two days in towns throughout the world.*

*If you would like to offer a short medical historical itinerary for your own town we should be happy to consider it for publication in the series.*

*Lorsque l'on visite une ville qui n'est pas la sienne, il n'est pas toujours facile de repérer ce qui est susceptible d'intéresser l'historien de la médecine. Combien de fois ne l'a-t-on pas regretté et surtout d'apprendre, à son retour, ce qu'on a manqué. Afin de pallier cette difficulté, nous avons demandé à plusieurs membres de notre Société de proposer un itinéraire médico-historique d'un ou deux jours, chacun dans sa ville.*

*Si vous disposez d'un itinéraire d'une ville - la vôtre ou une autre - susceptible d'intéresser nos lecteurs, n'hésitez pas à nous l'envoyer, nous serons heureux de le publier dans cette série.*

### ***Musées médicaux et hôpitaux historiques de Paris***

La ville de Paris a une très longue tradition médicale puisque, dès le début du IX<sup>ème</sup> siècle, une fondation hospitalière recevait un don important : cette tradition n'a plus été interrompue depuis 829, et Paris n'a jamais cessé d'être l'une des grandes métropoles médicales d'Europe.

**Le Musée de l'Assistance Publique, Hôpitaux de Paris** est particulièrement consacré à l'histoire des soins donnés dans les hôpitaux. Installé dans un bel hôtel particulier du XVII<sup>e</sup> siècle, il expose tous les objets mobiliers, tableaux, instruments médicaux et chirurgicaux, manuscrits, parchemins, etc., utiles aux soins aux malades et témoignant de l'activité des administrateurs hospitaliers. De nombreux récipients pharmaceutiques illustrent l'évolution de la pharmacopée, et la reconstitution d'une "salle de garde" rappelle la vie agitée et frondeuse des internes.

*47 quai de la Tournelle, Ve arrondissement, Tél. : 46.33.01.43, du mardi au samedi de 10 h à 17 h, fermé dimanche, lundi, fêtes.*

**Le Musée d'Histoire de la Médecine** est plutôt consacré à l'histoire de la faculté de Paris. On peut le visiter dans l'immeuble construit au XVIII<sup>e</sup> siècle en style néoclassique pour l'Académie Royale de chirurgie, l'un des beaux mo-

numents de Paris à cette époque. Le musée renferme une belle collection de portraits de médecins et enseignants célèbres, des sceaux et jetons de présence, des ex-libris, près de deux mille instruments provenant entre autres du Collège de chirurgie, parmi lesquels le stéthoscope de Laennec, le bistouri qui incisa l'anus de Louis XIV, des cornets acoustiques du début du XIX<sup>e</sup> siècle, etc. Sous la conduite du conservateur, on peut éventuellement jeter un oeil à la salle du Conseil des professeurs ornée de quatre grandes tapisseries du XVII<sup>e</sup> (le ciel, la terre, l'eau et le feu), ainsi qu'au grand amphithéâtre dont l'architecture n'a pas changé depuis la construction de l'édifice.

*12 rue de l'Ecole de Médecine, Vie arrondissement, Tél. : 40.46.16.93, du lundi au vendredi de 17 h à 17 h 30. Visites guidées sur rendez-vous.*

**Le Musée de l'Institut Pasteur** s'est spécialisé dans la vie du savant et celle de l'Institut qui continue son oeuvre. Outre les souvenirs de

Pasteur, y sont groupés les portraits de ses continuateurs, le rappel des découvertes et des succès de l'Institut. Le tombeau de Pasteur mérite la visite : sur un modèle architectural antique, sa décoration intérieure est néo-byzantine.

*55 rue du Dr Roux, X<sup>e</sup> arrondissement, Tél. : 45.68.82.82, tous les jours de 14 h à 17 h 30 sauf WE*

**Le Musée du Val de Grâce** illustre la vie du Service de Santé des armées, c'est-à-dire les activités de la médecine militaire en temps de paix et de guerre : les uniformes, les ambulances, les postes de secours, les hôpitaux mobiles, etc. Installé dans des locaux conventuels du XVII<sup>e</sup> siècle, somptueusement restaurés ainsi que la chapelle, le musée ne sera ouvert au public qu'en septembre 1996. Des visites guidées peuvent dès maintenant être organisées pour des groupes, sur demande adressée au Médecin général inspecteur, musée du Service de santé des armées.

*1 place Laveran, 75230 Paris 05. Tél. 40.51.47.28.*

Plusieurs autres musées voués à l'anatomie pathologique et à la médecine légale sont plus difficiles d'accès; et parmi les bibliothèques dignes d'intérêt, il y a la bibliothèque de l'Académie de Médecine (16 rue Bonaparte, Vie, 40.27.30.00) et la Bibliothèque interuniversitaire de la Faculté de Médecine (12 rue de l'Ecole de Médecine, Vie, 40.46.19.53) sur rendez-vous avec les conservateurs.

L'accès aux hôpitaux est libre, et l'on peut circuler dans les cours et les jardins : Paris offre ainsi plusieurs exemples intéressants d'établissements anciens, ne serait-ce que par leur architecture.

C'est **PHôtel-Dieu**, situé sur le parvis de la cathédrale Notre-Dame, (dont l'emplacement remonte au haut Moyen Age) qui est le plus accessible. Les bâtiments actuels ne datent que de 1877, mais dans la galerie qui entoure la cour centrale, des gravures explicatives illustrent révolution de cette maison millénaire.

**L'Hôpital Saint-Louis** est le plus ancien hôpital de Paris, construit au début du XVII<sup>e</sup>

pour les malades contagieux. L'harmonie de son plan et de ses matériaux en font un beau bâtiment, caractéristique de son époque. Un des pavillons modernes abrite l'une des plus complètes collections de cires anatomiques : reproduisant des affections de la peau, elle rappelle que l'hôpital Saint-Louis fut le centre de la dermatologie européenne au XIX<sup>e</sup> siècle.

*Place Alphonse Fournier, oui av. Claude Villefaux, Xe arrondissement.*

**L'Hôpital de la Salpêtrière** présente une façade classique, puisque fondé au XVII<sup>e</sup> siècle pour abriter les infirmes, les mendiants et les femmes de mauvaise vie. Puis il devint le grand refuge des aliénés, et c'est là que Pinel passe pour les avoir libérés de leurs chaînes. Avec Charcot et ses successeurs, l'hôpital devint l'un des hauts lieux de la neurologie française. La chapelle au plan centré est majestueuse, et le mail arboré, bien entretenu, sert toujours à la promenade des malades.

*47, boulevard de l'hôpital, XIII<sup>e</sup> arrondissement.*

**L'Hôpital de Port-Royal** trouve son intérêt dans le cloître du XVII<sup>e</sup> siècle. Construit pour abriter des religieuses, il devint lors de la Révolution Française, et pour plus d'un siècle, le centre de l'obstétrique française. Les locaux de cet ensemble architectural n'abritent plus de malades.

*121-123 bld de Port-Royal, XI<sup>e</sup> arrondissement.*

En dehors de Paris, on peut aussi visiter au sud **l'hospice de Bicêtre** (au Kremlin-Bicêtre) : ce nom vient de la déformation française de Winchester. Hospice des aliénés depuis le XVII<sup>e</sup> siècle, Pinel y fit ses premiers travaux. A l'est l'hôpital Esquirol (à Saint-Maurice) domine les rives de la Marne : construit au XIX<sup>e</sup> siècle sur les plans d'Esquirol, élève de Pinel, son architecture reflète les conceptions de l'époque sur l'hygiénisme et le traitement des maladies mentales.

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## **Book Review**

### **Antique Medical Chests or Glyster, Blister and Purge**

by Anne Mortimer Young

London & Brighton : Vernier Press, 1994.

pp vi, 78. 12 coloured plates, 42 black & white illustrations. Paperback £18, Hardback £25

It is always an excitement when one unexpectedly finds an elegant but misnamed "apothecary's cabinet" in a sale room. Anne Young reminds us that these were not in fact used in practice by apothecaries, but bought by their customers and so provide practical evidence of the medicines that were actually taken by patients at the period. They are, in fact, antique medicine chests and the stuff of domestic medicine.

Their richness of decoration reflects the contemporary value of their contents. 'In the 17th century, medicines were expensive and were kept in such chests along with cosmetics, jewellery and other costly items', (p.1) In the 18th century as medicines became cheaper, the chests became plainer and more practical. Very few British ones were made in that period and none at all have been found of the 17th century, (p.23) Later boxes may at times have been less ornate, but most were still finely made. Their historical value is increased by the "substantial

body of medicine chest literature", published as guides or companions, although it was the exception for these to be fitted into the examples containing the home pharmacy of orthodox remedies, (p.27) The later homeopathic ones carried slotted-in instruction manuals, (p.55)

Although primarily concerned with British 18th and 19th Century models there is a very valuable chapter on the evolution of the genre from Ancient Egypt and Rome. In an informative and entertainingly written book it is a delight to find the text clearly illuminated by well chosen illustrations and tables, with good contextual comparisons from continental Europe.

Their decline followed the growth of an easier access to professional help following the Medical Act of 1858 and the increasing use of compressed tablets and injections. Henceforth medicines could be carried in small leather cases and japanned tin boxes (p.64) which do not have quite the same aesthetic appeal.

*John Cule*

### **Russia and Wales.**

#### **Essays on the history of state involvement in health care**

Edited by John H. Cule and John M. Lancaster

Cardiff: History of Medicine Society of Wales, 1994. pp. x & 139. pb.

The Librarian, University of Wales College of Medicine, Cardiff, CF4 4XN. Wales, G.B..

Price £10, postage & packing G.B. £1, abroad £2.

This elegant-to-handle paperback makes easy reading because its seven articles were written for oral presentation.

Ryan traces the gradual re-emergence of doctors from their "deprofessionalisation" under the tyranny of Stahn in a factual and well-informed paper, and Mirsky contributes an authoritative essay on the development of Russian state medicine from the days of Ivan the Terrible to the 1918 revolution when Russian doctors, antici-

pating their British colleagues by three quarters of a century, were already complaining of bureaucratic interference in work and management.

Verbitski concentrates on the nineteenth century practice of obstetrics, demonstrating how, unlike their European colleagues, Russian doctors favoured the *primum non-nocere* principle, and how many followed the Pirogov tradition of *glasnost* in discussing their failures

so that others could avoid their mistakes.

Sorokina gives a fascinating blow by blow account of the plague epidemic in Moscow (1771 - 72) and its successful control by Dr. Shafonsky and his team of doctors, with Count Orlov who took over the administration, when the Archbishop was murdered by the mob, because he supported the doctors. Apart from the destruction of rats, whose specific disease role was then unknown, the antiplague measures, worked out over 200 years ago, are of relevance today.

Graham Jones contributes a well researched paper tracing the career of Aneurin Bevan from his days as a 13 year old miner stumbling in the dark underground, to become in the words of a S/WJeditorial, "the most brilliant Minister of Health this country has ever had". Like his compatriot Lloyd George who introduced an embryo public health service in 1913, Bevan introduced his N.H.S. Bill in 1946, but it took him 2 years, using his considerable negotiating skill, to win over the medical profession, and produce a National Health Service which, in those days, was the envy of the world.

Guy notes how the pioneer epidemiologist John Snow observed that cholera always appeared first at seaports, while Clemow blamed

the new railway lines for transferring the disease inland. John Simon's introduction of inspection and isolation of ships and crews from foul foreign ports in lieu of quarantine, was largely responsible for ensuring that Great Britain suffered no cholera epidemic after 1873.

Cule in an original, scholarly paper with numerous references portrays vividly the work and status of the physician at the Court of Hywel Dda, who reigned in Wales from c. 910 to 950 A.D. The Laws of Hywel Dda were maintained in Wales until 400 years ago, whereas English laws had disappeared soon after the Norman conquest of England 900 years ago. The privileges and obligations of the Court Physician in Wales, and even his position at the royal table, his prescriptions and emoluments are discussed in detail. It is salutary to recall that in Wales, over a thousand years ago, the physician was paid partly by the state and partly by the patient, who then had an unalienable right to medical treatment.

A good balance is maintained between the Welsh and Russian, medical and law presentations in this book, which is a good buy.

Glyn Rhys

### **Histoire du SIDA (nouvelle édition augmentée)**

Mirko D. Grmek

Paris, Petite Bibliothèque Pavot, 1995, 492 pp.

Dès la sortie de presse, en janvier 1989, du remarquable livre du docteur Mirko D. Grmek, Histoire du SIDA, j'ai pu en rendre compte dans les *Acta Belgica Historiae Medicinae*, 1989,11,3, pp. 123 - 125. Six années se sont écoulées et les informations sur cette terrible pandémie n'ont pas cessé de s'accroître : ce qui justifie amplement cette nouvelle édition revue et augmentée.

Le savant directeur d'étude de l'Ecole pratique des hautes études fournit à son lecteur une bibliographie très copieuse, notamment une bibliographie sélective des publications récentes (1989 - 1994), totalisant 80 pages.

La partie la plus neuve du livre s'intitule "Cinq ans plus tard". Parmi des dizaines de rubriques, se lisent notamment celles-ci qui signalent quelques événements nouveaux :

- l'identité des premiers malades de New York
- le SIDA en Haïti
- le concept de virus et l'évolution historique de la virologie
- les enjeux financiers de la querelle du brevet
- suite de l'affaire Gallo
- la biologie moléculaire du HIV
- le SIDA sans HIV
- les tests
- l'affaire de la contamination des hémophiles

- la valeur thérapeutique de l'AZT
- les espoirs de la vaccinologie
- l'expansion du HIV dans le monde (1990-1994)
- une prédiction pessimiste se réalise.

Cette prédiction a été faite par Mirko Grmek, dans la deuxième édition de son livre : il y a dans

le monde environ 1 million de personnes à la fleur de l'âge gravement malades. Les pages 325 à 375 répondent vraiment aux questions les plus récentes que se posent le médecin, l'historien de la médecine et, tout simplement, l'honnête homme.

Simon Byl

### **Histoire de la médecine** sous la direction de Danielle Gourevitch Paris, Ellipses, 1995, 192 p.

Ce manuel de grand format (17 x 26 cm) comporte 27 leçons méthodologiques dues à des auteurs de plusieurs pays européens qui sont philologues, historiens, conservateurs de musée et de bibliothèque, médecins, dentistes et pharmaciens mais qui tous ont une formation d'historien. Comme l'écrit le préfacier, Pierre Lefebvre de l'Académie de médecine de Paris, c'est Danielle Gourevitch "*le maître d'oeuvres de cette étude ouverte sur de larges horizons*".

Dans cette initiation à la recherche critique, Danielle Gourevitch a cherché à montrer l'adéquation d'un problème et d'une méthode. Cet ouvrage s'adresse aux étudiants ayant à leur programme l'histoire de la médecine, devenue une discipline à part entière, depuis la récente réforme des études médicales, et aux médecins, à ceux du moins qui ne s'imaginent pas que leur discipline est née avec eux.

Le manuel comporte sept sections. La première est intitulée : "*Sources : livres, objet, restes humains*". Pierrette Casseyre évoque l'utilisation de la plus grande bibliothèque de médecine de France - la bibliothèque inter-universitaire de médecine - indiquant ainsi la méthode pour établir une bibliographie. Le sujet est approfondi par M. D. Grmek sous le titre *Manuels occidentaux d'histoire générale de la médecine publiés de 1700 à 1900*. L'historien rend compte de 30 manuels, dont celui de C. Daremberg, *Histoire des sciences médicales...*, Paris, Baillière, 1870, 2 vol. XXVIII, 1303p. Michelle Lenoir étudie les fonds d'archives et de

manuscrits, très souvent inédits de la Bibliothèque de l'Académie nationale de médecine (la collection Daremberg compte 12.000 titres dont 113 incunables et 140 volumes de manuscrits). Jean-Jacques Ferrandis nous fait connaître le musée du service de santé des armées au Val-de-Grâce, superbement restauré entre 1981 et 1993. Ce musée possède de très nombreuses oeuvres d'art dont plusieurs illustrent la vie au front pendant la guerre de 1914-1918. Pierre Baron étudie la peinture hollandaise et flamande du XVIIe siècle et l'histoire de la médecine, montrant ainsi les apports de l'iconographie picturale à l'histoire de la médecine : ce chapitre est pourvu de plusieurs reproductions de tableaux. Pierre-Léon Thillaud initie ses lecteurs à la paléopathologie, cette science relativement jeune qui a pour but d'identifier les maladies sur les restes humains anciens. Il illustre son propos par l'étude de trois cas : Louis XVII, le Baron Larrey et l'homme de Cro-Magnon.

La seconde section du manuel est intitulée "*Noms et réalités*". Danielle Gourevitch commence cette série de leçons en étudiant les noms de la maladie, leur évolution sémantique en grec, latin, français, anglais, italien. Sommes-nous si nombreux à savoir que notre mot malade dérive du latin *malus habitus* (mauvaise habitude [du corps]) ? Thierry Bardinet montre ensuite que le mot bââ des bébés égyptiens dans les papyrus médicaux de l'Egypte pharaonique ne peut s'identifier à aucune de nos maladies pédiatriques; il s'agit vraisemblablement

blement de problèmes digestifs de la prime enfance mais qui n'ont pas donné naissance à une expression nosologique particulière. Danielle Gourevitch propose une étude philologique et sémantique d'un mot relativement rare, le mot *aporia* qu'on trouve dans les *Epidémies* hippocratiques V et qu'Emile Littré a rendu par anxiété. En fait, cette traduction repose sur un sens périmé du mot français. Danielle Gourevitch souhaite remplacer la traduction de Littré par une expression comme "impossibilité d'avalier, embarras, gêne...". Mirko D. Grmek, voulant montrer qu'il faut éviter les anachronismes en traduisant des textes anciens, a étudié les cas de tétanos dans le livre V des *Epidémies*; il fait remarquer qu'une traduction automatique du mot grec *tétanos* par le mot français désignant la maladie que nous nommons aujourd'hui tétanos est inadmissible. Yves Malinas et Danielle Gourevitch ont proposé un diagnostic rétrospectif sur un texte théorique court, celui du traité hippocratique des *Maladies des femmes* (1,32), qui décrit un cas de suffocation subite chez la femme enceinte. Les deux auteurs arrivent à la conclusion que ce cas correspond à notre syndrome d'éclampsie convulsive.

La troisième série de leçons porte sur la transmission du savoir et l'histoire au présent. C'est Marie-Hélène Marganne qui commence par évoquer l'apport des papyrus grecs à l'histoire de la médecine antique. Ces papyrus datant du IV<sup>e</sup> - III<sup>e</sup> siècle a.C. au V<sup>e</sup> siècle de notre ère ont été trouvés en Egypte qu'avait conquise Alexandre le Grand. Les papyrus hippocratiques sont au nombre de 18; ceux de Galien sont 6; Nicandre de Colophon et Dioscoride sont représentés chacun par 3 papyrus... Ces papyrus offrent de multiples intérêts, notamment celui de présenter un état du texte souvent bien antérieur à celui des manuscrits du Moyen Age.

Ce sont précisément ces manuscrits grecs qu'évoque Brigitte Mondrain. Il faut avoir présent à l'esprit que nous ne possédons aucun

"livre" d'Hippocrate (c'est-à-dire écrit dans le dernier tiers du Ve siècle a.C.) ou de Galien et que la littérature médicale antique a - comme toute la littérature antique - subi un authentique naufrage. Aux manuscrits byzantins succèdent les éditions imprimées : L'édition *princeps* des œuvres complètes d'Hippocrate est publiée à Venise en 1526 chez Aide Manuce.

Brigitte Mondrain décrit l'évolution du livre antique : le volumen initial, le rouleau, entre le II<sup>e</sup> et le Ve siècle de notre ère, est remplacé par le codex, le livre tel que nous le connaissons aujourd'hui. A la même époque, le parchemin remplace le papyrus. Autre changement dans l'histoire du livre : aux IX<sup>e</sup> - X<sup>e</sup> siècles, l'écriture majuscule est remplacée par l'écriture minuscule. Ce changement, qu'on appelle la translittération, va entraîner des fautes dites d'onciale (= fautes de lecture de majuscules). La tâche éminemment difficile du philologue classique est d'essayer de retrouver le texte originel tel que, par exemple, Hippocrate l'avait écrit, il y a près de 25 siècles. Danielle Jacquart est l'auteur d'une leçon intitulée *Le chapitre sur les esprits ou pneumata dans le Livre royal (Xe siècle)*, livre écrit par al-Magusi (ce livre porte un autre titre : *Livre complet sur l'art médical*); par un exemple, l'auteur souligne le passage du Galien authentique au Galien arabe, en évaluant les innovations de l'auteur arabe par rapport à ses sources. Bernard Fantini se demande comment étudier l'histoire contemporaine de la biomédecine. Dans un paragraphe de son chapitre, l'auteur écrit notamment : "Certains historiens qui s'intéressent sous l'angle épistémologique à la biologie contemporaine se plaisent à citer la contribution d'Aristote aux théories scientifiques actuelles : le physicien Max Delbrück est allé jusqu'à inclure (en 1971) Aristote parmi les fondateurs de la biologie moléculaire". Faut-il rappeler que je me suis toujours insurgé contre une telle affirmation ? Cf. mes *Recherches sur les grands traités biologiques d'Aristote*, Bruxelles, 1980, pp. 371-375.

La quatrième série de leçons concerne les doctrines et les préjugés. Jacques Jouanna étudie d'abord le concept de santé dans la Collection hippocratique; il nous montre notamment que les médecins hippocratiques n'ont pas été les premiers à avoir donné des définitions de la santé et que les définitions qu'ils donnent sont en harmonie avec la pensée morale de leur temps qui valorisait le juste milieu. Tout un livre a été consacré à ce sujet : Georg Wôhrle, *Studien zur Theorie der antiken Gesundheitslehre*, Stuttgart, 1990, 295 pp. Roselyne Rey consacre sa leçon à une doctrine du XIXe siècle : *Bichat et l'émergence de la notion du tissu*. La leçon 18 est de ma plume; elle est consacrée à l'étude d'un préjugé : *l'anthropomorphisme de la matrice dans la médecine de la Grèce ancienne*.

La cinquième série de leçons concerne la naissance des spécialités médicales. Michel Gourevitch nous montre les raisons pour lesquelles la psychiatrie fut en France la première spécialité. L'action de Pinel (1745 - 1826) à Bicêtre fut grande; le médecin va fonder le "traitement moral" et le "gouvernement des aliénés". Des facteurs juridiques et policiers vont contribuer à la naissance de la spécialité et la loi de 1838 va en permettre la reconnaissance officielle. François Vidal envisage ensuite la naissance de la profession de dentiste en France. Jean-Louis Poirier étudie un problème de médecine navale : la guerre de Crimée (1854 - 1856) et les premiers navires hôpitaux.

La sixième série de leçons, au nombre de cinq, est consacrée à la littérature et à la culture médicales. Jean-Noël Biraben a laissé la parole à un médecin, Jean-Baptiste Bertrand, un Marseillais, témoin de la dernière grande peste française, à Marseille en 1720 -1722 et il commente les idées du médecin sur l'épidémie. Michel Caire, de son côté, fait parler le médecin allemand A.F. Schweigger (1783 - 1821) et lui fait raconter une visite au service des aliénées à la Salpêtrière en 1808, dirigé par Pinel et il apporte un commentaire au texte allemand tra-

duit. Roselyne Rey étudie *Le Voyage à Bourbonne-Les-Bains en Champagne* de Diderot, en évaluant notamment les connaissances dont disposait l'écrivain sur les eaux minérales. Yves et Catherine Malinas ont voulu apprécier la culture médicale d'un grand écrivain en étudiant *Emile Zola et les Rougon-Macquart* et ils arrivent à la conclusion que l'écrivain "dépassé les connaissances acquises par ses lectures ou auprès de ses conseillers médicaux". René Wulfman aborde le nom des hôpitaux de Paris et il démontre que le choix de ces noms s'est fait selon les usages chrétiens (par exemple : Hôtel-Dieu [829]), par les bienfaiteurs de la cité (Rothschild (1937), par le pouvoir politique puis par l'administration de la santé qui ont choisi pour éponymes de grands savants, e.a. Bichat (1882), Broussais (1883), Laennec (1901) et qui choisissent de plus en plus de grands administrateurs, e.a. Robert Debré (1981).

La septième et dernière série est consacrée à l'exotisme et elle ne comporte qu'une leçon. Frédéric Obringer fournit des matériaux pour une histoire de la médecine chinoise. Beaucoup d'autres leçons pourront un jour être consacrées à la médecine non-occidentale.

Il est temps de conclure. Nous sommes en présence d'une nouvelle histoire de la médecine, nouvelle parce qu'elle vient de paraître et nouvelle par l'esprit qui l'anime, par la méthode qu'elle tente d'apprendre à tous ceux qui auront la curiosité de s'y frotter et la volonté d'y exercer leur esprit critique.

Ces leçons constituent une authentique initiation à la recherche dans le domaine de l'histoire de la médecine et donc aussi, peut-être, à la découverte historique. Tous les lecteurs de ce manuel constateront le souci permanent des auteurs qui se sont toujours fondés sur les sources écrites ou autres; à aucun moment, ils n'ont travaillé de seconde main; toujours, ils ont eu le souci de respecter le passé, tout en ayant conscience de leurs limites et en n'hésitant pas à les reconnaître.

Simon Byl



## Scientific Events

### September - December 1995

#### **Exhibition *Jews and Medicine : Religion, Culture, Science***

*The Nahum Goldmann Museum of Jewish Diaspora - Tel Aviv*

A comprehensive exhibition on the topic Jews and Medicine : Religion, Culture, Science is on display in this Museum, called in Hebrew *Beth Hatefutsoth*, located at the Tel-Aviv University campus.

Original documents, books, manuscripts are displayed in a didactic, chronological approach. A richly illustrated catalogue including 14 essays has been edited by the gifted curator Mrs Natalia Berger.

Information : Prof. S. Kottek

The Hebrew University of Jerusalem  
Ein Keren - 91120 Jerusalem - Israel

### 26-28 April 1996

#### **Conference on Comparative Perspectives on the History of Sexually Transmitted Diseases**

*University of London*

This conference will examine the spread of sexually transmitted diseases and their economic, social, medical and cultural impact across different historical periods and geographical regions.

Information : Dr Karen Jochelson

Institute of Commonwealth Studies  
28 Russel Square  
London WC1B 5DS, Great Britain  
Tel. : 44 - 71 - 580.58.76  
Fax: 44-71 -255.21.60

### 23 June 1996

#### **Arbeitskreis alte Medizin**

Einladung ins Medizinhistorische Institut der Johannes Gutenberg-Universität Mainz, Am Pulverturm 13 (UntergeschoB).

Information : Klaus-Dietrich Fischer

Medizinhistorische Institut,  
D-55101 Mainz, Germany  
Fax (+49) 6131/176682.

### 31st August - 8th September 1996

#### **XXXVth International Congress on the History of Medicine and 1st International Medical Olympiad in Kos, Greece**

The island of Kos in Greece, the birthplace of Hippocrates will be the location of the next International congress on the History of Medicine, September 2nd to 8th, 1996. The congress coincides with the celebration of the 75th Anniversary of the International Society for the History of Medicine. Topics include Medicine in Ancient Civilizations, Origins and Influence of Hippocratic Medicine, the Alexandrian (Hellenistic) School, Women and Health Sciences, History of Hospitals and other subjects. The Congress will be preceded by the 1st International Medical Olympiad, August 31st to September 2nd, an international meeting, organized by the International Hippocratic Foundation of Kos. The purpose of the International "Olympiad" Meetings will be to provide a forum, in an historically stimulating environment, for the study, exploration and discussion of aspects of History, Culture, Philosophy, Ethics, Trends and Policies of Medicine in a continuously changing social climate.

Information : Prof. Spyros G. Marketos

Patr. loakeim Str. 20  
10675 Athens, Greece  
Fax: + 301.3642197

### 9-11 September 1996

#### **Satellite International Congress of the ISHM in Jerusalem, Israel :*From Athens to Jerusalem. Medicine in Hellenized Jewish Lore and in Early Christian Literature*** *The Israel Society of The History of Medicine and Science*

The topics include Hellenistic influences and/or correlations toward ancient Jewish and early Christian healing narratives, studies on Josephus and Philo and intercultural aspects of medical ethics.

Information : Prof. S. Kottek

The Hebrew University of Jerusalem  
Conference Unit, Div. for Public Relations  
Mount Scopus, 91905 Jerusalem - Israel

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