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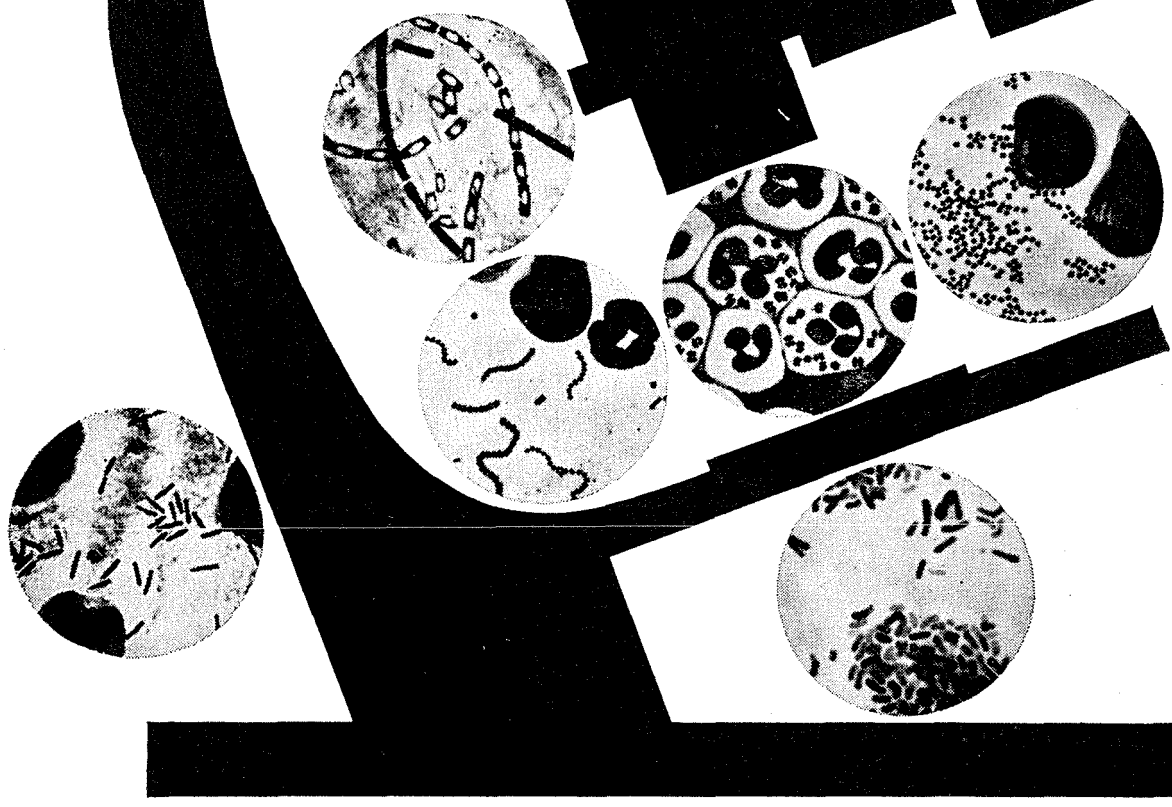

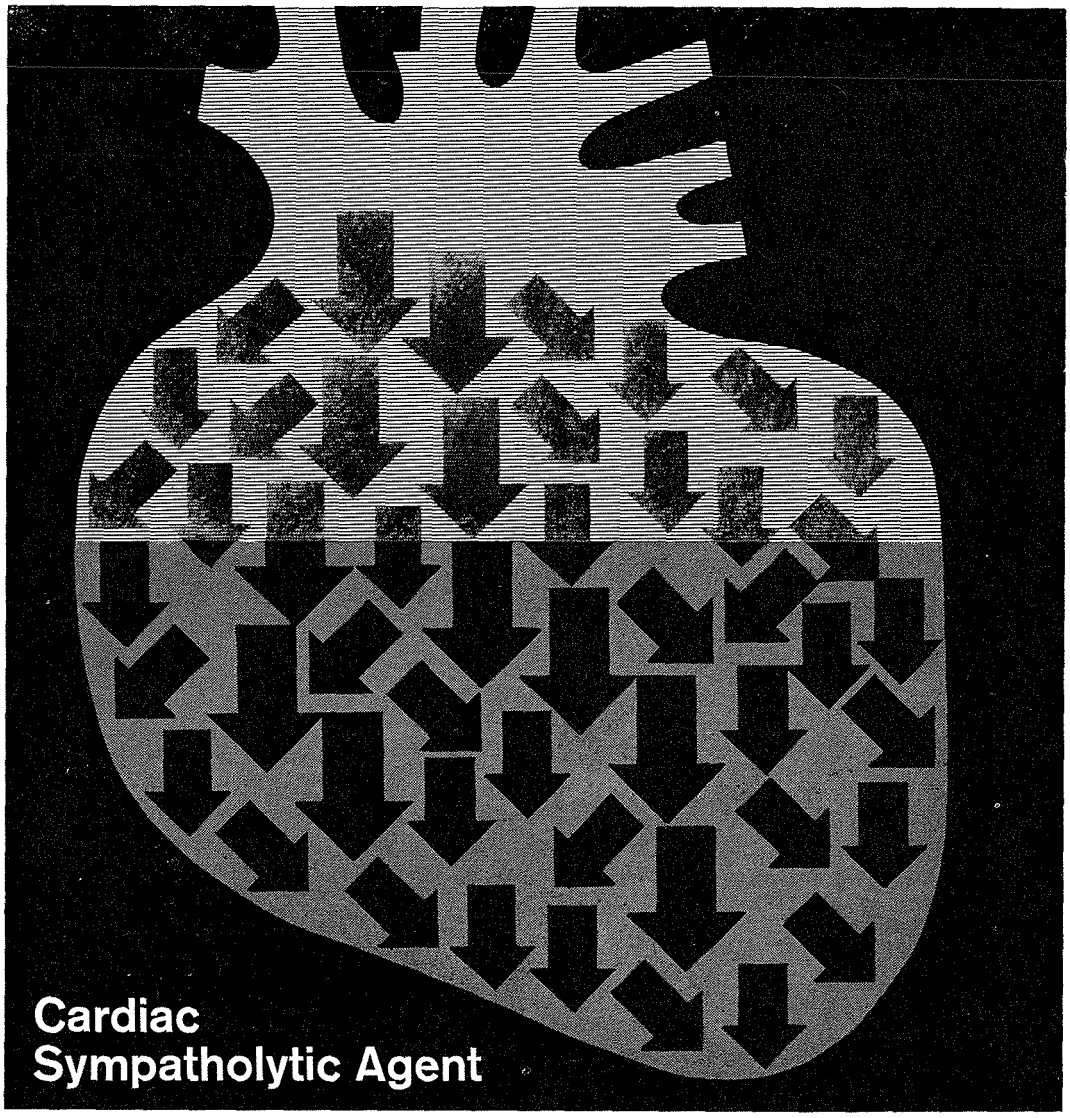

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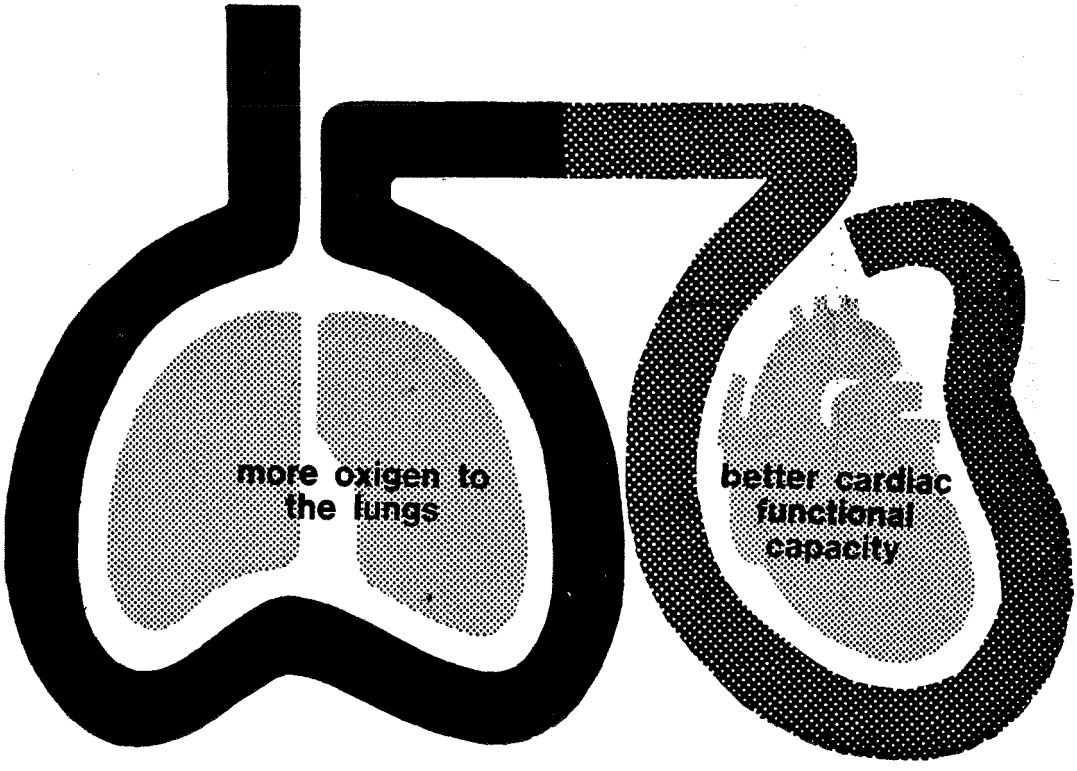

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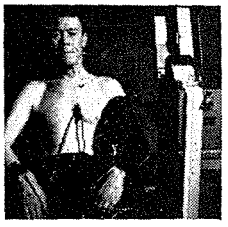

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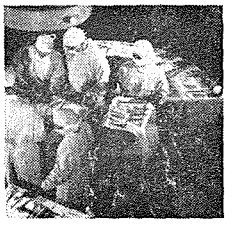

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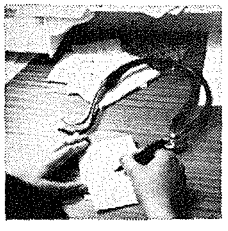

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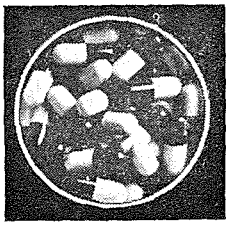

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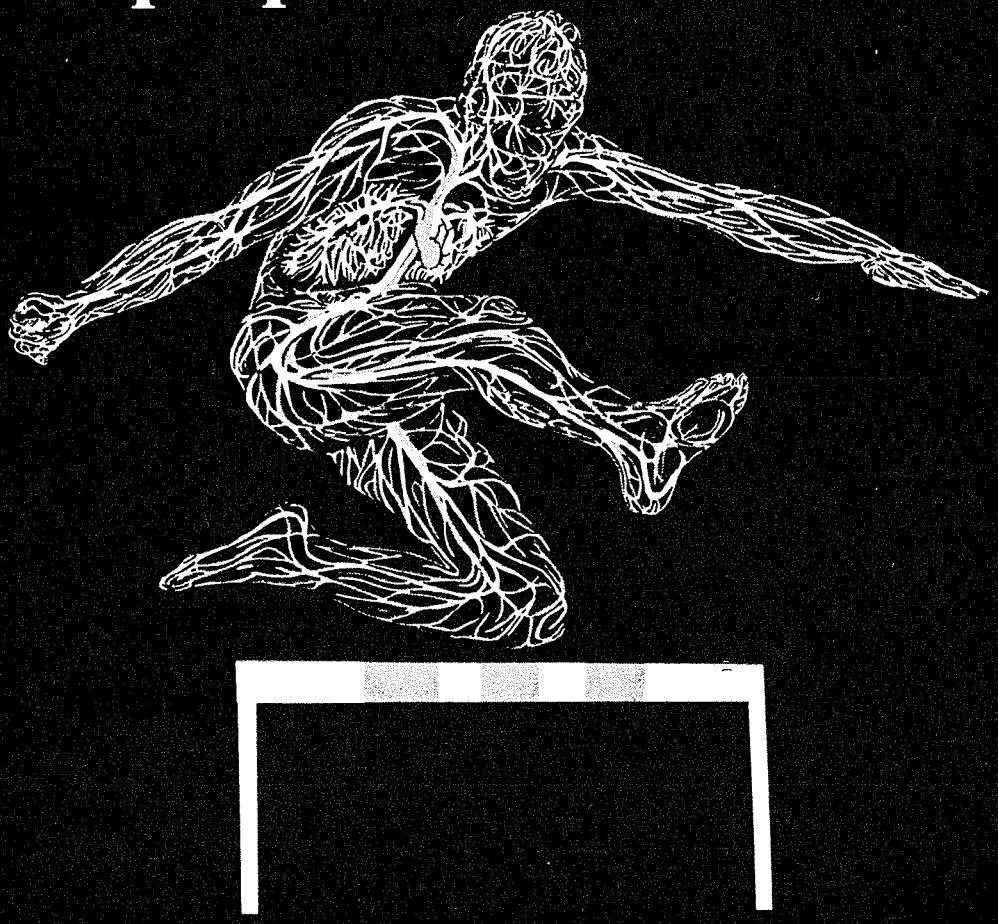

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THE MALTA MEDICAL STUDENTS' JOURNAL

MALTA | Vol. 111 No. 1 | AUGUST 1969

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EDITORIAL

Some while ago there was a debate in the local press in which some found it praiseworthy that the nation's university students did not stand up and march in protest against some form of existing establishment. Others pointed out that this was to no small extent a manifestation of apathy. Whatever it was would be difficult to say and perhaps embarrassing for many student committees — but there are at present a few facts that could be pointed out.

It is a pity that students rarely express their opinion on curriculum affairs. In the recent survey it was also unfortunate that the opinions voiced by the students at the end of their questionnaires were not published with the results of the survey. The comments that were put down are outstanding in every respect — they dispel once and for all the belief that students are not of any value in advising staff on educational matters. From them it is painfully obvious that there is a great deal of discontent with several facets of medical education in this Medical School. Most remarkable, however, is the fervour with which these grieviances are aired. This reveals what little opportunity students have to express their feelings on various shortcomings in in the educational system.

In the Medical Faculty there are a separate Student Association and Student Journal which should permit a greater degree of staff-student exchange than in other faculties. All this, however, is rendered impotent by the fact that so far no students sit on the faculty board. This long awaited climax is at last close to reality, and students will be able to play a tangible part in the organisation of their education.

It is above all up to the student to promote a better staff-student exchange of opinion. Indeed, it would be a great achievement if the new M.M.S.A. committee were to orgnise a joint meeting between staff and students. Both sides would undoubtedly benefit from a better understanding. Without such a progressive step, our critics would be justified to a large extent in calling us apathetic.

We take this opportunity to extend our wishes for a happy retirement to Professor Craig who has done so much to the teaching of Surgery in Malta.

May we also take this opporunity to congratulate Professsor Grffiths on his appointment as Professor of Surgery.

ACKNOWLEDGEMENTS:

The Editor wishes to thank Mr. J. Bozzino & Mr. F. Portelli who kindly helped in the preparation of this issue during his absence abroad.

MALTA AND ITS MEDICAL SCHOOL

PAUL CASSAR S.B.St.J., M.D., B.Sc., D.P.M., F.R.Hist.S.

This paper was read at the Opening Ceremony of the 12th Annual Clinical Meeting of the British Medical Association in Malta, in April 1969.

The Maltese Islands have known the handiwork of man since the Stone Age about 3000 years B.C. They were later colonized by the Phoenicians and the Carthaginians and subsequently enjoyed the benefits of Roman civilization and shared in the Arab invasions of the Mediterranean. In 1099 they were conquered by the Normans and from then onwards formed part of the domains of the Kings of Sicily until they were handed over to the Order of St. John of Jerusalem in 1530.

A medical service begins to emerge from the shadows that envelop our social history in the early 14th century when the small Hospital of the Holy Ghost was functioning at Rabat near the ancient capital city of Mdina; but the origins of formal medical education in Malta begin in the last quarter of the 17th century.

The first to be established was a School of Anatomy and Surgery which was founded on the 19th December 1676 by Grand Master Nicholas Cottoner, the Head of the Order of St. John which then still ruled over the Maltese Islands.

The Director and Teacher was a physician who gave lectures at the Holy Infirmary of Valletta to the barber-surgeons of the hospital and to other young men who aspired to become surgeons. They were taken for training at an early age — sometimes as early as 12 years — were required to be able to read and write, and had to undergo a course of studies and practical training lasting ten years.

The first Director and Teacher was Dr. Joseph Zammit who besides being a physician was also a priest and a member of the Order of St. John. This combination of priest and physician was a continuation of the medieval tradition when priests played an important role in the study and practice of medicine on the continent of Europe since at least the 10th century. Zammit was, besides, the physician-in-chief of five successive Grand Masters, the founder of a garden of medicinal herbs for the practical instruction of his students, and the donor of a library which was set up in the Holy Infirmary.

At this period, however, no dissection was performed perhaps because Zammit, being a priest, was debarred from cutting up the human body in the same way as ecclesiastics had been forbidden by the Lateran Council of 1215 from carrying out surgical operations; but in the first quarter of the 18th century a Maltese surgeon was sent to study anatomy at the hospital of Santa Maria Nuova at Florence and on his return to Malta in 1723 public lectures in anatomy with demonstrations on the cadaver became a regular feature of the School. From this time onwards special stress was laid on the attendance of students at the anatomical dissections and demonstrations while it was also made obligatory on the surgeons and barber-surgeons of the Holy Infirmary and of the navy of the Order of St. John to take part in these anatomical sessions. To forestall objections to the dissection of the human body and to provide the teacher of anatomy with the necessary material, it was laid down that the corpses of the knights and of patients dying in the Infirmary were to be dissected by the teacher of the School. This measure was a noteworthy advance quite in contrast with arrangements existing in some contemporary medical schools on the continent and in Great Britain where only the unclaimed bodies of patients and of executed criminals were available for dissection. You will remember, for instance, how John Hunter in London at the same period had to purchase corpses for dissection from the notorious body-snatchers who stole the cadavers from undertaker's houses and even from cemeteries to sell them to the anatomy schools. The same practice — and even worse — was happening in Scotland.

In accordance with the ideas of the time dissection was only considered to be without danger to health in the winter months and so none was carried out in summer; however to make up for this seasonal interruption in the study of practical anatomy, a number of anatomical models in coloured wax was acquired thus enabling the students to follow their studies all the year round.

Apart from anatomical sessions the students

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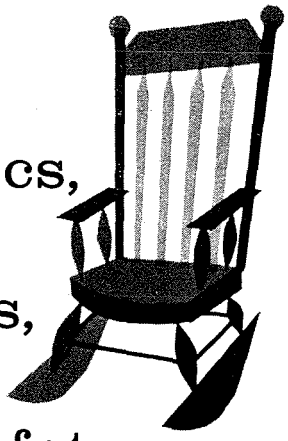

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also assisted at operations, supervised operated cases for signs of bleeding, received practical instruction in the use of the catheter and took part in postmortem examinations.

The School was at its peak between 1765 and 1797. It was then under the physician and surgeon Michael Angelo Grima who, after undergoing preliminary training at the Malta Holy Infirmary, studied medicine at Pisa and surgery at Florence. Here he experimented successfully on the suturing of the intestines in dogs by means of a spiral or continuous stitch and pointed out the possibility of the resection and suturing of the intestines in the human being. At the same period (1754) he removed the spleen from the dog with recovery of the animal and suggested that the same operation was feasable on the human being when this organ was injured by penetrating wounds of the abdomen. Grima is thus one of the early pioneers of experimental abdominal surgery.

During the Seven Years War (1756-63) between England and Prussia on one side and France, Austria and Russia on the other, Grima served as military surgeon for two years with the French forces. He thus formed the view that war is the great school not only of traumatic surgery but of the whole of medicine. How true that observation is we have learned ourselves in connection with the two world wars of this century. As a result of his experiences in the military hospital at Cassel he published a book on wound surgery in which he discusses the diagnosis and describes the treatment of wounds and of head injuries. It is of interest to recall that Grima was a contemporary of John Hunter who like the Maltese surgeon saw active service in the same war, though on the opposite side (1760-63), and who also wrote a great work on gunshot wounds.

Grima introduced the teaching of operative surgery in our school so that every student, before qualifying as a surgeon, had to pass a practical test in this subject.

In those days the accepted method of teaching consisted in the dictation of notes by the lecturer — a tiring and discouraging procedure. To overcome this drudgery, Grima published a textbook on anatomy for the benefit of his students. He wrote other works in French, Italian and Latin among which one on popliteal aneurysm which he published in London in 1773.

In 1769 the Jesuits were expelled from Malta and their property was seized by the Order of St. John. Out of the revenues accruing from this property a University was founded by Grand Master Em. Pinto de Fonceca but it was not until 1771 that the Faculties of Theology, Law and Medicine were established. While, before this year, young Maltese men wishing to become surgeons had been able to pursue their studies at the Malta Surgical School, those who aspired to follow medicine and become physicians had to study and obtain their qualifications abroad as no facilities existed locally for the formal teaching of medicine. They usually joined a medical school or university in Italy or France, most of them going to Naples, Salerno and Montpellier. This state of affairs was remedied in 1771 by the establishment in Malta of a university and the incorporation of the School of Anatomy and Surgery in the new Medical Faculty. Thus Maltese students were able, from then onwards, to study both surgery and medicine in Malta.

After a Preparatory Course leading to the degree of Master of Arts, the student entered on the Academical Course proper which lasted five years. The Doctorate of Medicine was granted at the end of this course after approval of the student at a private and a public examination. The licence to exercise the profession was not, however, issued to him until he had done six years clinical practice at the Holy Infirmary.

While these educational developments were taking place in the medical field in Malta, the continent of Europe was being swept by a great political upheaval. From the turmoil of the French Revolution issued forth the dynamic military genius of Napoleon Bonaparte. In June 1798 the French general appeared off Malta with a mighty fleet and a great army on his way for the invasion of Egypt. The Order of St. John surrendered the Maltese Islands to the French forces without a struggle. There followed an unhappy time for our cultural life as the new masters abolished the university and medical studies were interrupted for the next two years.

Meanwhile Horatio Nelson had been shadowing Napoleon in the Mediterranean; the Maltese rose against the French and penned them inside the fortifications around the Grand Harbour and appealed to Nelson to come to their aid by blockading the French from the sea and thus cut off all their supplies. After a siege of two years, the French capitulated and the Maltese placed themselves under the protection of His Britannic Majesty.

One of the first acts of the British Royal Commissioner at the head of the Maltese government was the re-establishment of the University on the 6th November 1800 and the resumption of medical studies so that by 1804 the first medical men to qualify under British rule obtained their warrant to practice. Al-

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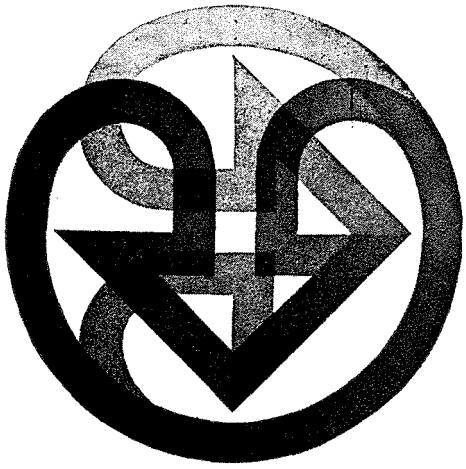

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though in the early decades of the 19th century a number of Maltese students still went abroad to pursue their medical studies they no longer confined themselves to Italy and France but in 1834 opened a new trek this time to Edinburgh which was then at the height of its fame as a medical centre.

By 1838 the Medical Faculty of our University was brought into line with the standards of medical schools in England so much so that in July of the following year His Excellency the Governor of Malta, Sir Henry Bouverie, wrote to the University of London to acknowledge the medical students of our University on the same footing as other students of medical schools in the United Kingdom. A few weeks after the receipt of His Excellency's despatch the Senate of London University resolved to admit candidates from the Malta medical school for the degrees of the University of London.

Progress in medical education continued to gain impetus so that when in 1878 Mr. Patrick Joseph Keenan, Resident Commissioner of National Education in Ireland, was sent to Malta to inquire into our educational system, he declared "that the University of Malta presents, in the case of every one who obtains its degree, a well qualified doctor and surgeon".

By the turn of the century British medical institutions had recognized our medical examinations and degrees. In 1898 the Royal College of Physicians and the Royal College of Surgeons of England allowed medical graduates of our University to sit for the final examination of the Conjoint Board. In 1899 the Society of Apothecaries of London recognised the medical course of studies pursued in Malta and granted admission to Maltese graduates to the examination for the diploma of the Society. In 1901 medical graduates from our university became entitled to register and practise in the United Kingdom. Reciprocal recognition of medical qualifications was established early in 1954 with New South Wales; with the state of Victoria in 1955 and with Western Australia and with Pakistan in 1957. Thanks to these outlets Maltese doctors have served in the Colonial Medical Service and in the medical branches of the British Armed Forces. Others have settled and are practising in the United Kingdom while some of our specialists have been given special assignments in various parts of the globe by the World Health Organization in the control and treatment of infectious diseases. Thus although our roots run deep into the past we belong to the present for we have all along been assimilating new ideas, increasing our wealth of experience and broadening our horizon.

In this process of maturation we have been forging strong links with British medicine since our political connexion with Great Britain at the beginning of the 19th century. A few instances will be mentioned. Malta was one of the first British territories to enjoy the benefits of Jenner's discovery of vaccination in 1800; Sir Thomas Spencer Wells, the pioneer in 1847 of ether anaesthesia in Malta, belonged to the Maltese Medical Society of Encouragement some of whose members submitted themselves to his practical demonstrations on the effects of ether inhalation; Professor Salvatore Pisani, with other Maltese surgeons, worked with Florence Nightingale at the Crimea and gained her admiration for his stirling work with the sick and wounded. It was to the mutual respect between British and Maltese doctors that the Malta Branch of the BMA owed its origin in 1888. Two years earlier Sir David Bruce received such great help from Dr. Giuseppe Caruana Scicluna in the preparation of agar media that were it not for this assistance he would not have succeeded, as he himself declared, in culturing the microbe responsible for human brucellosis; Sir Themistocles Zammit, the only Maltese member of the Mediterranean Fever Commission of 1904-6 worked hand in hand with his British associates and became immortalised for his fundamental discovery of the microbe of Undulant Fever in the blood of the goat, thus furnishing the key for the eradication of this disease from the Maltese Islands. During the First World War our medical students joined the RAMC while our medical professors and lecturers worked with such distinguished consultants as Col. Charles Ballance and Col. A. Garrod.

This traditional spirit of Anglo-Maltese collaboration was strengthened during the Second World War and persists to this very day. We are indeed making history to-day for when the BMA moves out of British soil for its Annual Clinical Meeting, the venue and the hosts are Malta and the Maltese medical profession.

WOUND HEALING - A RE-APPRAISAL

by BRIAN MACKENZIE CRONIN

PART ONE

"The History of Wound Healing reflects the history of the development of Surgery", states Boyd in his textbook of Surgical Pathology. (1). Recent developments in the field of surgical research have indicated startling possibilities for developments which will necessitate the evolution of completely new concepts.

Since the subject of Wound Healing is more than adequately dealt with in textbooks, it is proposed to cover only those concepts which have arisen in the last few years, although any essay dealing with Wound Healing without a brief recall of the historical milestones would be incomplete.

HISTORICAL EVOLUTION OF WOUND HEALING

> "In the first place the lips of the wound are debrided, then the wound should be, and all about the wound should be abraded, completely cleaned of fuzz, hair and anything else, and let it be wiped dry with fine lint soaked in warm wine and wrung, and thus the lips of the wound may be reunited as well as possible in accordance with their original healthy state; and having made compresses of fine and clean lint soaked in warm wine and placed upon the wound so as to fit, let it be bound with a light bandage in such a way as reapproximation of the edges cannot be disturbed at all, and just as we have said before, do not undo the dressings until the third, fourth or fifth day if no pain occurs".

This vivid description with, perhaps, alcohol replacing the warm wine, could be as relevant today as it was when written in 1266 by Theodoric of Cervia (1205-1298), a treatment which he attributed to his father, Hugo of Lucca. (2). Such has been the development of surgical techniques that at one time this description was forgotten. Some surgeons argued that pus in the wound intimated that wound healing was undergoing its natural course, a contention strongly disputed by Theodoric.

Man's increasing search for power led to the invention and use of more and more powerful destructive weapons which presented special problems to doctors throughout the ages since the first use of gunpowder in the battle of Crecy in 1364.

Guy de Chauliac gave us a clear description of how to treat penetrating wounds of the abdomen, methods of removing foreign bodies (saying "Nature expels all that is strange to her"), and various kinds of sutures.

Some doctors poured hot oil onto gunshot wounds until that memorable day when Ambroise Pare ran out of oil and found that those wounds left untreated healed better and faster than those that had been traumatized iatrogenically. He claimed: "I dressed the wound, but God healed it".

Even the great John Hunter (1728-1793) who differentiated between healing by first intention and healing by second intention, advocated against probing and for leaving bullets in gunshot wounds since he was convinced that suppuration around the wound would extrude the bullet. Neither did he believe in debriding wounds and left blood clots in them.

Sir John Pringle coined the term "antisepsis" in 1750 and is now regarded as the father of modern day military surgery.

In the American Civil War (1861-1863) wounds were cleaned with dirty sea sponges which, when not in use, were kept in buckets.

In the 1840's Oliver Wendell Holmes and Semmelweiss published articles on the spread of puerperal infection. Pasteur and Koch's great work in bacteriology, closely linked with Lister's epoch-making treatise swept away for ever the black magic era of surgery.

In 1867 Lister published his articles on the antiseptic treatment of wounds.

In 1874 Sir John Erichsen prophesied that the abdomen, chest and brain would be forever closed to the surgeon's knife!

Halstead (1889-1922), Professor of Surgery at Johns Hopkins University, brought a new meticulousness into the handling of tissues at operation and emphasised the danger of dead space in the wound. He treated wounds by allowing a blood clot to form and suturing over the blood clot. He claimed good results and endowed the blood clot with almost magical properties.

From the battlefields of attrition of World War 1 with their mangled bodies came notably the Carrel-Dakin treatment of wounds, the use of immobilisation and the gentle surgery preached by Halstead being embodied by Moynihan's "caressing of tissues". A great breakthrough was the pioneering of plastic surgery. The use of antisepsis was not favoured by the majority of surgeons who instead minimized wound infection by debridement.

Table of Pathological Changes

EPITHELIUM		DERMS & S/Cut. Fat		DAYS
Intraincisional	**Peri-incisional**	**Intraincisional**	**Peri-incisional**	
I: LAG PHASE (Catabolic or Proliferative Phase)				
EPITHELIALIZATION		INFLAMMATORY RESPONSE		
1. Two thickening, advancing epithelial sheets.	1. Hyperplasia. No. of mitotic figures increases	**A. Acute or Exudative Phase**		
(after 12 hours)	2. Epithelium and rete pegs thicken.	1. Small round cells accumulate in injured dermis	1. Vasodilatation 2. Diapedesis of r. b. c.'s and polymorphs	1
2. These unite within 24 hours.				
3. Invasion by primary "spur" into line of incision.				
A. Invasion along incisional line due to:			1. Mononuclears appear to stream into wound space	2
a) Phagocytosis by epithelial cells b) Proteolytic enzymes released c) Collagenase		1. Vertically orientated strands of fibrin appear	2. Mitotic figures now abundant	3
B. Short secondary epithelial "spurs" may invade laterally		**B. Proliferative Phase**		
		1. Perivascular cuffing with small round cells	1. Perivascular cuffing	
		2. Collagen precursors (reticulin) seen	2. Capillary sprouts	4
II: FIBROBLASTIC PHASE (Anabolic Phase)		3. Mitotic figures noticeable in PHASE OF COLLAGENIZATION		5
		4. Fibroblasts seen orientated vertically		
		PHASE OF COLLAGENIZATION		
		Tensile strength of wound increase rapidly.		6
		Perpendicularly		7
		arranged collagen		8
		fibres seen.		9
		Progressive Collagenization.		10
		New elastic fibres	Cellularity of	11
		fine, wavy and	loose connective	12
		parallel to	tissue diminishes	13
		surface.		14
III: PHASE OF CICATRIZATION AND DIFFERENTIATION				
			Pseudo rete pegs removed by connective tissue	15
			foreign body reactions.	16
		Scar may widen	Devascularization and no. of new cells diminishes	

Zones of Repair occur in peri-incisional space

In 1944 the first use of penicillin revolutionized the whole field of management of wounds and infections, heralding the antibiotic era with its attendant dangers.

In World War II mortality from penetrating wounds of the abdomen and chest decreased dramatically due to quicker action, better surgery, the use of blood transfusions and the introduction of sulphonamides and later penicillin.

PATHOLOGY OF WOUND HEALING

Studies of wound healing have disclosed the need for investigation in **four** dimensions: length, breadth, depth and time.

The pathological changes that occur in healing of incised wounds are summarised in the table. Diagrammatic representations of the main features are shown in Figures 1 and 2.

Since the factors governing the various stages are complex and much work has been and is being carried out to determine them, it is proposed only to venture briefly into some important explanations that exist at the present time.

Gillman, in his magnificent treatise published in the Archives of Surgery 1966, states that "certain basic problems concerning repair in general still remain unresolved" and "Failure to resolve these problems is in large measure due to the fact that the nineteenth century descriptions of the healing of cutaneous wounds seem to persist unquestioned in the literature". He stresses the need to consider the healing of wounds three-dimensionally in order to understand the histogenesis of complications associated with the repair of a simple incision, eg. epidermoid cysts and abcesses. "The empirically derived surgical conviction of the importance of meticulous haemostasis or effective drainage of blood to promote rapid uncomplicated healing is contradicted by the pathologist's insistance on the role of fibrin as a scaffold permitting fibroblast invasion into incisions".

Gillman forcibly pointed out that the first tissue link between the two sides of the wound is epithelium and not connective tissue. He stressed that the processes of repair in the healing of incised and excised cutaneous wounds are fundamentally similar. Blood clots play no role in repair other than in promoting haemostasis, acting transiently as a wound glue, and serving as a wound dressing. Evidence indicates that the intraincisional blood clots usually retard healing for as long as it takes the macrophages to remove the blood from the site of the injury.

Gillman goes on to attack the traditional suturing method and talks of the Suture Needle Puncture Wound (S.N.P.W.) and Suture Track (S.T.) which cause the interdermal injuries. A 6" long incised wound with the edges coapted with strips has a volume of 8 cu. mm. By contrast, a 6" long wound sutured conventionally becomes converted into an excised wound with a volume of 88 cu. mm.

HOW DOES THE INITIAL PROCESS OF EPITHELIALIZATION TAKE PLACE?

Epithelialization is the process by which the surface of a wound is restored and approaches more closely the ideal of regeneration — *restituto ad integrum* — than does any other tissue; as opposed to the process of repair, which is a process of healing in which a new structure — a scar — is formed.

Medawar has pointed out that cell movement is fundamentally important in regeneration and in embryonic development. (4). Some authors claim that the epithelial cells move by amoeboid movement of the advancing edge of skin. It appears more likely that (5) the advancing cells are elongated and overlap one another. The cells then seem to roll over one another and are successfully implanted on the wound surface, — roughly analgous to the movement of a caterpillar track.

Individual vertebrate cells of almost all kinds have the ability to crawl along any solid substance to which they can adhere to an appropriate degree at the rate of 50-100*u* an hour (a yard a year) compared to a white blood cell which can move ten times as fast.

In 1915 Rand stated "Epithelium will not tolerate a free edge". Friedenwald and Buschke in 1944 observed cell migration in the cornea. Abercrombie in 1966 considers that the processes of mitosis and mobilization are promoted by products of cell damage and death, and keeps in mind the "old-fashioned" idea of a Wound Hormone. (6).

What is clear is that the epithelial cells that are "on the march" are capable of cutting through collagen and blood clot, due partly to their power of phagocytosis (7) and partly to the proteolytic enzymes that are released at the moving edge.

Professor Debono (8) wrote in 1949 "It appears further that the processes of regeneration have a priority over the maintenance of the body. Thus the salamander will reform its tail even if starved of food by utilising its own body tissues. In this way also may be explained the rapid wasting in cases of extensive wounds. Further, in Malta, during the Siege, the healing of wounds occurred normally even though the diet was very near the indispensable minimum".

There is much evidence that dedifferentia-

FIGURE 1

Cross Section through an incised wound :-

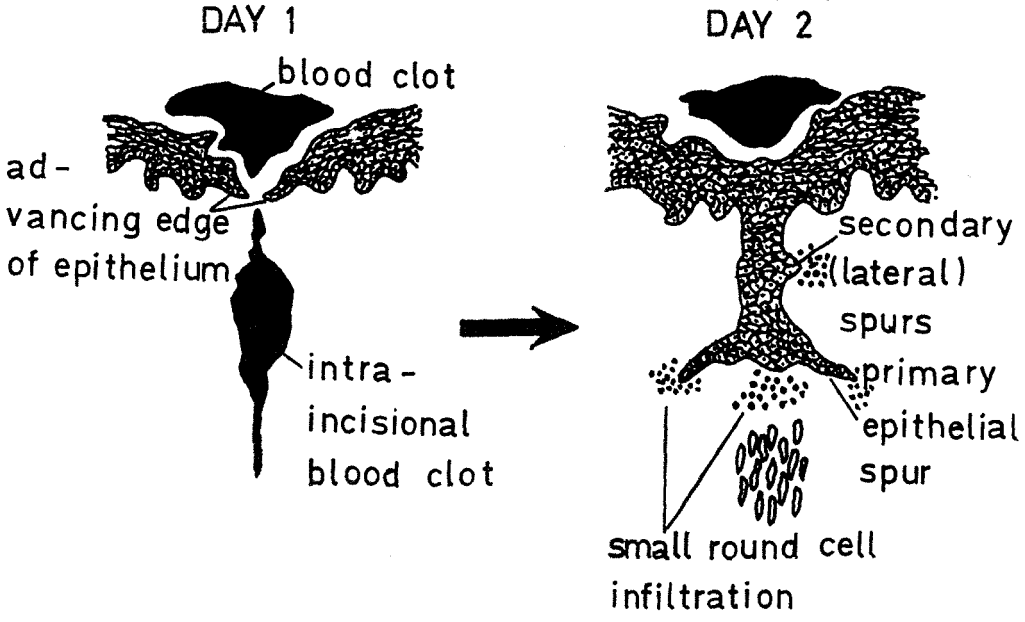


FIGURE 2

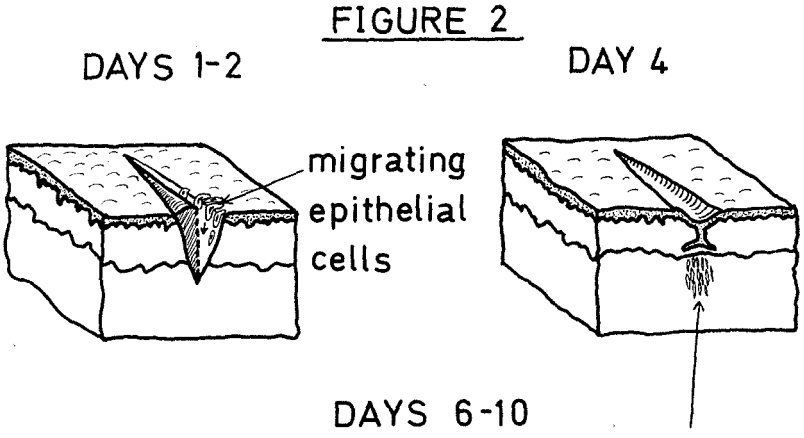
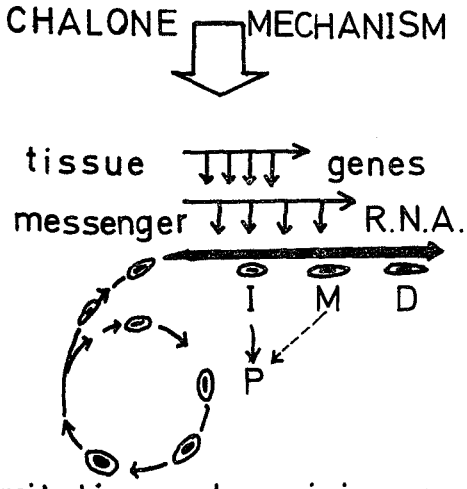


FIGURE 3

A Representation of life of tissue cell :-



mitotic cycle : minimum duration of 12 hours

B: Control mechanism of cell :-

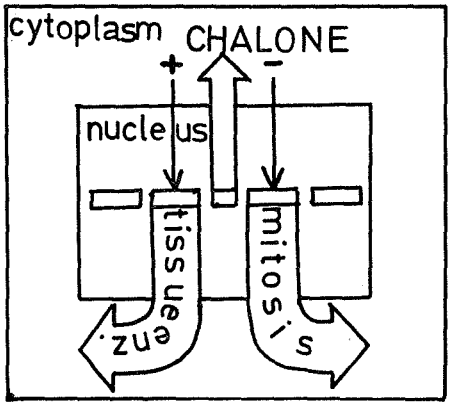
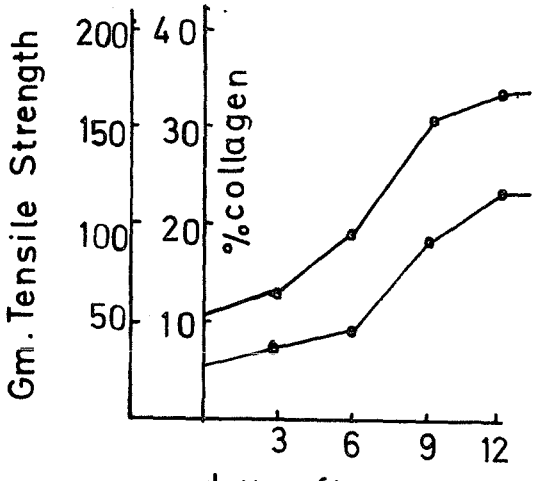
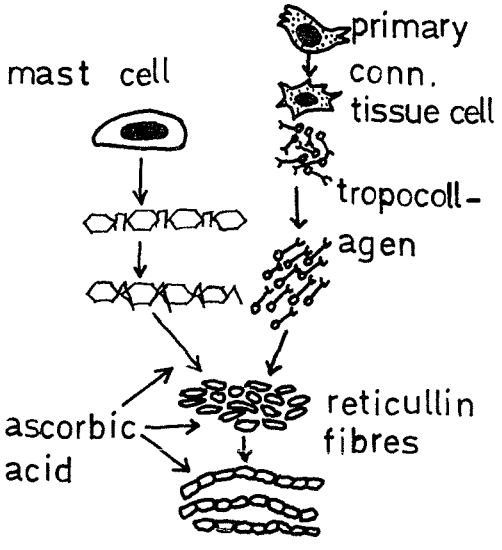


FIGURE 4

A: Correlation between Tensile Stength and Collagen content of incised wounds :-



B: Theory of collagen formation :-



tion to a more embryonic state is a general prelude to successful regeneration. Young individuals regenerate most rapidly and the power of regeneration declines with age. It is known that regeneration competes with sexual reproduction and it is often poor during the breeding seasons, even in animals which regenerate well at other times.

From such and other observations emerged a theory which has widespread implications. No essay on wound healing would be complete without its delineation.

THE CHALONE THEORY OF BULLOUGH (9)

Immediately after injury mitosis is seen first in those cells which have remained static on the original edges of the wound; it is rarely seen in cells that are actually migrating, and continues for some time after the wound has been closed and all movement has ceased. Bullough stresses that any one living cell at any one time may indulge in only one of three processes, i.e. movement, mitosis or manufacture of specialised cell products. Those cells involved in mitotic cycles he labels P cells (Progenitor cells), those preparing for tissue function he calls I cells (Immature), those potentially or actually functional (M cells), and the D cells those which are functional but which are moving irreversibly towards death. (See Figure 3).

Cells in the groups I and M can, when necessary, revert to the mitotically active state whereas cells of group D (eg. mature R.B.C., granulocytes and cells of epidermal stratum granulosum) cannot.

The range extends from duodenal mucosa where the I cells predominate to the epidermis where D cells predominate.

It now appears probable that within the epidermis the functionally active cells produce some substance which acts in the manner of a negative feed-back mechanism to suppress mitotic activity selectively in epidermis. Such a substance is called chalone. A high chalone concentration results in inactivation of those genes on which mitotic actively depends.

In cases of simple wounds the highest rate of mitotic activity occurs in a narrow zone about 0.3 mm. wide immediately adjacent to the edges of the wound at a rate 20 times that of mitotic activity in normal tissue at sleep (10). The length of the normal mitotic cycle of P cells is reduced to a minimum of 12 hours. I cells revert to the P form as may some M cells, but never D cells. Bullough says that the local mitotic reactions are more reasonably explained in terms of local loss of mitotic inhibitor synthesised in normal tissue than by the old theory of a Wound Hormone.

When varying degrees of liver are destroyed (from 10% to 70%) the strength of the mitotic reaction is in direct proportion to the amount of tissue lost. When one kidney is removed cleanly with no damage, the other kidney grows to double the size. This can be explained by depletion by half of the total body kidney chalone. During starvation and also during shock, mitotic activity around a wound may be powerfully suppressed, thus the avoidance of these two factors leads to better wound healing.

CHALONES AND CARCINOGENSIS

Since lack of mitotic control is a distinctive feature of tumours, it has been suggested that they may fail to synthesise or release an adequate concentration of tissue specific chalones (11).

INFLAMMATORY RESPONSES IN WOUND HEALING

"The morbid process designated by the term Inflammation, being one by which every organ and probably every tissue of the body is liable, possesses a deeper interest for the physician or surgeon than any other material subject which could be named... It is upon the **first** deviations from health that the essential character of the morbid state will be most unequivocally stamped and it is therefore to the early changes of Inflammation that attention must be chiefly directed" (12). This view expressed by Lister 111 years ago is as pertinent today as it was then.

The Inflammatory Response in Wound Healing may be divided into 2 phases (see Table of Pathological Changes).

A. THE ACUTE OR EXUDATIVE PHASE

For the first two or three days after injury this exudative inflammation is devoid of mitotic activity and is characterized by the exudation and emigration into the wound of firstly plasma proteins and mucoproteins, then of polymorphonuclear cells, and later by small round cells, all derived from the circulating blood.

Pappenheimer (13) estimated that the amount and composition of normal transudate could be accounted for by uniform porosity of the vessel walls. Landis proposed the name Fenestellae for the holes that vere postulated to exist mostly in the venular ends of the capillaries and in venules. Membrane porosity is thought to increase after injury. The mediators of this inflammatory response are not as yet identified completely.

Monocytes arriving at the scene are able to transform themselves into histocytes or macrophages. The appearance of kininogenases and

kinins is indisputable, but whether they have initiated the phase of exudation, or have been formed as the result of the exudation is still a matter of speculation.

B. THE PROLIFERATIVE PHASE

After the third or fourth day the Inflammatory response changes its character. This change is heralded by the enlargement and increasing basophilia of the small round cells and possibly of neighbouring resident fibroblasts. These changes invariably lead to some degree of fibrosis. Capillary endothelium thickens and forms buds which become canalized and transformed into capillary loops.

PHASE OF COLLAGENIZATION

Among the most important unsolved problems of Wound Healing is the origin of the fibroblastic cells population, and its ultimate fate. Twenty years ago (8) it was thought that the fibroblasts arose from fixed tissue cells in the area of the wound by returning to embryonic state and then beginning to proliferate. It is now generally thought that the fibroblasts are derived from the circulating blood. (3). The origins of the collagen fibres have been summarized by Dunphy (14). There is no doubt that with increase in collagen deposition the tensile strength (load per unit area at the point of disruption) of the wound increases and is especially marked on the 6th and 7th days after injury. (See Figure 4).

After day 20 there is a decrease in the number of new cells seen in the incision. After day 30 the number of new vessels diminishes.

Douglas, Professor of Surgery in Dundee, records in his paper of 1969 (16) how young collagen matures and the wound continues to become stronger. Human skin has very great tensile strength which varies from 20 — 44 Kg., whereas wounded skin is very much weaker, varying from 8 — 80% of intact skin.

There appear to be two main points of differences between Dermal Collagen and Wound Collagen:—

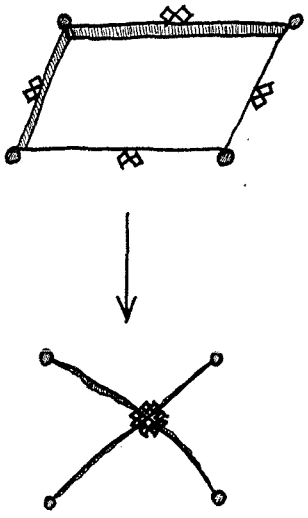
1. Dermal Collagen is arranged in much larger bundles than Wound Collagen.

2. Dermal Collagen bundles are birefringent (refractile under polarized light) whereas Wound Collagen is not, or only weakly so. After 52 days from injury there is no noticeable difference between the two. Hence, since at 50 days the wounds are still much weaker than intact skin, other factors such as orientation and arrangement of the fibres may be involved.

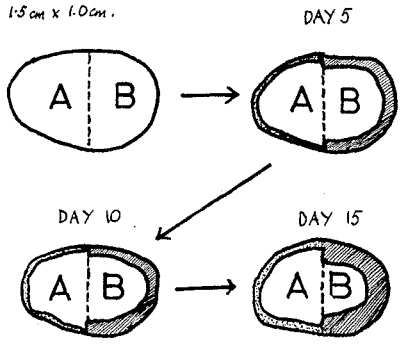
Douglas states that in man restitution to normal does not occur after wounding — a

FIGURE 5

A Rectangular wound :-



B Effect of removing scab :-



Observations 1. Side B had scab removed each day as it formed : A left intact. At present time scar is still faintly visible : measuring 1·3 cm x 0·9 cm.

2. Rectangularly shaped wounds have a greater power of contraction than do circularly shaped wounds

scar on the face is detectable for the rest of an individual's life —. A fracture of a long bone is permanently discernable on radiological examination, and repeated injury to the brain in professional boxers is associated with notable changes in intellectual performance.

MECHANISM OF WOUND CONTRACTION

The repair of full thickness excised wounds of the skin is not accomplished simply by the production of a scar whose dimensions are those of the original deficit. Instead, the intact skin bordering the wound is drawn centripetally with the consequence that the eventual scar area is considerably less than that of the wound. (See Figure5). The mechanism of wound contraction remains yet another unsolved problem.

Abercrombie (17) believes that the cells that have recolonised the wound (fibroblasts) have a motive power.

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Part two will be included in the next issue of Chestpiece.

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ST ANTHONY'S FIRE

ANTHONY A. BUSUTTIL, M.D.
Demonstrator in Pathology

In studying medicine, encounters with relics of the past in the shape of eponyms often make one stop and wonder as to the association between the medical syndrome or term concerned and the character recalled. It is even still more fascinating to investigate and ponder upon such a correlation when the individual immortalized does not happen to be a physician, sugeon, or alchemist of old, but a complete alien to the medical profession; in this case an ascetic, a saint: St. Anthony of Egypt! The close affinity of medicine and pathology to priests and ascetics is as old as man himself; man always sought supernatural aid in his sickness, when therapeutic aid was fruitless or not forthcoming, and the priest mediated his claims and supplications with the deity. With the advent of the Christian era and culture, this did not change, and the taumaturgical powers of various saints and holy men have been invoked in unmerous diseases, plagues, and pestilences of man and beast alike.

'St. Anthony's Fire' has been found to be synonymous with at least three human ailments, namely: herpes zoster (shingles), erysipelas, and 'ergotism' (chronic ergot poisoning). A remarkable fact is that this name is applied popularly to the same three diseases wherever Christian culture has ventured. This close association of Anthony's name with these three well-defined and mutually unrelated diseases is worth investigating. Fortunately a biography of Anthony of Egypt is available in which the saint's association with fire is documented. A glance at the social and epidemiological history of centuries by-gone also shows why these diseases are specially put aside for Anthony's protection and intercession.

ANTHONY OF EGYPT

Anthony's life is very well authenticated in Christian hagiology. He was born at about 250 A.D. at Comus (nowadays Qeman), a town lying on the west shore of the Nile in a district of Central Egypt then known as the Fayum, very near to where the city of Heracleopolis Magna (nowadays Bahr Yusuf) was situated. His parents were wealthy merchants, devoted to the Christian way of life. At their death, when Anthony was about 20 years of age, he left his home after following the evangelical exhortation to the letter, and took to a secluded way of life, deprived of all the world had to offer him. He inhabited some ancient Egyptian tombs, a few miles away from his native town. Later he crossed the Nile and lived in an abandoned fort on a mountain on the east bank of the Nile at the site then known as Pispir and nowadays as Der el Memun. He stayed here for about 15 years, and during this time a number of disciples had gathered around him imitating his ascetic way of life. Following a brief return to civilisation in order to denounce and combat the anti-Christian persecutions then rampant and to preach against the Arian schism, he returned to the desert, and lived on another mountain, situated in between the Nile and the Red Sea and still known to this day as Der Mar Antonios, to the ripe age of 105 years. He died round about the year 356 A.D. According to tradition his relics were discovered and transferred by his followers in the ninth or tenth century to St. Didieu-de-la-Motte in France and later to St. Junien, a town on the Vienne River, lying north of Limoges. It was here that in 1046 the first of a number of Antonian Societies was founded.

All that is known of Anthony's life comes to us from a lengthy biography of his life written in Greek a year after his death by St. Athanasius of Alexandria (297-373). Later this was translated into Latin by the renowned ecclesiastic historian, Evagrius, bishop of Antioch (536-600). This became widely known throughout the years as the **"Vita Antonii".** Both St. Augustine of Hippo (354-430) and St. Jerome of Bethlehem (340-420) were conversant with Anthony's life history, and mention of it is found in their writings that have come down to us. In Book VIII of his **'Confessiones',** Augustine speaks with Nebridius, his friend, 'on Anthony the Egyptian monk'. Secondary less authentic and historical sources are the **APOPHTHEGMATA,** the writings of Johannes Cassian, the fifth century French monk, and **Palladius' 'Historia Lausiaca'**

About twenty epistles in the Coptic and Arabic tongue, and various other written sermons and discources have been attributed to Anthony. Most of these writings have been

classified downright as apochryphal. In St. Athanasius' biography, Anthony pronounces a lengthy discourse in exhortation of his colleagues. This deals mainly with the duties of spiritual life with special reference to the struggle against evil and warfare against the devil and his doings.

FIRE AND ANTHONY THE HERMIT

The saint is hailed as the founder of Christian monasticism and ascetism to this very day. A salient feature in his life as a hermit was his constant struggle against the powers of evil. The devil tried Anthony's deep-seated devotion by herculean tribulations, temptations and physical suffering especially during his earlier years of stay in secluded life. He appeared to him in the guise of fierce wild beasts and as evanescent female shapes.

Anthony's battles with the devil inspired and fired the popular cult that grew around his name, first in the oriental churches and later in the Roman church. His miraculous powers and his mighty intercession against the penal fire of hell were sought and invoked. With the greatest probability this was the reason why his aid was sought in ailments where severe burning pain, to such an extent that it resembled hell's torments and fire, was the presenting symptom, remembering that sickness was then still regarded as a punishment for a serious misdemeanour and sin.

ANTHONY IN FOLKLORE AND ART

Part of his early cult was also probably a Christian adulteration and substitution of the Cult of Prometheus, the Titan who stole fire from Heaven's boss Jupiter to donate it to man. In fact as part of the folklore around his feast huge bonfires were lighted in his honour. Large quantities of wood were gathered collectively by the villagers or townsfolk, piled and burnt on January 16th, the eve of his feast. These bonfires were so large as to go on burning for days on end. Portions of the charred wood that were left were conserved as religious objects said to protect against the devil and his doings, and against the diseases known after Anthony's name. Such bonfires are still being lighted as part of the festivities in his honour in certain French villages.

The saint and his colourful temptations by the devil have been the object of numerous works of art. St. Anthony is often depicted as an old man, with a long beard, with or without a cowl, often holding in his hand a hermit's staff in the shape of a T, with a bell hanging from it and with a pig by his side (the latter being both privileges of the pious Antonian orders founded in the eleventh century in France). The torch or a flame relating to his taumaturgical powers over disease is also often seen. Gustave Flaubert (1821-80), the French writer, has also written a novel relating to Anthony's temptations entitled **'La Tentation de Saint Antoine'.**

SHINGLES OR HERPES ZOSTER

Herpes zoster (GK: Herpein — to cover, zoster — girdle) or shingles is well-known to be characterised by excruciating, burning pain before, during and at times for months after the actual appearance of a vesicular eruption along the course of a peripheral cutaneous nerve, usually the intercostal. Modern therapeutics can do very little even at this day and age for the relief of such pain. Centuries ago the relief of such a condition may have been somewhat worse. Another alarming feature of the disease was that it also occurred in small outbreaks often associated with epidemics of chicken-pox in children, and in years gone by any sort of catching disease was the Plague. It is no surprise that Anthony's miraculous aid in this disease of fire was implored and accredited with cures.

ERYSIPELAS

Eryipelas (Gk: erythros — red; pella — skin) is another disease characterised by very marked inflammatory symptoms and a severe, infernal, throbbing and burning pain in the affected part of the body. This disease was of grave importance when it affected the face; it was also known to be contagious. In aging, undernourished, and debilitated persons as well as in puerperal mothers, the condition was more often than not fatal. Nowadays though the disease is still serious, the advent of penicillin and other antibiotics has greatly detracted from its fatalities; its causative organism, streptococcus pyogenes has been isolated and defeated. Again the reason for seeking Anthony's intercession can easily be surmised recalling that the condition abounded in areas of misery, poverty and famine.

ERGOTISM

The association of St. Anthony with ergotism or chronic ergot poisoning is still more fascinating. Ergot (Fr: spur) or 'Claviceps purpurea' is a fungus that attacks the flowers of cereal plants (Graminaceae) to such an extent that what should have been an ear of grain is replaced by a hard spur-like outgrowth. This parasitic fungus, that grows especially on rye, contains a series of alkaloids and other active principles. The most important alka-

loids it contains are ergosine, ergocristine, ergotoxine, ergometrine and ergotamine. Such organic compounds as tyramine, histamine, acetylcholine, betaine and sapotoxin are also found. This fungus particularly flourishes whenever a spell of sunny weather follows the rainy period, just before the harvest. The cereal plants that are infested with the fungus are poinsonous to animals and man. Cattle consuming such grain show marked degrees of poisoning, a common feature being spontaneous abortions. The fungus is also often ground up with the grain as its size is not such as to allow removal with the ordinary winnowing process. The bread that is baked from such flour is also extremely poisonous.

These alkaloids have a stimulating effect on smooth muscle and an adrenergic blocking action. Therefore if taken over a lengthy period of time arteriolar cotraction occurs leading to ischaemic gangrene of various parts of the body mainly the extremities. Focal or massive gangrene of internal organs has also been reported. Cataract of the crystalline lens also occurs. The peripheral nervous system is also affected in chronic ergot poisoning. The first manifestations of the poison are intense burning pain throughout the body, itching and a sensation of insects crawling over the skin. The central nervous system is also involved; acute organic psychotic states associated with delirium and hallucinations have been described and may constitute the presenting symptom of this syndrome. A common delusion described in such states is that the patient feels that he is being consumed by flames. This symptom has given to the disease the name of 'Mal des Ardents'.

From a review of the nervous manifestations of this form of poisoning, it is no surprise that ergotism and St. Anthony's fire can be synonymous. It must also be remembered that ergotism occurred in epidemic form thus constituting yet a more serious disease.

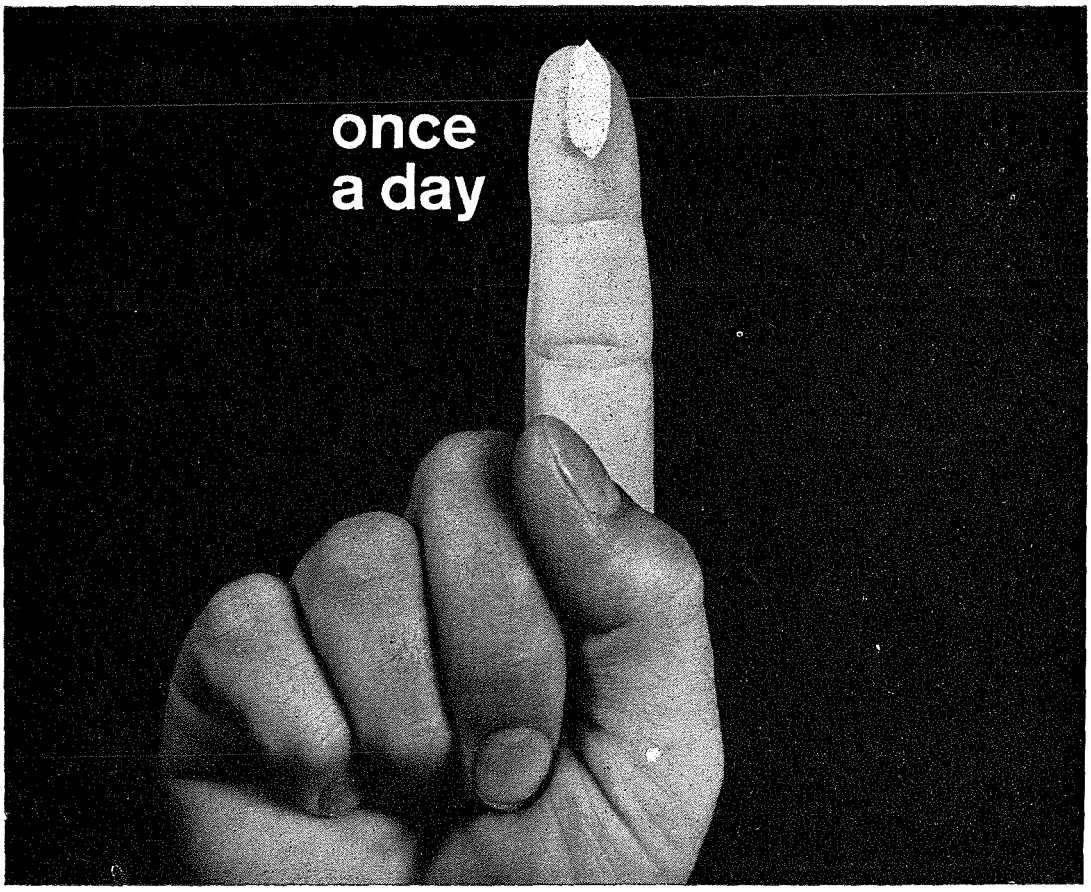
EPIDEMICS OF ERGOTISM

An epidemic of 'Holy Fire' is recorded as far back as 1039 when, during the siege of the city of Lorraine, all classes of society were affected by this form of poisoning as second-rate flour had to be consumed because of inadequate supplies. The epidemic that broke out was considered as a sign of divine wrath for breaking God's truce that fighting had only to be conducted on the appointed days, namely Mondays, Tuesdays and Wednesdays. With the foundation of the Antonian society, St. Anthony came to be regarded as the patron-protector of this illness. A popular mecca of Anthony's veneration was his shrine at Dauphine in France whither numerous pilgrims convened from all over the countryside. St Hugh of Avalon, bishop of Lincoln, visited this shrine in the early thirteenth centry and his private chaplain recorded for posterity the fact that sufferers from the Holy Fire either died within a week or were miraculously cured within the same time period by the saint, notwithstanding the loss of their limbs. It may be interesting to add here that numerous inns and hostels were run by the Antonian order around the saint's shrine, care being taken to treat the pilgrims as well as possible. It has also being shown that spontaneous cure from this form of poisoning occurs if ergot is withdrawn from the patients' diet.

Epidemics also occurred amongst the peasantry in Germany. In 1597, the Medical Faculty of Marburg recommended that fresh eggs and dairy-fresh butter be taken as a form of prevention against the disease. It is now known that hypovitaminosis A is often found in cases where the nervous manifestations of ergotism are more prominent. The physicians of Marburg were also the first to describe the disease scientifically. It is recorded how "the cries of the sufferers could be heard in the villages beyond the eight and tenth house and well off into the fields."

In 1722 two forms of the disease were described; a gangrenous form that was the commoner and presented as gangrene of the extremities, and a conculsive form characterized by twitchings of muscles, spasms and cramps in the limbs with complete loss of the ability of flexion in the limbs. The latter form occurred in the lowest strata of society during epidemics — a deficiency of Vitamin A is often associated. The two forms of the ailment often occurred simultaneously. It was interesting to note that in Germany on the left bank of the Rhine where the rich pasturelands and the dairy farms were, only the gangrenous form of the disease occurred. On the right bank and in Hanover only the convulsive form of the disease was prevalent.

The disease was also prevalent among the Russian farmers. Campredon, the French ambassador to the court of Russia, in his dispatch of the 29th January, 1723, writes: 'Already 20,000 people have died in the neighbourhood of Nijny. At first they thought it was the plague, but the doctors who were sent there after having made a careful examination reported that it was not an infectious disease, but that it arose from bad grain which the people had eaten. The grain is reddish and looks very much like having been spoiled by venomous fogs. As soon as the people had eaten the bread they became stupefied with a



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great contraction of nerves, so that those that do not die on the same day, lose their hands and feet. They fall off in the same way as they do in the country when hands and feet are frozen. None of the remedies which are used in infectious diseases do any good to those affected, and only those escape who have had good food and had eaten other bread." Medieval chroniclers report similar epidemics in France and Germany; only one epidemic of this nature was reported in Great Britain. This occurred in Watisham in Suffolk in 1762.

In 1676, Dodart in France identified ergot as the cause of the gangrene and nineteen years later, in 1695, Brünner inculpated the same poison as the cause of the convulsive form of the disease.

Only three epidemics are on record for the current century. One occurred in Manchester in 1928 amongst the community of 200 refugee Jews. The other occured at the small provincial village of Pont St Esprit in France, in 1951, where 200 of the 4,000 villagers and most of the animals were affected. The latter epidemic was mainly characterised by central nervous system complaints, and delirium was a common mode of presentation. The medieval description of the disease as 'old and young men frantic in the streets and others lying writhing in their beds' was really apt. Another outbreak involving 10,000 people occurred in Russia in 1926-7.

TO CONCLUDE

writhing in the beds' was really apt. Another

The mystery surrounding numerous diseases, and the charm involving their cure have now been broken. Erysipelas and herpes zoster are both known to be caused by micro-organisms, and ergotism by the poisons from a fungus. However St Anthony's name still persists in medical texts — perhaps as a reminder of a former, less materialistic and sophisticated society which could believe in yet another life beyond, or as a sad token of a poorer, ignorant, undernourished stratum of society where the only possibility of a cure in its illness stood not with man, his medicines and ministrations below but with something above that knew no class boundaries or distinctions.

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WHY A PROTECTION SOCIETY

by

J. LEAHY TAYLOR, M.B., B.S., D.M.J., M.R.C.G.P.

Time was when the professional man could pursue his profession secure in the knowledge that his patient or client would be grateful if all went well and unquestioning should events be otherwise. But of recent years many things have changed. Education has led people to ask questions, radio and television have brought details of the latest advances in medicine and science into every home, legal aid schemes have demolished financial barriers. Much of the mysticism of medicine has thus been removed and the patient who does not achieve the looked-for result is today very much more likely to query whether this could have been due to negligence on the part of the doctor or hospital. Nor is it the patient alone who may think along these lines; the insurance company concerned in an accident case will commonly investigate whether any or all of the residual disability resulted from the accident or whether the treatment or lack of treatment contributed.

At the same time as these changes in patients' attitudes have occurred, the complexities of medicine have increased to such an extent that risks are inherent in the diagnosis and treatment of many common conditions. Whereas the pharmacopoeia of fifty years ago could do little good, it could, by the same token, do little harm. The potent remedies of today are, if misapplied, no less potent in their harmful effects.

What then is required of the professional man? The law does not require perfection but does require a reasonable degree of skill and care, a standard which is dependent on the status and experience of the practitioner. The question the court has to answer is not whether another practitioner could have done better but whether a competent, conscientious practitioner of the same status and experience as the defendant could have achieved a better result.

Where then do the dangers lie? They lie in every doctor/patient contact and those working in casualty and orthopaedic departments are at particular risk.

At what stage of contact may they occur? No stage from history-taking to disposal is free from risk. Failure to identify is perhaps the first error which can be made "Hello Michael", said the registrar anaesthetist, and because his seven-year-old pre-medicated patient did not say his name was Timothy, he received the operation intended for Michael, much to the displeasure of his parents and to the resultant expense to the Medical Protection Society.

History-taking is a common starting point in actions in negligence. Its importance has been stressed by generations of clinical teachers and ignored by generations of students. The history is always important but especially so in departments such as casualty, where a patient is liable to be seen by a second, third and even a fourth doctor on subsequent attendances. If the condition is not improving and the recorded history is less than complete, it is not enough simply to re-examine; one should go back to the beginning and take the history afresh.

To turn to diagnosis, it is not of course necessarily negligent to fail to make the correct diagnosis but when faced with such an allegation it is necessary to be able to show that an adequate examination was in fact carried out. Further, the court will expect the doctor, when in doubt, to take a second opinon rather than take a risk — it is after all the patient and not the doctor who takes the risk.

When we come to treatment, the dangers are legion. Incorrect dosage, failure to check ampoules, failure to enquire about sensitivities, retained swabs and drains, tight plasters and injections damaging the radial or sciatic nerve are a few of the more common hazards.

Communications — the worst ink is better than the best memory. When a dispute arises the patient will remember his visit to the doctor or hospital whereas the doctor's memory will inevitably be blurred; unless then, the notes show what the true position was, the patient's story is likely to be believed. Notes therefore should help the doctor but they will not if they tend to suggest that he may have been irritated or flippant in his approach. G.O.K. (God only knows) is not a diagnosis which suggests a careful, methodical

examination and such expressions as "Dazed and grazed" or "Bruised and boozed" which one meets from time to time are unhelpful, to say the least. The casualty officer who omits to give the patient a letter to take to his general practitioner does so at his peril. There is a world of difference between saying "Everything is all right. You can go" and "Everything seems to be all right but take this letter to your doctor tomorrow and let him know how you are feeling".

So much for the dangers — do they exist in Malta and if so, what of the remedies? Malta has undoubtedly been fortunate in this respect in the past but I, for one, cannot see how, with the influx of new residents this comparative immunity can possibly continue. I understand that many members of the legal profession in Malta have, for similar reasons, recently thought it wise to seek professional risks insurance.

For a doctor — and dentist — the answer is membership of a protection society. Such membership ensures not only unlimited indemnity against claims arising from the practice of the member's profession but also sympathetic and practical advice on medico-legal and ethical problems from a professional secretariat and legal representation before courts and enquiries.

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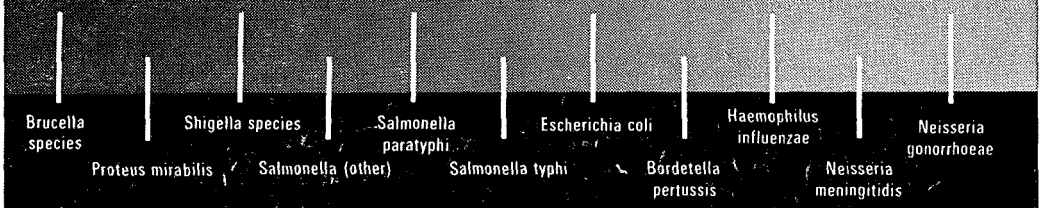

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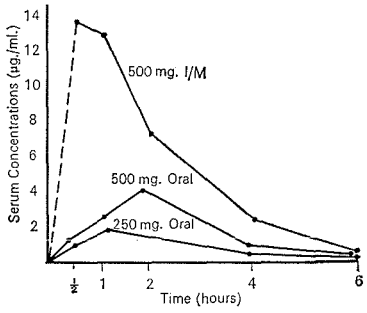

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NOTES ON THE HISTORY OF CAESAREAN SECTION

BY
ROBERT FARRUGIA RANDON

As far back as mythological times one can find references to this operation. In the writings of the Egyptians, the Romans (among them Pliny), and the Greeks, it is never mentioned as being performed on the living mother.

As regards the Greeks, the birth of Aesculpius might well have been the first Caesarian Section ever performed. According to legend Caronis, Aesculpius's mother, had betrayed her husband Apollo, who avenged himself by burning her on the funeral pyre, after taking the premature infant from her uterus. Other authorities assert that Aesculpius was born before his mother died of puerperal sepsis, and thus he could not have been possibly born by Caesarean Section, as the Greeks performed this operation only on dead mothers to save the baby for the state.

Regarding the Roman era, it must be noted that it is untrue that Caesar was delivered by Caesarean Section, and therefore the name of this operation did not stem out of this event. The word probably is derived from the "Lex Caesarea", promulgated in Caesar's time, ordering this operation to be performed on dead and dying mothers to save the child for the State.

In the writing of the ancient Hebrews one finds the first record of a Caesarean Section. In the **Talmud** one finds references to babies being delivered through the flanks of dead mothers. Maimonides also, commenting on the **Nidda** is quoted as saying that a woman who cannot deliver vaginally should have the baby delivered abdominally.

According to many authorities the most authentic account of the operation was made only in 1588 by Gaspar Bauhin, who gave an account of an operation performed by Jacob Nufer, a swine sprayer, at Sigerhausen, Switzerland. It is stated that Nufer opened the abdomen and uterus of his primagravid wife while she was still alive. This operation was performed in 1500 A.D. and only recorded 88 years later. Several stonecutters and 13 midwives were in attendance, but none could help her. Nufer seeing that no one could do anything for his wife, went over to the civil authorities and asked permission, which he obtained, to perform a Caesrean Section. He invited all the midwives to see the operation but only two remained as assistants. Nufer extracted the baby from the abdomen through a neat incision which was sutured and healed well. The baby (who later lived for 77 years) and mother were feeling well within a few days of the operation. Mrs. Nufer later gave birth to twins and four other single births.

In 1540 the first Caesarean Section to be done in Italy on a live mother was recorded by Marcellus Donatus. Operator on this occasion was Christopher Bain. While the mother survived the operation, the baby was born dead. Nine years after this operation, Scipione Mercurio and Dirlewang did much to popularise it in their respective homelands. As regards the French it was Rousset who in 1581 advocated Caesarean Section on living women for the first time in France. Rousset, however, never performed it himself, nor saw it done. Rousset was harshly contested by Pare' who justly remarked against the high mortality rate of the operation.

In the U.S.A. the first Caesarean Section was performed in 1827. John L. Richmond of Newton, Ohio, operated by candle light on a negro woman, using a pocket knife as the operating instrument, and the kitchen table as an operation table. The patient recovered uneventfully within 24 hours. In England the first Caesarean Section on a live woman was done in 1739 by midwife Mary Dunally on Alice O'Neal. It was 149 years after this date that Murdoch Cameron did the first successful Caesarean Section in Scotland.

On our island the first live baby delivered by Caesarean Section performed on a live mother was done on the 28th May 1891 by the then Professor of Obstetrics and Gynaecology, G.B. Schembri. In his memoirs of the operation Profs. Schembri gives an account of the case. The patient, Girolama B. from Naxxar, was a dwarfish primagravida of 35 years. The date of her last menstrual period was on the 25th August 1890. Profs. Schembri having been called on consultation by the patient's doctor, Dr Zammit, early in the morning of the 28th May, examined the patient thoroughly. This is an account of his findings.

".....ventre voluminoso estendendosi in alto fino al processo ensiforme, e pendente in basso fino alle coscie; mizione difficile, pero normali i costituenti dell'urina; oedema alle gambe per ostacolato circolo entro il bacino, polso rapido, sostenuto, tibie arcuate all'infuori (manifestazione rachitica) bacino ristretto; la coniugata di pollici $2\frac{1}{4}$, osteo uterino completamente dilatato; membrana a budello; la presentazione dell bambino era la prima posizione sinistra del vertice OISA, riposante sullo stretto superiore; movimenti attivi del feto distinti come pure i battiti del cuore foetale, specialmente al quadrante inferiore sinistro".

Profs. Schembri ordered the transfer of

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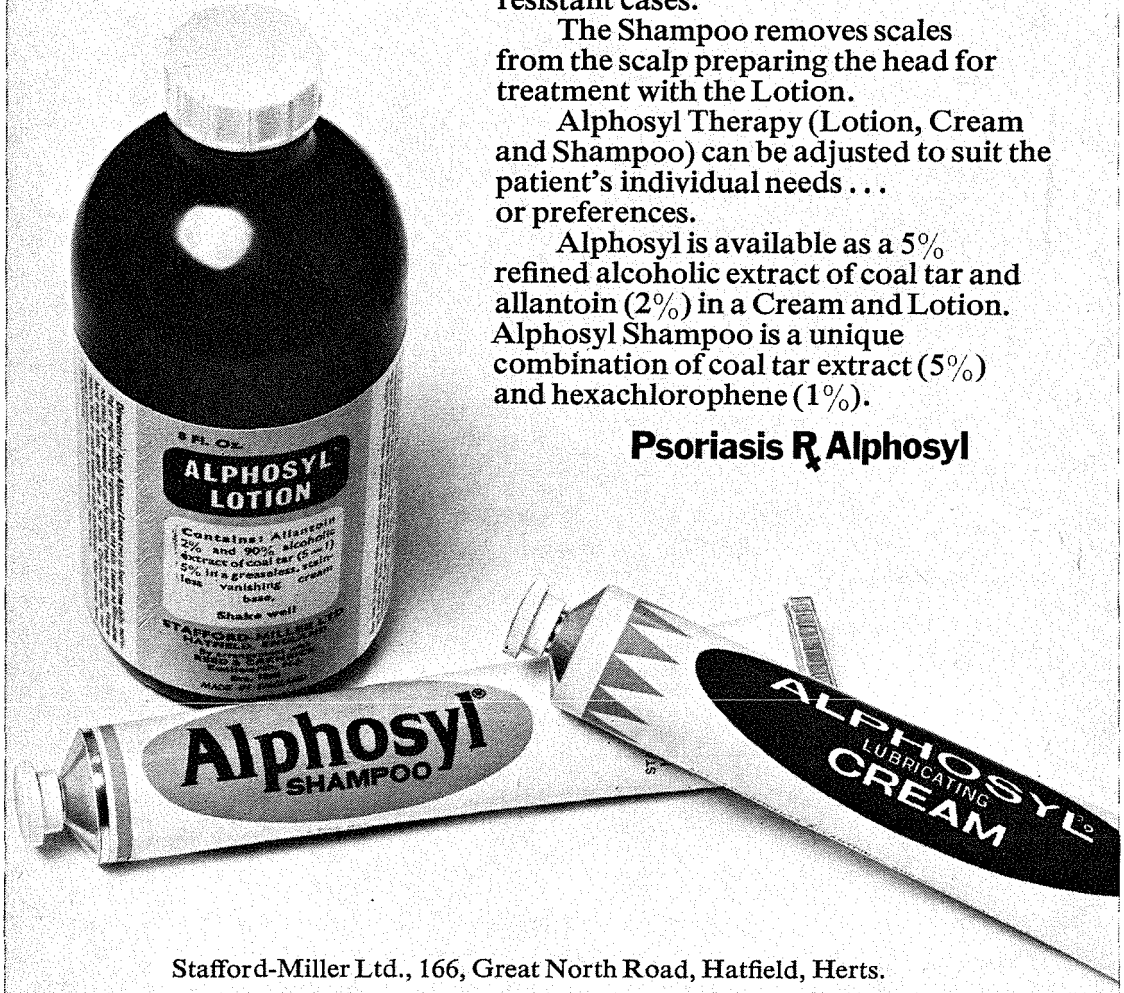

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the patient to the Central hospital and at 8 p.m. having consulted Drs. Bonnici, Manchè and Tabone, decided in favour of a Caesarean Section. From now on I shall leave it to Profs. Schembri to give us an account of how the operation was performed.

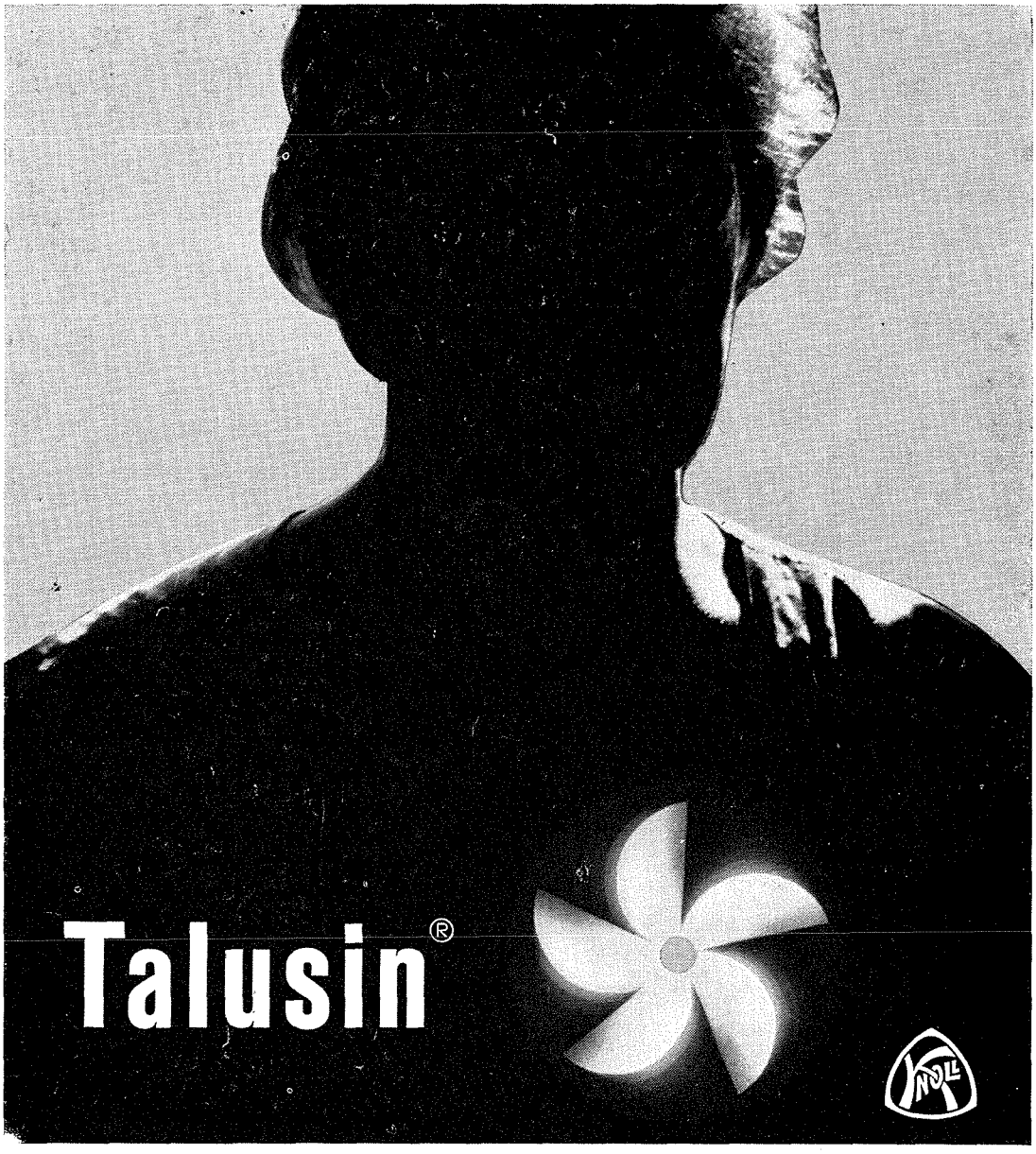
"Il dott. Cassar l'annestizzò,..... feci il primo taglio lungo la linea alba e attraverso tutta la spessezza di circa due pollici da pube verso l'ombellico e costeggiando questo a sinistra arrivai a circa due pollici disopra alla cicatrice ombellicale, questa incisione di circa 8 pollici metteva a nudo il peritoneo. Non vi furono rotture di vasi, verso il centro del sacco peritonale feci una bottoniera e completai il taglio del sacco in alto e in basso col tagliente guidato su di una sonda; l'utero comparve di una tinta rosso bruna, molto attorcigliato sull'asse, talmente che le appendici sinistre uterine comparirono al di sotto del labbro sinistro della incisione e messolo in sito e dal Profs. Bonnici mantenuti i bordi della incisione contro l'utero si oviava cosi all fuoruscita delle intestine e alla introduzione di corpi eterogenei nel cavo addominale; procedetti allora alla sezione strato per strato delle pareti dell'utero lungo la sua linea mediana per l'estenzione di circa 6 pollici evitando il fondo e la porzione sopravaginale del collo. A mezza via di questo taglio si costitui una bottoniera attraverso le quali passai la sondra scanellata prima in basso e poi in alto e sulla stessa completai il taglio ponendo allo scoperto il bambino che era ravvolto nel suo sacco e nella posizione diagnosticata, squarciai il sacco ed estrassi per la spalla destra una bambina che era semi-asfittica del peso di 8 libbre e che il dott. Vella fece riavere. ... Suture — sei punti di sutura interrotta di seta sulla parte profonda della incisione uterina e altre quattro superficiali e frapposti. L'utero si sentiva contrarre nel praticare queste suture. Lavato il cavo addominale si rimise l'utero in sito e si passo a nove suture di seta addominali interrotte e profonde e cinque superficiali interposte."

The patient recovered well except that for a short time she ran temperature of 103°F., but this was down to normal by the 6th day. On the 8th day the sutures were cut off and after 4 weeks the patient was sent back home.

Even as far back as 1802 CSs were done on the island but only on dead women. Up to the first half of the 19th century Caesarean Section mortality was very high and this explains why it was not frequently attempted at this time. This is in contradistinction to the state of affairs in the second half of the same century. The factors that brought about the decrease in the mortality were diverse:— Anaesthesia was introduced in obstetrics by Simpson in 1847. The problem of infection was tackled on a scientific basis. Obstetricians began to regard Caesarean Section not merely as a last resort before pronouncing the death sentence. Indications of the operation became progressivly understood more fully. Techniques were improved.

The extraperitoneal approach was first practised by Von Ritgen in October 1st 1821 on a 37 year old lady, Joan Peter who had suffered for some months from Osteomalacia. However the patient died 3 days postoperatively from haemorrhage. Further reference to such an approach is also found in a letter dated September 28th, 1824 and sent by W.E. Horner to W.D. Dewees; where the former writes about lateral extraperitoneal approach suggested to him by Dr. Physick. T. Gaillard Thomas in 1870 performed unknowingly the operation as Dr. Physick had suggested but never performed on a patient who had died from eclampsia. Further success with this technique was recorded by Skene in 1876, Frank and Sellheim, and Latzko in 1908. Latzko performed his operation on April 26th of 1908 on a primagravida with severe disproportion and in this operation he, for the first time in history, displaced the bladder and peritoneum laterally without separating them as was suggested before by Physick. Cervical hysterectomy was another form of Caesarean Section suggested and performed in the 2nd half of the 19th Century. This was first performed by R. Storer and reported by G.H. Bixby. Both mother and child died postoperatively. Porro met with better luck when on May 21st 1876 he performed in 26 minutes the operation on a 25 year old rachitic, dwarfish, primagravida, Julia Cavallini by name. Both mother and child survived the operation which from then took the name of the distinguished Pavia surgeon. This operation slumped down the mortality rate by full 20%. It was in 1882 that Adolph Kehrer and Sanger developed a new technique to close uterine incisions by sutures, first attempted and given up soon after by Lebas in 1769. Kehrer made his incision low down on the uterus and transversly while Langer made it vertically. Fundal incisions were also suggested by Fritch (1797) and A.P. Muller (1898) but with little success. The lower segment operation was later perfected by Frank (1906) who by his technique rendered the chances of wound infection minimal.

The mortality rate which in the beginning of the 19th Century had been of 50% was cut down to 5% by the end of that century. This percentage fell even more and more in the 1st half of the 20th century as anaesthesia, techniques, the fight against infection etc. became more and more perfected.



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A HYDATIFORM MOLE?

By

PAUL CHETCUTI

A.B., a 19-year old prima gravida, married in January 1967, and first missed her period in the 3rd of March of the following year. There was no previous history of abortion, and nothing peculiar in her family history apart from her mother having had twins. She experienced vomiting in the first trimester, and no toxaemia (which rarely occurs before the end of the 20th week, is frequently symptom-free, and often undiagnosed unless the patient attends ante-natal care).

She felt foetal movements at the 18th week — which is remarkable but can be explained by the sensation felt when the "mole" begins to detach itself from the uterine wall, also evidenced by irregular spot-like bleeding at this stage. (In point of fact a local obstetrician had a patient feeling foetal movements and having such bleeding but later discovered a submucous fibroma which was expelled as in a normal delivery).

She first attended St. Luke's ante-natal clinic on the 19th December 1968, and a pseudocyesis was then diagnosed.

An X-ray of the 28th December 1968 revealed no foetal parts except for a mass in the abdomen. The Haemoglobin level then stood at 14g./100ml (95%), but fell to 12.5g./100ml (84%) two months later.

The pregnancy test was positive at all times. On the 30th January 1969 a quantitative pregnancy test at a dilution of $\frac{1}{2}$ equivalent to more than 2,000 units of H.C.G. (Chorionic Gonadotrophin) per litre was recorded. On the 19th of February of the same year she had slight vaginal bleeding which was painless. Two days later there was a similar episode with enough blood lost to soak a "pad". A doctor on examining her elicited a head presentation and even pronounced it to be engaged. The patient however confided that she no longer felt the foetus move, until two days later when after being admitted to the casualty department a "tentative" diagnosis of placenta praevia was appropriately ascribed since the patient now revealed she had spot-like vaginal bleeding four months after her L.M.P.

On the 21st February of 1969 the patient was already two months overdue by dates but her fundal height was at 7 months. Her blood pressure was 130/85, which is slightly high for the average Maltese pregnant woman in whom it normally is 95/60. On the other hand, judging from the size of the uterus at this stage, any signs of pre-eclamptic toxaemia would not have been overt in this case. A Hydatiform Mole usually has a characteristic doughy feel and there may also be a uterine "souffle". The abdomen was distended mostly at the centre. It felt cystic and a hard mass was felt in the right lower quadrant of a somewhat rounded contour. Percussion of this area was dull, the rest of the abdomen being tympanitic. The foetal heart was never heard at any time.

The onset of labour was spontaneous at 4 p.m. on the 22nd of February 1969, and at 11.15 p.m. the "mole" was expelled in one piece — an amazingly perfect cast of the uterus and cervix, with some grape-like clusters so that the "mole" was in fact not a mole but a "long retained product of gestation with some hydropic change" — a description which I owe to a senior pathologist. This was the product of 11 months 8 days gestation.

It had a perfect consistency, was well encapsulated, covered with much fibrin, and definitely not malignant. Inside it may be the charred remains of an embryo or foetus — if there existed any in the first place.

Letters to the Editor

The aim of this column is to provide an influential medium through which medical students may air their frank opinions to safeguard their interests. Opinions expressed in the letters reproduced below are not necessarily those of the editor, or of other members of the editorial board.

Mr Editor Sir,

For the past two years I have been itching to put pen to paper on a few of the students' oddities. Although "Class '69", in your last issue, failed dismally, it did serve the purpose of stimulating a bit of introspection. First let us take a look at "him" in the examination room. This I would like to label the period of:

BOWEL — CONSCIENCE

Never before have I ever been made so aware of the facilities of the nearby lavatory. For the first few minutes of the start of the examination, all is quiet as he peers dumbfoundedly at the question paper, then suddenly as if by the beckoning of the "Goddess Inspiration", the pilgrimage begins in a certain sector of the exam room. One by one they rise from their stools and direct their footsteps towards that nearby place of relief and comfort.

To those of us with greater tendencies to constipation or anuria, the disturbance from the pilgrims would have been acceptable had they restricted their journey to complete evacuations..... taking along their stools as well. But when outstanding pilgrims begin to make repeated journeys, one not only questions **the nature of their pilgrimage,** but is bemused by the alacrity with which they execute their sober mission.

Indeed, prizes were awarded to a pilgrim for his outstanding achievement of:

(1) Ten visits within one and a half hours

(2) Taking ten minutes to complete one of his missions.

Last summer a **Congress on Bowelology** was convened to discuss the students' hyper-irritable colon.

Proceedings were summed up as follows:

Chairman: "Thus we have concluded that the aetiology of this HYPERIRRITABLE COLON SYNDROME is largely due to (a) lack of homework (b) availability of informative leaflets."

"As I have pointed out, my research at the School has shown that such students require a total dose of chemopodium — this is four times the effective hog dose. and must be administered three days before examination. In addition would suggest:

1. Animal-fat free diet
2. Adequate supply of text books
3. Confinement to studyroom
4. Restriction of fluids."

To turn to yet another feature of student activity, permit me to introduce the **CAMERA-STUDENTS:**

This is a recent activity which has assumed epidemic proportions. Tall students, short students, cringy students, queer students..... all with cameras in handsome leather cases slung from their shoulders. As a consequence there is no more any privacy at the Medical school. One can hardly take a good bite into a sandwich before one of these camera-pests starts clicking. Nor can our more amorous couples engage in a quick kiss during the intervals.

Indeed, not only have these fastidious fellows been seen to take their carcinogenic machines into the operating theatre, but reports have it that one chap was seen to take it into that place of confinement..... the lavatory..... and one asks..... is this EXTREMISM or EGOTISM?

Mr Editor, I must say a big thanks for allowing me to deflate in these few lines, but I must warn you that as a result of my last poem "Class '69", two fellows having been riled at the light in which they were put are threatening..... quote "To chisel down the Chestpiece to a mere Breast Piece..... and one without a nipple at that!!" The latter was acclaimed as excellent, but when the congratulators became the subject of my attack..... they said "How disgusting!" But conforming with typical human reaction, those complimented were quite amused..... which was the sole intention of these two works.

In closing, let me leave you with a good old Jamaican saying: "Jack Mandora..... me no chose NONE" (Folklore, Patios)

Yours truthy,
I.C. POPEYE
alias SAD SACK
alias ERROL MORRISON

Sir,

SEX AND THE MEDICAL STUDENT are two phenomena which are poorly understood locally, and which, it seems, have a number of things in common. Consider:

a. The University politely ignores them both as a topic of discussion.

b. Jaquil, the University's conscience, never dares mention them in his unforgiveable newsletter — for fear of raising awkward questions.

c. Both are powerful forces which unconsciously play a dominant role in society. Paradoxically few are aware of the possible effects of their mismanagement.

d. They both need to be understood (and practised) for the well being of society.

The comparision stops short here, however. A local Kinsey report is still less than remote, though desireable, possibility, whilst the medical students have taken the initiative by conducting a survey of their own role in education and society. Please allow me to interpret some of the findings as published in the April issue of the Chest-piece.

THE STUDY

All medical students were given a questionnaire — 82% returned them, and these were analysed by computer. In this study 1st year stands for the first preclinical year, and Vth year represents the final year.

Regretting having studied Medicine

1st year	3.2%
III year	10.3%
Vth year	27.6%

Comment: It's a hard life!

Reasons for studying Medicine

Inclined towards Natural Sciences	25%
Altruistic	23%
To exercise one's abilities	21%
Financial/Prestige	14%
The rest varied	

Comment: This in my opinion has been misinterpreted by the students conducting the assessment, who conclude that financial reasons and prestige have only a secondary position. In reality are not Zoology and Botany also Natural Sciences, even more so than medicine? Then why should the main reason to study medicine be inclination towards Natural Sciences? I interpret this as the inability of the badly off student to admit, even to himself, that finance and prestige have been a major factor in his decision. Therefore the 14% and 25% are not statistically significant

Does attending lectures affect the lecturer's opinion of the student?

	YES	
1st year	29.6%	. . The young are innocent;
III year	26.7%	. . they lapse into a sense of false security...
Vth year	42.9%	. . To be rudely awakened by fact

Assessment of the value of lectures

	Little/No Value
Bacteriology	65.6%
Medicine	48.3%
Surgery	33.3%
Anatomy	26 %
Physiology	22.4%
Pathology	15 %
Obstetrics	15 %

Assessment of the value of Practicals/Ward Sessions

	Of great Value
Medicine	98.3%
Surgery	93.1%
Obstetrics	90 %

Comment: Yet the University persists in maintaining a high number of lectures (unpopular and unattended) against an approximately equal number of practicals which seem to be by far the most popular and effective methods of teaching.

78% want lectures to last less than one hour. 73% work 15-24 hrs per week in the wards. 100% want to increase this period — though of course at present handicapped by 15 long, dreary lectures per week. The cause of peptic ulcers *is* too many lecturers — "Primum non nocere magister".

The full report can be readily seen and less easily studied in the M.M.S.A.'s journal. The relevant people would do well to study and act. The clinical assessment has been done — the diagnosis can be made *and treatment begun.* UBI PUS UBI EVACUA.

Yours Truly,
F.P.

Book Reviews

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Published by Blackwell Scientific Publications.

Price 25/-

When asked to review this book, somehow I did not expect 270 pages of detailed histology together with a chapter on "Techniques of experimental Morphology", and another chapter on "History of the study of Bone Growth". However one soon gets in step with the author, who is forever attempting to explain the structure in terms of function.

The physiological and biochemical implications of the histological makeup of the human body are the backbone of this book — few would deny that this is a hitherto unstressed aspect of histology.

The only shortcoming I could find in this book was the lack of diagrams — but this can be easily overcome if the book is used as a companion in the histology laboratory.

F. PORTELLI

LECTURE NOTES ON DERMATOLOGY

B. Solomons.

Published by Blackwell Scientific Publications

Price 25/-

There are few books on Dermatology that can be recommended to the medical student — who of necessity has only limited time and energy to dedicate to this specialised branch of medicine. *Lecture notes on Dermatology* is a welcome exception.

This book is concise — yet no subject of import has been left out, and it is well illustrated with 36 photographs in colour, and 70 in black and white.

I found the chapters on psoriasis, leprosy, and fungal infections to be most interesting.

This is one of the few books that can genuinely claim to awaken the student's interest in the subject. I do not hesitate to recommend it.

F. PORTELLI

COMMON SYMPTOMS OF DISEASES IN CHILDREN

R.S. Illingworth

Published by Blackwell Scientific Publications.

Pediatric books are notoriously deficient in the clinical aspect of diseases of children. I was happily surprised to see that the first chapter in this second edition of Illingworth's book was titled "Failure to thrive". This is followed by a discussion on "Loss of weight", "Unexplained fever", and a chapter on "Vomiting". These are perhaps the best topics dealt with. Two other topics amply dealt with are "Dyspnoea in the newborn" and "Jaundice".

The book will appeal to the medical student and housedoctor, who require a discussion of common diseases of children in a readily accessible and easily assimilated form.

F. PORTELLI

TEXTBOOK OF MEDICAL VIROLOGY

A. Cohen.

Published by Blackwell Scientific, Publications

Price 60/- Net

This recently published book (1969) may, on first encounter, prove too much of a formidable sight to the student, knowing but too well, from dire personal experience, that the detailed study of the properties of micro-organisms, particularly, fails to be at all challenging to medical students. Dr A. Cohen in this work based on his lectures in virology to the students of the Medical School at University College Hospital, has managed to bring together elegantly a comprehensive, concise, very modern and readable account of the various groups of viruses and Rickettsiae, presented in fast-flowing style.

He introduces the reader to the subject with an essay on the various 'in vivo' and 'in vitro' techniques of culture of viruses, and on the serological methods made use of by the clinical pathologist in the help he proffers to the physicians and surgeons at the bed-side. The various classes of viruses are then singly reviewed. Brief mention of their physical and chemical properties, their pathogenicity, and of the preventive and curative aspect of the treatment of the diseases caused by them is then given. I was particularly favourably impressed by the few well-chosen photographs and line-drawings included with the text; in my opinion, these are rarely chosen in such a way

as to eloquently clarify and supplement the text, but often their presence distracts rather than qualifies.

An entire chapter is devoted to the encogenic group of viruses (tumour-producing viruses) which to-day are so very much in the limelight of medical and popular news alike. A survey of the Rickettsiae and of the diseases that originate from them is also included in this monograph. Though fearing to become involved in the still-raging struggle between virologists and bacteriologists for the protection of this phylum of micro-organisms, I think that these last few chapters have gone into the wrong drawer.

An excellent though short bibliography is also included at the end of the book for those sufficiently stimulated. References are however intentionally entirely omitted from the text camouflaging the book as very unprofessional.

The book manages to outline solidly the fringes of the realm of virology, and I seriously recommend it. Newly qualified doctors who intend to take up post-graduate training in whatever branch, and final year medical students will find that an intelligent, quiet reading of the book supplements a very important gap in their knowledge of medicine. Medical practitioners would also greatly benefit from the book; very often, unfortunately, their state of medical knowledge fails to allow them to comprehend the language talked by their colleagues in the laboratories.

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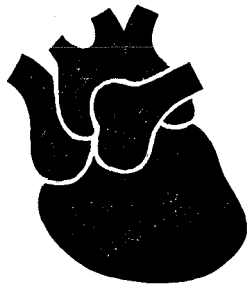

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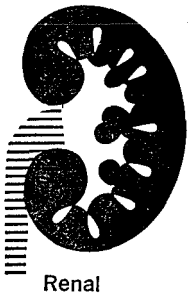

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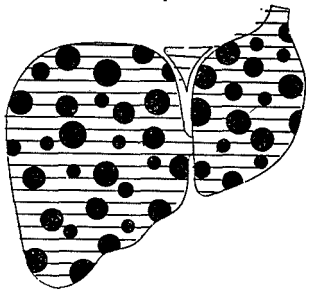

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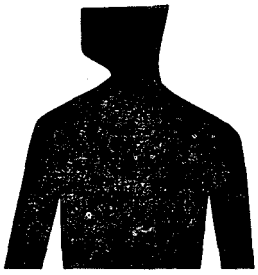

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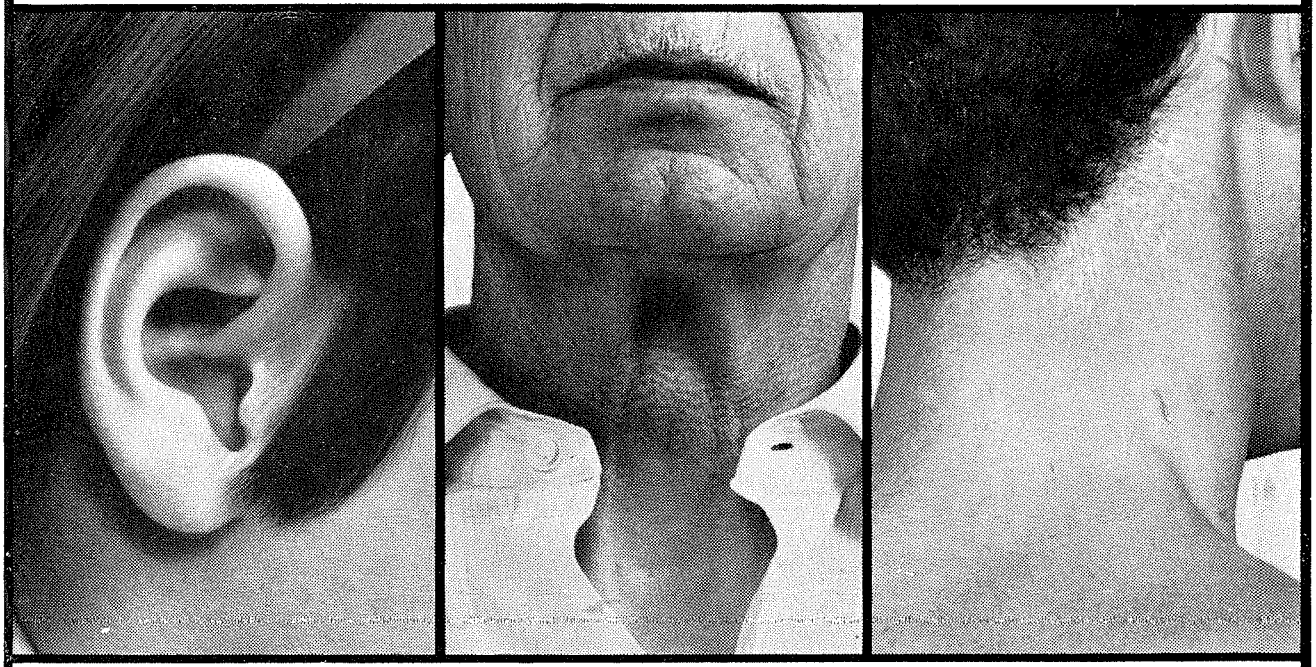

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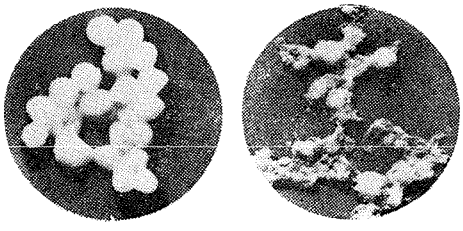

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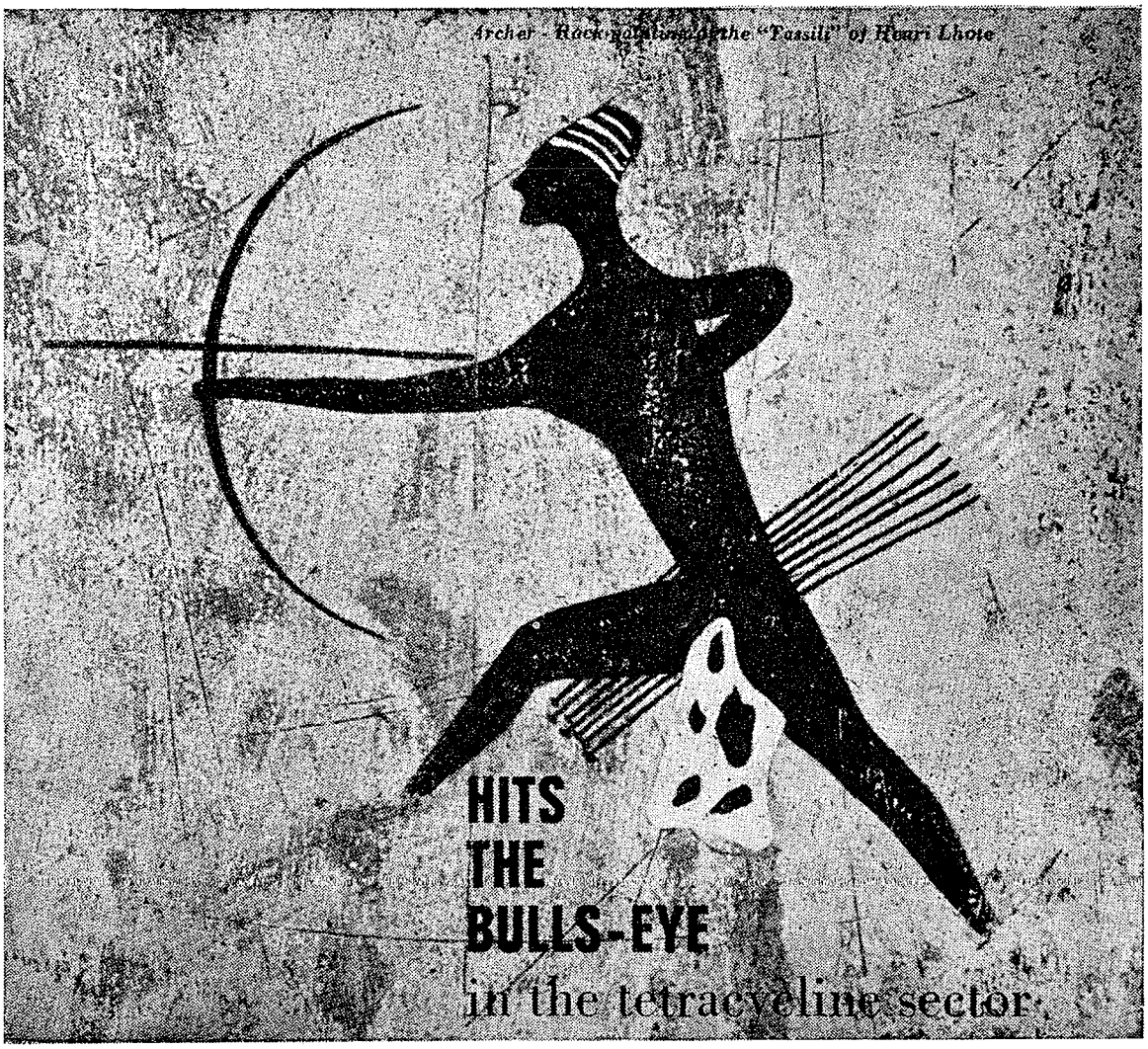

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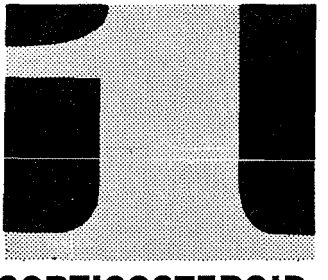

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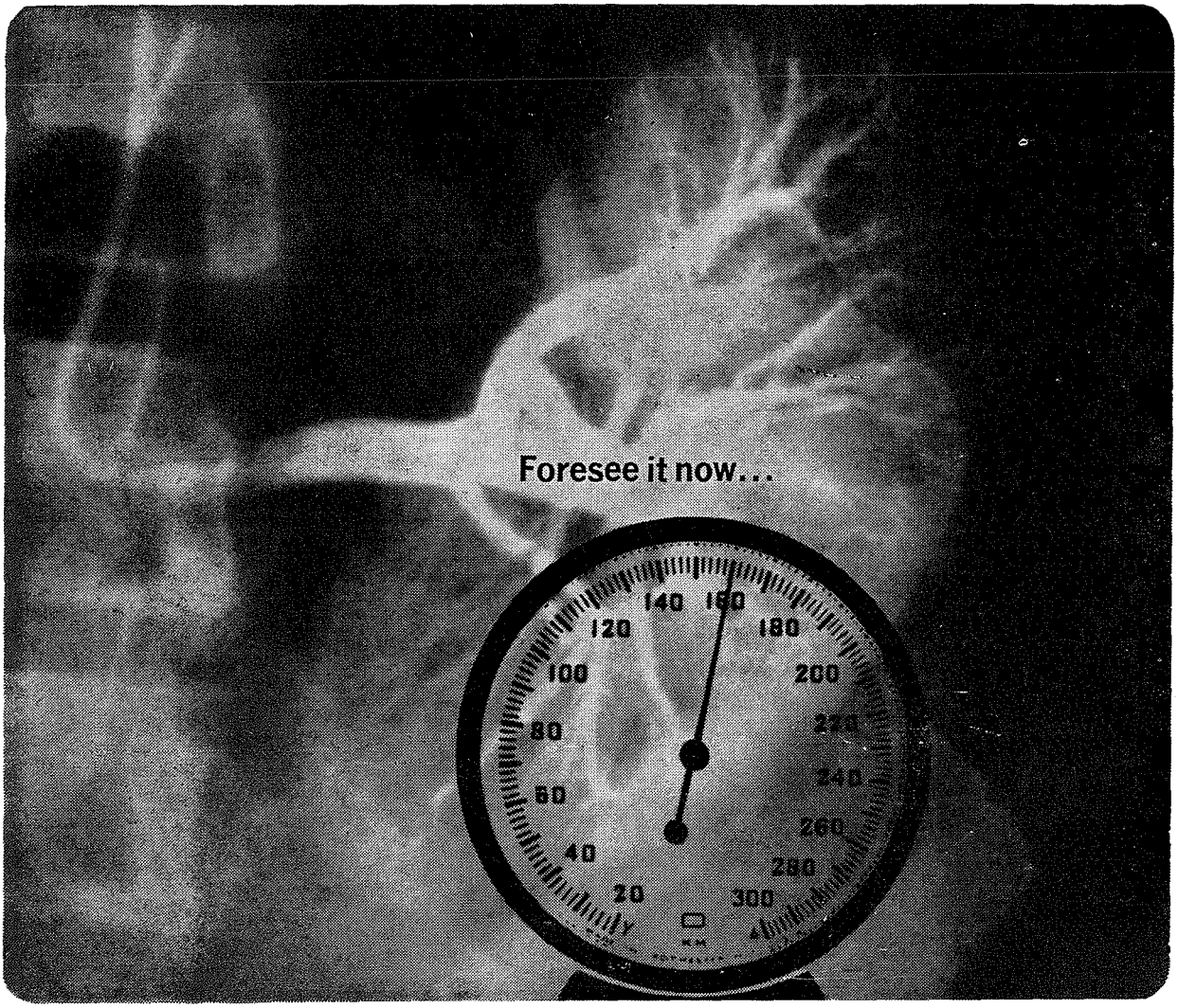

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1. Brest, A. N.: Hemodynamic response to antihypertensive drug therapy, **J.A.M.A.: 192**: 127-130, April 15, 1965. (U.S.A.) 2. Onesti, G. et al.: **Comparative hemodynamic effects of antihypertensive agents: alpha-methyldopa, pargyline and isocaramidine. Abstracts of the 37th Scientific Session and 18th Annual Meeting, Council on Arteriosclerosis,** American Heart Association, October **33**:III-135, 1964. (U.S.A.) **Note: Detailed information is** available to physicians on request.

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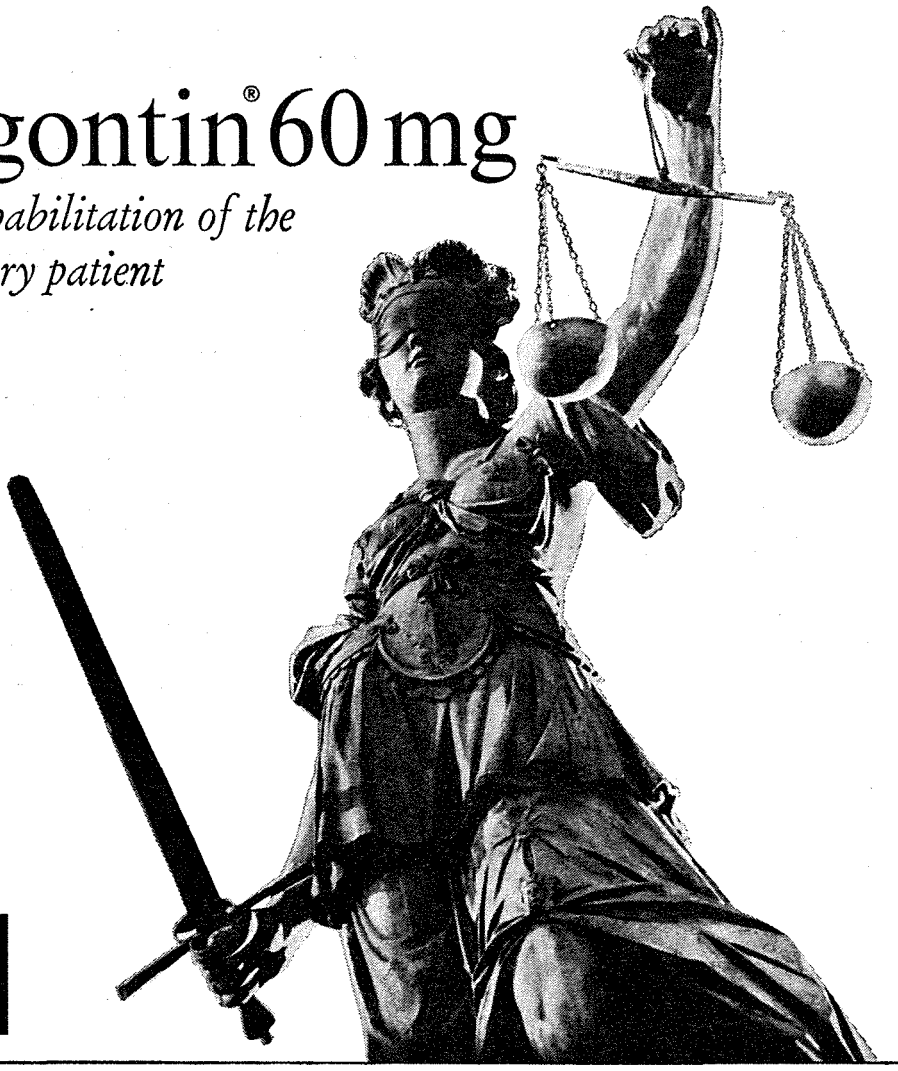

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