

TEACHING OF MIDWIFERY IN MALTA AT THE BEGINNING OF THE NINETEENTH CENTURY

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Some years ago I stated that a Chair of Midwifery was set up in our University in 1833 but that the subject was already being taught since 1802 by the Lecturer in Obstetrics at the Women's Hospital in Calletta (Cassar, 1965a).

The document

I have now come across a document which not only confirms that midwifery was being taught to medical students in the very early years of the 19th century but which also gives us a picture of the state of midwifery at that period. The discovery of this document is worth recording as it furnishes us with the earliest "textbook" of midwifery known to have been used in our medical school.

It consists of a manuscript volume containing the series of lectures delivered in Italian by the teacher of obstetrics at the Civil Hospital of Valletta, of which the Women's Hospital formed part. This

manuscript belonged to the medical student (later Doctor) Salvatore Bardon who qualified M.D. in Malta in 1818. It bears the title:— *Trattato dell'arte ostetrica dettato e spiegato dal Perille Signor Dr. Francesco Butigiec (sic) nello Studio Pubblico del Grand'Ospedale Nazionale de' Maltesi. Principiato li 18 ottobre 1804.* (Treatise on the Art of Obstetrics dictated and explained by the Most Illustrious Dr. Francesco Butigiec in the Public Study of the National Grand Hospital of the Maltese. Commenced on the 18th October 1804). (Fig. 1). It comprises sixty-five *Titoli* or chapters totalling 247 folios (31 cm. x 21 cm.) with another three folios listing the contents or titles of each chapter.

The subject matter covers the different aspects of obstetrics very comprehensively and ranges from the detailed anatomy of the pelvis with its various organs and of the gravid uterus; the clinical signs of pregnancy; abortion; normal and abnormal labour; management of the puerperium; twins and superfoetation; manual correction of the various malpositions; the use of instruments and the performance of Caesarean section in the

Trattato
 Dell'Arte Ostetrica
 Dattato, e Smiegato dal
 Penite: Sig.^{ro} D. Francesco
 Butigier, nello Studio
 Pubblico del grand' Ospedale
 Nazionale de' Malteri
 Principiato li 18. Ottobre 1804.

Salvadore Bardon

living and the dead mother; the care and feeding of the new-born (Fig. 2).

It is intended, in this paper, to present a general idea of the basic teaching of Dr. F. Butigieg and to consider in detail some of the more salient points dealt with by him.

The course of lectures was spread over a period of almost one year and eight months commencing on the 18th October 1804 and ending on the 11th June 1806.

Midwives and obstetricians

In his introductory lecture he deplores the fact that the "science of obstetrics which, in truth, is the most useful and necessary part of surgical-medicine" had been left in the hands of "inexperienced women or ignorant men not only in the past but also in our, so-called, enlightened times". In most instances, continues the lecturer, the process of birth is a "function of nature and is effected in accordance with its laws" and all the midwife needs to do is to wait until the baby slips safely from the maternal passages into her hands and to tie the umbilical cord; however, it is important that there should be "wise, honest, and well-trained midwives of good morals who would be capable of dealing efficiently with cases of difficult labour and abnormal presentations of the foetus especially when the modesty of the pregnant woman does not allow her to be assisted by the male sex". For "how many unhappy mothers have had to suffer irreparable damage for their whole life because of the inexperience of midwives? How many deliveries that should end happily are rendered difficult?" Dr. Butigieg, however, felt optimistic for the future and envisaged that the situation would change for the better for "now thanks to the paternal solicitude of this happy and ever praiseworthy government, this school has been established to further the study of obstetrics and to enable midwives to become capable of dealing effectively with the dangerous circumstances in which pregnant women sometimes find themselves especially during labour. Thanks to the knowledge thus acquired

the darkness that in the past had enveloped obstetrics in profound negligence will be dispersed".

After tracing the rise in reputation and status of the obstetrician from Roman times to the dawn of the 19th century, the lecturer delineates the physical and psychological characteristics that the obstetrician should possess. This practitioner must be "intelligent, self-controlled, calm, modest, prudent, and gentle; without any physical defect in his appearance; very considerate with his patients especially during operations; charitable towards the poor who need his help; neither very young nor very old; possessing a small hand to facilitate its introduction inside the uterus when he has to change foetal mal-presentations and to detach the placenta adherent to the fundus of the uterus".

The religious factor

The pangs of childbirth are accepted as an inevitable accompaniment of labour on religious grounds. "Owing to the sin of our first parents," comments the lecturer, "God condemned woman to bring forth her children in pain; and the art (of obstetrics) does not have sufficient means to prevent it"; but "while God has ordained that woman should face the dangers of pregnancy and labour... as a punishment for having eaten the forbidden apple, He has, through the study of the anatomical structure and physiological mechanisms involved in child-bearing, provided us with the means of assisting her in her trying situation".

Dr. Butigieg did not question the authoritatively established creed of his time; but his religious orthodoxy did not preclude him from initiating his students into the physiology and psychology of the act of coitus. In fact the frankness of the following descriptive passage is equalled only by the sensitiveness of feeling that permeates the whole paragraph. "Pregnancy does not occur," he says, "unless it is preceded by the copulation of the two sexes and unless both partners take an active part. When this happens, it is a good omen for the occurrence of

Tavola
Dei Trattati, dei Titoli, e delle
Materie contenute nei
Quaderni dell'Arte
Obstetrica.

<u>Titolo</u>	Quaderno I.	<u>Pagina</u>
Della Pechi.	}	9.
Dell' Ovo Sacro.	}	13.
Dell' Ovo Coriceo.	}	14.
Dell' Ovo Aleo.	}	16.
Dell' Ovo Rubro.	}	17.
Dell' Ispazione della Ova della Pechi.	}	19.
Delle parti contenute dentro la Pechi		
Della Donna. Quaderno II.	}	25.
Dell' Utero.	}	29.
Dei Legamenti larghi, e rotondi dell' Utero.	}	30.
Dell' Ovario.	}	32.
Della Tromba Falloppiana.	}	33.
Dei Vasi sanguigni delle descritte parti. Nelli:	}	35.
Della Vagina, e condotto dell' Utero.	}	38.
Dell' Utero Inguineo.	}	40.
Della Klacoma.	}	42.
Dei Vasi Ombelicali.	}	43.
Dell' Uraco.	}	44.
Del Cordone Ombelicale.	}	45.
Della Nutrizione, Circolazione, e Situazione	}	48.
Del feto nell' utero Materno.	}	53.
Dei Segni della Gravidenza, modo per	}	53.
Esplorarla. Quaderno III.	}	59.
Regolamento delle donne nel corso della	}	63.
loro gravidenza, non avendo molestata	}	65.
da alcun accidente considerabile.	}	67.
Delle Malattie delle donne in conseguenza	}	68.
del concepimento.	}	69.
Del Vomito sintomo ordinario nelle Gravid.	}	69.
Della febbre conseguenza di concepimento.	}	69.
Delle Epistomie.	}	69.
Delle Vertigini nelle Gravid.	}	69.
Dei Dolori delle Mammelle, Pubè, Inguina, e	}	69.
che attaccano le Gravid.	}	69.
	}	Dell' Edema.

conception if there is a desire for copulation on the part of the woman who thus experiences an extraordinary rapture during which she reaches orgasm simultaneously with her partner. Thus the ejaculate of the male is forcefully projected and avidly absorbed by the uterus. As fecundity occurs, this rapture is followed by a feeling of relaxation and lassitude of the body which quivers with a slight chilly feeling. The woman experiences a sensation of flooding, motion and swelling of the uterus, a slight colicky pain in the umbilical region and tightness and swelling of the abdomen. All this happens within a few moments".

Regimen during pregnancy

What regimen should a woman follow during pregnancy? She is not to take baths lest she provokes uterine bleedings and the premature expulsion of the foetus; neither wear very tight clothes nor ride in a caleche or engage in undue exertions such as moving and lifting heavy objects. On the other hand she is advised to avoid rough roads and walk only on smooth streets. She is to shun strong purgatives such as hellebore, scammony and colocynth as they may cause her to abort; constipation, however, is to be overcome by means of clysters. She is warned against the practice — then prevalent — of drawing blood in the seventh month. Gravid women were "so attached to this usage that they thought it impossible for them to lie in without resorting to such a measure".

A common notion was the belief that the unfulfilled wishes of pregnant women had a bad effect on the foetus or else resulted "in an alteration of (the mother's) imagination which affected the foetus in such a way as to produce a defective baby or a monstrosity". Dr. Buttigieg did not share this belief. However he held that the "irritability of the nervous system is communicated to the uterus producing convulsions in this organ and sometimes abortion".

Management of labour

When the time of delivery approaches, the midwife "must first of all prepare

the articles needed for the occasion; i.e. hot woollen clothes, used linen cloths, towels, silk threads to tie the umbilical cord and a razor for cutting it; receptacles with hot and cold water; cordials and broths to sustain the strength of the mother and the vigour of the foetus and thus ensure his quick exit from the uterus"; and finally the parturition chair.

As this item of obstetric furniture has been dealt with in a separate paper (Cassar, 1973), a few words about it will suffice. At the time of Dr. Buttigieg, parturient women were delivered in the sitting position. The chair provided for this purpose differed from an ordinary one in two ways:— (a) the seat had a horse-shoe aperture cut in it, and (b) an arm rest was fixed on each side of the seat so that the woman by holding on to each arm-rest during her pains was able to increase the force of the uterine contraction by bearing down.

When the pains became more frequent and delivery appeared imminent, the midwife girded her waist with a towel and seated herself in front of the patient.

After cutting her nails short and removing all rings from her fingers, "she smears the index and middle fingers with oil or butter and gently dilates the vagina". She is warned not to try to hasten delivery but to "have patience and wait for the effect of the pains". She may, however, facilitate the exit of the baby by "applying hot fomentations on the mother's abdomen, anointing the vagina with fresh butter or placing the woman over a receptacle containing hot water so that the vapour will soften and relax the passage".

Expulsion of placenta

The umbilical cord was not cut and tied immediately on the birth of the baby but after the expulsion of the placenta. When the placenta was late in descending from the uterus, a quite ingenious device was employed to hasten its detachment. The baby, still attached by the cord to the placenta, was placed on a pillow filled with feathers in such a way that the cord was stretched tight. The weight of the baby flattened the pillow and as the infant

slowly sank into the pillow it exerted a gentle traction on the cord and on the placenta pulling the latter slowly away from the uterine wall. Another way of achieving the same end was to lay the baby on a leather-bottle filled with water, the liquid being let out slowly through tiny holes in its sides thus ensuring its gradual emptying with drawing out of the placenta. It is of interest to note that a very similar method of extracting the placenta not referred to by Dr. Butigieg was described by Hippocrates (c. 460-380/370 B.C.) The infant was placed on two bladders filled with water. Each bladder was then punctured with a stylus to allow the water to flow out slowly thus pulling gently on the cord (Milne, 1970a).

Dr. Butigieg attached great importance to the proper manner of ligating the umbilical cord to prevent leakages of blood with consequent risk to the life of the infant. He comes down very hard on the midwives of his time who, after severing the cord, instead of tying it, were in the habit of burning the cut ends over the flame of a candle. He surmised that this "abuse" was either the vestige of an old "unreasonable" custom or else a means "for increasing the number of gifts which the midwives received on these occasions". Dr. Butigieg confesses that he could not trace the origin of this practice. It is to be remarked, however, that an almost identical method is referred to by Soranus of Ephesus (98-177 A.D.) in his treatise on obstetrics for midwives where he advises them to cauterize the umbilicus with a heated spatula after cutting off the umbilical cord (Milne, 1970b).

Care of the new-born

There was, in Dr. Butigieg's days, a strong prejudice against washing the baby immediately after birth because mothers "believed that bathing could be fatal for the baby although common sense supported by experience showed the contrary". One, however, was to do his utmost to overcome the resistance of Maltese mothers "who, influenced by inexperienced midwives (whom they trust

more than the doctor), fear that their newborn baby will succumb to various undreamt of illnesses if washed".

It is recommended that "one third of generous wine be added to two-thirds water" to facilitate the removal of the "mucosity" covering the baby's skin. A decoction of chamomile mixed with a small amount of Venetian soap may also be poured in the bath water. If the mother persists in her refusals to have the baby washed, one must at least try to convince her to allow the cleaning of the baby's body with a sponge soaked in a mixture of wine and tepid water "to promote and preserve transpiration" from his skin.

Dr. Butigieg was against the swaddling of the baby because it hampered the physiological functions and the growth of the body. No more clothes were to be worn than were justified by the temperature of the season. The arms and legs must remain free "to perform all the natural movements which strengthen the limbs and promote the free circulation of blood so necessary for their nutrition and development".

Breast feeding

He stresses the importance of breast feeding for "it must be confessed that the best food for the baby is the mother's milk... She, therefore, cannot be excused from the strict obligation of suckling her infant", except in cases of illness and when her milk is deficient. He ascribes the poor production of milk to the wearing of tight and unyielding corsets and explains it by the humoral pathology then in vogue, i.e. the corset by compressing the breasts, the lumbar region and the lower abdomen, "squashes and obliterates the small vessels and thus obstructs the passage of the milk; in this way all the humours are deviated towards the uterus. These occurrences are frequent among women living in the towns who become cachectic and incapable of procreation".

The baby must be breast-fed according to a set time-table by day and by night and "not at all hours when he is awake or when he cries; indeed an attentive mother knows well how to distinguish

between the crying provoked by hunger and that due to pain or some other cause... She must refrain from breast-feeding when she is under the influence of anger or of drink or after sexual intercourse. Experience shows that some babies are liable to develop convulsions from the ingestion of milk from women who are upset by violent emotions”.

When the mother is unable to breast feed her baby, she is to be substituted by a “good wet-nurse in whose selection one has to pay attention not only to the quality and quantity of the milk but also to her moral character... She must be of moderate age, not too young but not too old; of an even temperament; healthy and strong. Brunettes are preferable to blondes; and those of medium weight to women who are too fat or too lean. Her teeth must be healthy and beautiful without any signs of scurvy. The breasts must neither be too large nor too small; with visible veins, a prominent and tuberculated areola and rather long and well-formed nipples. She must be of good conduct, not subject to fits of anger or melancholia and not given to wine or lust”. One has to keep in mind when engaging “country-women, who are brought to the towns for this purpose that, although while they live in the countryside they have a good and abundant supply of milk, this may easily alter due to the change of air and food and the lack of their customary exercise”. A wet-nurse who has been breast-feeding for three months is to be preferred to one who has been doing so for a longer period as in this case there is the likelihood that she may dry up.

The milk must be “sweet, white, odourless and of a medium consistency”. It is, therefore, necessary to test its suitability. “The milk is squeezed from the breast after cleaning the fingers and is collected in a glazed receptacle or silver spoon. Without these precautions one may be easily deceived for milk takes on the odour of the squeezing fingers or unglazed receptacle and is altered by emotions. Before tasting it, it is also necessary to rinse one’s mouth with plain water. Its consistency is shown by the way it drips when it is poured; if it is too thick it

flows with difficulty; if it is too thin it leaves a trace like water”.

When human milk is not available, the baby is given “cow’s milk mixed with one-third water or else goat’s milk which is more analogous apart from the fact that the goat allows the baby to suck her breast”.

The *puerpera* was not allowed out of bed before eight to nine days and she was advised to ensure that the air in her room was “neither too cold nor too hot”. The curtains of her bed were not to be pulled shut except when the windows of her room were opened to renew the air.

Instruments for abnormal delivery

A distinction was made between difficult labour — when delivery could not be effected without the help of the ‘expert hands’ of the obstetrician or mid-wife such as in cases of malpresentations of the foetus which required manual correction; and impossible labour — when manual correction proved ineffective and the obstetrician had to resort to the use of instruments to effect delivery.

The instruments at his disposal were:—

(a) The lever (*leva*). The lecturer is full of praise for this instrument the origin of which he ascribes to “the celebrated Englishman (sic) Roonhuysen”. The existence of this instrument, he says, “was not known to obstetricians for a period of sixty years. It was considered a mystery for by its means the head of the foetus could be released from its wedging in the vagina and delivery rendered easy... It has the advantage that it can be easily concealed by the operator from the sight of the parturient woman so as not to frighten her. The lever is made of box-wood and has a curved extremity. The obstetrician keeps it hidden up the sleeve of his coat, then with charming manners and gentle persuasion convinces the patient to allow him to explore her passages. Having obtained her consent he examines her and makes sure where the head has become impacted. He then pulls out the lever secretly from his sleeve and introduces its curved extremity inside the vagina pushing it up between the pubic

bones and the occiput of the foetus. Then he lifts the other end of the instrument until it reaches the union of the pubic bones, moves it forward, backward and laterally to free the head and allow its descent naturally; meanwhile with his other hand he supports the perineum to prevent its laceration which can be very troublesome during the puerperium". The lever was also recommended in the various forms of face presentations when manual correction proved ineffective.

(b) The forceps of Smellie and of Levret were recommended for the extraction of the malpositioned foetus after attempts at manual correction or the use of the lever had failed.

(c) The *Speculum matricis* "which serves to examine the condition of the vagina and uterus".

(d) The hooks of Levret which may be sheathed (with leather?)

(e) The *tire-tete* (*tira-capo*) of Mauriceau for the extraction of the head of the foetus after craniotomy when the head becomes impacted against the bones of the pelvis.

(f) The fillet or lack — a cord or ribbon-like loop — for tying the baby's feet in foot presentation and applying traction.

(g) The trocar to empty the cranium and the abdomen of the baby when these cavities were filled with liquid.

(h) The *perforator* to pierce the bones of the skull of the dead baby imprisoned in the mother's womb and remove the contents of the cranium. The skull bones were then reduced to pieces and extracted by the *tire-tete*.

(i) The toothed forceps (*tenaglia*) to break the parietal bones of the dead foetus before extracting it from the womb.

Practical instructions were imparted to the students on the psychological approach and bedside manners to be adopted when the need arose of using instruments in cases of impossible delivery. They are reproduced here, in translation, in full. "After warning the relatives of the bad state of the patient, the obstetrician must,

first of all, advice her to receive the Holy Sacraments in accordance with the rule imposed by the Church on the faithful in case of infirmity. He must do this prudently and gently and without frightening her. When the religious function is over, the obstetrician again approaches the woman and, with encouraging words, reassures her that the pain which she is about to endure will not be so severe as she might be imagining.

If the woman fails to be persuaded by these gentle ways, the obstetrician must make her aware of the dangers she would face if she refused his assistance. The exhortations of her spiritual director may also be helpful in convincing her of the necessity of submitting to the operation by appealing to her conscience to save the soul of her baby which would certainly be lost without the salutary administration of Baptism.

Operative procedures

Having signified her willingness to undergo the operation, the patient is placed in the most comfortable and convenient position for the operation in accordance with the dictates of decency owed to her person. She is instructed to remove personal ornaments and to free herself of clothing and girdles.

The bed must be exposed on all sides with the sheets and coverings reaching to the floor. At the foot of the bed is placed a basin which must be large enough to hold the liquids and other contents that attend delivery. Pieces of clothing are to be kept handy to cover her body and thus offset her embarrassment which tends to render delivery more difficult.

The patient is examined to ascertain whether she is strong enough to resist surgical intervention. The obstetrician must note if the face is pale; the eyes dull; the voice feeble and the abdomen too tense. He looks out for signs of inflammation of the uterus or of impending syncope with cold sweats and coldness of the extremities. If such signs are present, the obstetrician must remind the relatives of the very precarious state of the woman and of the risk of death. He must also

insist that a competent physician be present during the operation to judge of the manner in which the patient was being treated and thus be in a position to defend himself from the evil tongues which in sinister events are wont to attack the most capable operator.

The woman is covered with a sheet for the sake of decency. The obstetrician smears the instruments with oil or fat and dips them in a vase containing tepid water so that they will not be cold when they come in contact with her genital parts. He then girds himself with an apron and places himself comfortably in front of the patient. He introduces his hand forward very slowly into the vagina under cover of the sheet already mentioned and dilates the passages very gradually with his index and middle fingers. Having ascertained the nature of the obstacle impeding delivery, he will carry out that operative procedure and use those instruments which the situation warrants. Having terminated the operation, he cleans his hands and places the patient in the most comfortable position to enable her to rest and recuperate from her pains and sufferings".

Section of the symphysis pubis was recommended when natural delivery was impossible owing to a narrow pelvis. "This operation was not unknown to the celebrated anatomist G.B. Morgagni as his pupils testify. He carried it out on the cadaver and showed that by incising and separating the symphysis one could increase the space of the pelvis and thus facilitate the exit of the foetus from the deformed obstructing pelvis. Spurred by this finding, Don Alfonso Le Roi carried out the incision on six occasions with great success. The same results were reported by Sigault of Paris who performed it on the 1st October 1777." It was also courageously and successfully done by "several others".

We do not know whether Butigieg ever performed the operation himself. The various steps which are to be followed by the obstetrician are those laid down by "renowned operators" of his time.

"The operation", he states, "commen-

ces with the introduction of a syringe in the urinary bladder of the patient so as to maintain the neck of this viscus away from the pubis to prevent injuring it during the incision of the symphysis..... Having cut the skin, one must look out for the external pudendal artery which..... has sometimes been accidentally severed". The muscles, ligaments and the cartilage are cut. The pubic bones are then separated from each other thus permitting the exit of the foetus through the enlarged outlet. After the birth of the baby, the mother is kept in bed resting on her back with the lower limbs extended and held close together. The cut ends of the pubic bones are then approximated and kept in place by bandaging the pelvis.

Caesarean section

The lecturer deals extensively in no less than 12 folios with the history of Caesarean Section in the living and reviews the merits and weaknesses of the arguments adduced by various authors for and against the operation. He reports instances of prominent personages who were born through Caesarean Section from the beginning of the 16th century to his own times. "Thanks to the sound knowledge", he comments, "obtained from modern anatomical studies and confirmed by authoritative rational observations, many unfortunate mothers have been saved from the cruel jaws of death together with their babies". Obstetrics had advanced so much that "at present it has been raised to the status of a science because it is based on well founded physiological and anatomical notions and supported by an undeniable series of successes". In fact these advances have shown "how barbarous were the precepts of past obstetricians who taught that in an impossible delivery the life of the mother was to be spared in preference to that of the foetus..... without considering the availability of the means, gained by experience, leading to the conservation of the lives of the two individuals; and among such means to save mother and child, we have at our disposal the operation of Caesarean Section or hysteriotomy".

Some writers had criticised the operation because of the profuse haemorrhage which sometimes accompanied it; but, argued Dr. Buttigieg, if one were to condemn it because of this blood loss, then the surgeon should refrain, for the same reason, from performing amputations, extirpating cancerous breasts, removing nasal polypi and carrying out lithotomies and other operative procedures usually attended by profuse bleeding.

Caesarean section caused no permanent damage to the uterus; indeed this organ returned to its former state after surgical intervention so much so that women, who had undergone the operation, later became pregnant and gave birth to offspring in a natural manner. The lecturer also referred to case reports, published in the *Memorie dell'Accademia Reale di Chirurgia* of Paris, of women who underwent the operation seven times with successful results. Dr. Buttigieg was so convinced of the usefulness and practicability of the operation that he did not hesitate to recommend it also in such other conditions as extra-uterine pregnancies, tumours of the pregnant uterus and extrusion of the foetus into the abdominal cavity following rupture of the uterus.

Performing Caesarean Section

Not every surgeon, however, was competent enough to perform the operation because, besides knowledge, an extensive experience was also required. Having enunciated this prerequisite Dr. Buttigieg goes on to describe in detail the various steps to be followed by the surgeon. The operator must first of all obtain the consent of the patient and induce her to receive Holy Communion. Having determined that the woman was fit to undergo surgical intervention, the operator was advised to obtain a second opinion from a physician. This was a precautionary self-protective measure; in fact, in some places in Italy, it was the custom to secure permission to operate from the local judge so that if the operation was not attended "by a happy result, the surgeon could defend himself against an accusation of incompetence".

The urinary bladder was voided by means of a syringe and the bowels emptied by a clyster. The patient was placed alongside the edge of the bed with her head and chest somewhat elevated. After exposing the abdomen a line was drawn "with a pen dipped in ink..... extending from the upper lip of the iliac bone to the union of the last true rib with its cartilage". The incision was made mid-way between the line thus drawn and the *linea alba*.

In cutting the skin and underlying tissues with the bistoury care had to be taken not to damage the epigastric artery. Having opened the abdominal cavity, the omentum and intestines were held by an assistant at the upper end of the incision to expose the uterus. The womb was cut antero-laterally avoiding injury to the Fallopiian tubes, the round ligament and the main branches of the adjoining blood vessels. Having cut the membranes, the surgeon pushed his hand inside the uterus and extracted the foetus with the placenta.

The uterus was left unsutured but the incision in the abdominal wall was closed by six or eight stitches of waxed threads which were tied over "a small pad of waxed taffeta". The whole was covered with a dressing 'soaked in hot red wine' and a bandage applied. The dressing was changed every 24 hours. The patient was then turned towards the side of the incision to facilitate the draining away of blood from the abdominal cavity to the outside. Her lower limbs were maintained in the flexed position to ensure the relaxation of the abdominal muscles.

The Church and Caesarean Section

The operation of Caesarean Section on the dead had become a burning issue in the 18th century and both the church and the state had enacted decrees enforcing its performance so much so that "when no surgeon was available, the priest himself was obliged to carry it out" under the penalty of "fulminating excommunication". The position had not changed at the dawn of the 19th century, hence the reason why Dr. Buttigieg launches, in his last lecture, into a survey of the origin and historical development of Caesarean Section in the dead and into a long discus-

sion on its theological, ecclesiastical, legal and ethical aspects. He lists a number of prominent persons who were born through-post mortem Caesarean Section such as St. Gerard, Bishop of Constantinople (1001 A.D.?); St. Lambert (1154), St. Raymond Non-nato (12th century) and Cardinal Niccolò Sfondrati (1590) who later became Pope Gregory XIV. He then reviews the various theological opinions of his day regarding the time when the soul entered the foetus, i.e. whether at conception, or three days later or at the fortieth day — which last view was favoured by the church.

He exhorts his students not to neglect to perform the operation and reminds them of the injunctions of the church and especially of Pope Gregory IX, St. Thomas Aquinas and St. Charles Borromeo; and finally quotes extracts from the edicts of the 9th August 1748 of King Ferdinand IV of Sicily on the matter.

COMMENT

Midwives

As early as the second decade of the seventeenth century the practice of midwifery in Malta was regulated by protomedical decrees issued from time to time such as those of the 2nd August 1642 and of the 24th September 1722. These enactments were later incorporated in the legal codes published in 1724 and 1784.

No woman was allowed to practice as midwife unless she was first examined and approved by the *Protomedico* or Chief Government Medical Officer and granted the requisite warrant which she had to submit for renewal to every successive *Protomedico* soon after his appointment. An official register of approved midwives was deposited at the Grand Court. These provisions were still in force at the beginning of the last century during the time of Dr. Buttigieg (Cassar, 1965b).

Midwives were examined by the bishop or his vicar whenever he paid a pastoral visit to their parishes to test their knowledge concerning the proper administration of the Sacrament of Baptism *in casu necessitatis*. The midwives also submitted, for inspection and renewal by the bishop,

the warrant of the *Protomedico* authorising them to practice midwifery and the licence issued by the Episcopal Curia. These procedures are recorded in the account of the pastoral visit of Fra Paulus Alpheran de Bussan of 1744 (Ms. 190, C.A.M.). They were in operation as late as 1906 (*Visita Pastorale*, 1906). It is of interest to remark that in England the bishops remained the licensing authorities as late as the eighteenth century (Johnstone, 1952a).

The lack of skill and of proper training of midwives obtaining in Malta in Dr. Buttigieg's time was also to be found in other countries. In Edinburgh, for instance, even as late as the 1830's 'unqualified often disreputable midwives still exerted considerable sway' although as early as 1726 midwives were being instructed in their work (Shepherd, 1969a). More than one hundred years later, Florence Nightingale, commenting on the state of midwifery in England in 1871, stated: "Midwives are so ignorant that it is almost a term of contempt" (Nightingale, 1871).

In Malta an attempt was made by the surgeon Dr. Giuseppe Antonio Cren to start a course of instruction for midwives in 1772. Dr. G. Imbert, one of the Senior Physicians at the Holy Infirmary, however, opined that such lectures could only be "scandalous and full of inconveniences" as the midwives were so ignorant that they did not even possess a knowledge of the basic principles of anatomy or of the technical terms used in their art; and there the matter ended.

The Order of St. John was chased away from Malta by the French under Napoleon in 1798. After two years of warfare and disruption of civilian life, the Maltese Islands passed under British protection in 1800. During the re-organization of the economy and public administration of the Island, one of the first acts of the British Commissioner, Sir Alexander Ball, was the re-establishment of the University on the 6th November 1800 and the resumption of medical studies (Cassar Pullicino, 1958).

Official initiative for the teaching of obstetrics to medical students and the training of midwives in Malta dates since March 1802 when Dr. Buttigieg was appointed

Teacher of Obstetrics at the Women's Hospital at Valletta. Thus besides imparting "the obstetric art" to medical students "in writing and orally" Dr. Butigieg also held a separate class for midwives who were taught "orally and given explanations, where needed, in the national language as best he could". As the lectures were delivered in Italian and as the midwives did not have a good command of this language, the explanations were made in Maltese (*Piano per il regolamento dell'ospedale di Malta*, 1802a).

These developments account for Dr. Butigieg's reference, in his introductory lecture, "to the paternal solicitude of this happy and ever praiseworthy government" of His Britannic Majesty in contrast to that of the Order of St. John which had failed to grasp the opportunity provided by Dr. G. A. Cren's offer to initiate the proper training of midwives.

The school of midwives, however, functioned very erratically during the nineteenth century. The teaching of obstetrics was still "very much neglected" by the mid-century when, to remedy matters, Dr. G. Clinquant was appointed to teach "the practical part" of midwifery to a number of women (*The Malta Mail*, 1854); but even as late as the last quarter of the century the position was very unsatisfactory as the candidates who presented themselves for training were illiterate. Indeed the Chief Government Medical Officer, Prof. S.L. Pisani, who had written a text-book for midwives in Maltese in 1883, wrote as follows to Government on the 18th February 1897: "I tried on one occasion to produce midwives of a better class — I did not succeed — only one had the courage to become a midwife but after a while she gave it up and did not continue to practise. I remember having engaged her to attend on an Austrian lady, the wife of an officer in the Black Watch. At the last moment, when her services were required, she deserted me and instead of herself she had the impudence to send me an ordinary nurse" (Files, Vol. 55, 1897).

It was not until 1915 that the training of midwives was placed on a sound footing (Cassar, 1965c).

Pains of childbirth

Dr. Butigieg held the view, on religious grounds, that the pains of childbirth were an inevitable accompaniment of labour. This idea went back to Biblical times when the Lord is quoting as saying to Eve: "In sorrow thou shalt bring forth children" (Genesis, Chap. iii, v. 16) — an attitude that was perpetuated by the Christian church until quite recent times. But, apart from religious considerations, Dr. Butigieg remarks apologetically that the art of obstetrics in his days did not have the means of preventing the pains of labour. That is quite true but it is tempting to speculate whether he was aware that one of his contemporaries — Humphry Davy — had suggested in 1800 the inhalation of nitrous oxide to eliminate the pain of surgical operations. The medical profession had ignored this idea and it was not until the 19th January 1847 that anaesthesia, in the form of ether inhalation, was first administered to a woman in difficult labour owing to a deformed pelvis. The pioneer was James Young Simpson of Edinburgh who had to struggle against the criticism and opposition of moralists and theologians. General anaesthesia during labour gained acceptance only after 1853 when Queen Victoria was given chloroform by John Snow (1813-58) when she was delivered of a son, the Duke of Albany, on the 7th April of that year (Shepherd, 1969b, Radcliffe, 1967a).

Bloodletting

Dr. Butigieg condemned the routine bloodletting to which pregnant women resorted, in Malta, during the 7th month of gestation. It appears that this measure was taken as a precaution against the development of eclampsia which occurs usually after the twenty-eighth week. The idea was to rid the body of the noxious substances causing the convulsions.

Bloodletting or phlebotomy was not a remedy limited to pregnancy but, since ancient times, had been prescribed for the relief of a diversity of ailments. In Malta, for instance, it was carried out during the plague of 1592-93 and in that of 1675-6 with the aim of eliminating the "bad humours" circulating in the body. In the 18th century,

it was the routine procedure in the surgical wards of the Holy Infirmary at Valletta to prevent undue inflammation in wounds; and until the 1830's it was the standard method of treatment in fevers. (Cassar, 1965d).

Although bloodletting began to lose its importance in the 19th century, 'heroic phlebotomy' was still the main treatment prescribed for eclampsia at the Rotunda Hospital in Dublin in the early years of the century and even as late as 1839 it was being recommended for this condition by Sir Charles Bell (1774-1842) (King, 1958. Falkiner, 1947; F.M.G., 1955 a.).

The popular usage, therefore, that was current in Malta in the days of Dr. Butigieg was not a folk remedy but had the backing of the accepted medical thinking of the time.

Mother's wishes

Dr. Butigieg discounted the popular belief that the unfulfilled wishes of pregnant women affected the foetus in such a way as to result in the birth of a deformed baby. In this respect he was ahead of his time and of a contemporary colleague — Dr. Salvatore Bernard (1724-1806) Medical Superintendent of Santo Spirito Hospital at Rabat — who held that if a pregnant woman experienced an unsatisfied craving for some object, such as a fruit or a flower, the infant would be born with a birth-mark representing the colour and shape of the object desired. More fundamental bodily changes could be induced in the offspring and Dr. Bernard reports the case of a woman who, having gazed for some time at the picture of a Moor, gave birth to a dark skinned child (Cassar, 1949).

The view that the imagination of the mother could influence adversely the formation of the foetus and lead to the birth of a "monster" was still upheld by some members of the profession abroad as late as the fourth decade of the century (*Il Filocamo*, 1841).

It is of interest to know that such notions form part of the current folklore of the Maltese Islands so much so that pregnant women are warned to keep away from ugly and deformed people lest the newborn should come to resemble them. Neigh-

hours are also always ready to allow a pregnant woman to sample their cooking if she remarks on its smell or else expresses the desire to partake of it.

Asepsis

Dr. Butigieg's directions to his medical students to anoint their fingers with butter or some other type of lubricant when performing vaginal examinations and to smear obstetrical instruments with oil or fat before introducing them into the genital passages undeniably show a lack of appreciation of the importance of surgical cleanliness. It is worth noting, however, that he was not alone in this respect. Hundreds of years before him Hippocrates (4th cent. B.C.), in describing the usage of uterine dilators, recommended the smearing of the instruments with oil before their introduction into the cervix (Milne, 1970c) while several decades after Dr. Butigieg lubrication of the hand and forearm with butter was still resorted to in 1839 by Sir Charles Bell (1774-1842) the distinguished surgeon of London and Edinburgh, before the performance of manipulations (F.M.G., 1955 b.).

The concept of infections had not yet evolved at the beginning of the 19th century. Indeed when, in 1846, Ignaz Semmelweis (1815-65) introduced in Vienna the washing of hands with chlorinated water in his lying-in-wards he was vehemently attacked by his senior colleagues in spite of the dramatic drop in the mortality rate of his puerperal fever cases (Shepherd, 1969c). It must also be recalled that it was only on 7th April 1864 that Louis Pasteur (1822-95) publicly announced his experiments confirming the germ theory of disease and that it was not until 1865 that Joseph Lister (1827-1912) began to apply Pasteur's findings in operative surgery, publishing the encouraging results of his antiseptic treatment with carbolic acid in 1867.

Obstetricians, however, were very slow in adopting his antiseptic methods, which did not come into general use before 1880 (Radcliffe, 1967b). In fact, in 1883 Prof. S.L. Pisani, who held the Chair of Midwifery of our University, was still recommending to his students-midwives the smearing of their fingers with oil when

performing vaginal examinations (Pisani 1883a). In April 1890, however, Dr. G.F. Inglott was using "antiseptic vaseline" on his hands when carrying out podalic versions. He prescribed "antiseptic irrigations" of the uterus following these procedures (*La rivista medica*, 1890).

Breast feeding

Dr. Butigieg's emphasis on the importance of breast feeding cannot be gainsaid. His maxim that "the best food for the body is the mother's milk" has the support of modern paediatricians. Dr. Butigieg was aware that it contained the essential elements for the nutrition of the baby; what he did not know is that it also provided immunity against certain infantile diseases. At a period when the Maltese Islands were in a poor shape socially and economically after two years of war and indigence breast feeding was easily available and cheap.

It is significant that many paediatricians to-day are campaigning vigourously, as Dr. Butigieg did almost one hundred and seventy years ago, on the advantages of breast feeding in several parts of the world (*Medical News-Tribune*, 1971).

Scurvy

In describing the desirable qualities of a "good wet-nurse", Dr. Butigieg rightly stresses the condition of her teeth which "must be healthy and beautiful and without any signs of scurvy". Although the discovery of Vitamin C did not happen until one hundred years later, it was well known by the beginning of the nineteenth century that scurvy could be prevented by drinking the juice of sour oranges and lemons. Indeed the first to point out the anti-scorbutic properties of these fruits was Solomon Albertus in 1593 but up to the eighteenth century scurvy remained a dreaded disease among seamen and civilians deprived of fresh vegetables, until Dr. James Lind (1716-94) published a treatise dealing with its cause and treatment in 1753.

French editions of Lind's book were published in 1756 and 1775 and it is not unlikely that Dr. Butigieg may have read one of these translations.

There is no doubt that scurvy occurred in Malta in an endemic form in the

eighteenth century. In fact the surgeon Michel'Angelo Grima refers to the disease among surgical patients under treatment at the Holy Infirmary of Valletta in 1773 (Grima, 1773) while in 1791 a Sig. de Sirabode obtained the licence from the *Proto-medico* to sell in Malta an anti-scorbutic decoction which "preseved from the scurvy" and which was publicly recommended by several highly placed knights such as the Bali de la Tour du Pin, General of the Galleys of Malta, and the Bali de Loras, Marshall of the Order of St. John (*Avviso importante*, 1791).

Dr. Butigieg had lived through the blockade of the French in Malta in 1798-1800 when scurvy proved to be the most formidable killer among French troops and he must have retained a vivid picture of the plight from this scourge of the French and of the Maltese besieged in Valletta during those years.

Instruments

An intriguing feature about the handling of instruments — such as the lever — was the instruction to conceal their use from the sight and knowledge of both the patient and bystanders. This was due to the fear prevalent in those days of the use of instruments on the part of parturient women and to the concern of the obstetrician that should anything go wrong with the confinement, the blame would be cast upon him for having applied the tools. Concealment was possible because it was then considered shameful for a woman to reveal the nakedness of her body. Out of consideration, therefore, for feminine feelings of decency and propriety, the woman was kept covered during obstetrical manipulations by a sheet that stretched from over the patient to the shoulders or lap of the doctor; thus he could carry out the required manouvres and handling of instruments under cover of this sheet without being detected by the patient or those around him (Johnstone, 1952b).

The instruments mentioned in the lectures are:—

- (a) The lever of Hendrik van Roonhuysen (b. 1622) which was made known in 1753 (Cianfrani, 1960a). Dr. Butigieg incorrectly states that Roonhuysen was an English-

man. He was Dutch. Roonhuysen also produced a forceps believed to have been the family secret sold to a party of Dutch doctors in 1699 by the Englishman Hugh Chamberlen senior (Radcliffe, 1967c). Dr. Butigieg might have confused the nationality of the two men.

(b) The forceps of Smellie and of Levret which the lecturer recommended. William Smellie (1697-1763) was familiar with the forceps that had been used by Chapman (1733), Giffard (1726) and Dusee (1733) — all very similar to the original Chamberlen instrument (1650). However he was not satisfied with them and from 1745 to 1749 he improved the forceps by shortening it, providing it with the so-called "English Lock" and applying the pelvic curve.

The Andre Levret (1703-80) forceps was initially a straight one but in 1751, Levret produced a curved one. Just as Smellie dominated British midwifery, Levret was the leading contemporary figure in continental obstetrics (Johnston, 1952c; Radcliffe, 1967d).

(c) The *speculum matricis* (or vaginal speculum) which dated since Roman times. Specimens have been excavated from the ruins of Pompeii (79 A.D.). The speculum came into use again in Europe in the 16th and 17th centuries when it was employed both to inspect and to dilate the vagina (Radcliffe, 1967e).

(d) The blunt hook employed for bringing down the thighs in a breech delivery. It was abandoned in the present century.

(e) The perforator which had the form of a pair of scissors with the sharp edge on the outside (Radcliffe, 1967f).

Caesarean Section

An edict inculcating the obligation on medical men to perform Caesarean section was published in Malta on the 14th June 1788 by Archbishop Fra Vincenzo Labini who governed the Diocese from 1780 to 1807. In the absence of a physician or surgeon, the Parish Priest was enjoined to carry it out himself; if he failed to do it, he would be committing "a grave sin to his spiritual and temporal peril". The Parish priest, therefore, had to learn to perform the operation and to keep ready for that purpose "some iron or

implement" with which to open the mother's abdomen for the extraction of the baby.

The regulations of the Civil Hospital Valetta made it obligatory, in 1802, upon the Principal or Senior Surgeon of the Women's Hospital "to render his assistance in difficult deliveries and to perform the Caesarean operation when required" (*Piano per il regolamento dell'ospedale di Malta, 1802b*). We are, however, left guessing as to whether the operation was to be performed on the living or only on the dead. We are unaware, too, whether Dr. Butigieg ever carried out the operation himself.

It is known that post-mortem Caesarean section was performed in Malta in 1813 and 1837. The issue of Caesarean section on the dead became a thorny one in Malta during the cholera epidemic of 1867 when the Archbishop of Malta warned the Police Physician of Gudja (the equivalent of the present District Medical Officer) not to neglect to perform the operation on the corpses of pregnant women to try to save their offspring. Several such operations were carried out in that year on dead women.

In his lectures to student midwives in 1883 Prof. S.L. Pisani told them that they had to be prepared to perform the operation on the dead themselves in the absence of a doctor. He also stated that the operation was indicated in the living in cases of a narrow pelvis and that it had been carried out by surgeons on many occasions with the survival of the mother and the baby. He leaves us in the dark, however, as to whether he ever attempted the operation himself (Pisani, 1883b). Indeed the first recorded Caesarean section to be performed on the living in Malta did not take place until 1891 (Cassar, 1968).

ALTERED SOCIAL CUSTOMS

Owing to the changes in the social customs and cultural variables that have occurred in our manner of living since the time of Dr. Butigieg, some of the aspects and objects of everyday life to which he refers in his lectures are unfamiliar to the present-day reader. The following notes are intended to clarify these facets and to

help recapture the local socio-cultural atmosphere of the period.

The Calesse of Caleche

The commonest means of transport at the time and for many years afterwards was this two-wheeled, mule-driven carriage. Although it was "roomy" it was at best an uncomfortable contraption that must have been very trying to pregnant women owing to its jolting movements (Mac Gill, 1839a; The Malta Mail, 1850).

A visitor to the Island many years later wrote in 1887 that he was glad to see the disappearance of "that hideous vehicle the *caleche* which ought to have become obsolete half a century since". It was replaced by the *karrozzin* on four wheels in which one could "travel about with ease and comfort" (Raven, 1887).

Corset

The ill-effects of improperly fitting corsets were being stressed by obstetricians towards the mid eighteenth century (Cianfrani, 1960b).

This garment was usually made of cotton reinforced with whale-bones. Others were made of leather at the beginning of the nineteenth century. They compressed both the chest and the waist. Tight lacing, in spite of its condemnation by the medical profession, was still fashionable in Victorian times (The New Universal Encyclopedia, n.d.).

Goat's milk

Evidence derived from the representation of the goat on pottery from Hal Saflieni temple, dating since 2400 B.C., points to the existence of this domestic animal in our Islands since pre-historic times. Presumably it was, then as now, the main source of fresh milk available for our ancestors. In Dr. Butigieg's time, cow's milk was also to be had and, where breast feeding was not possible, he recommended cow's milk for babies diluted with one third of water. However, he preferred goat's milk because (a) it "is more analogous (to human milk)" and (b) "the goat allows the baby to suck her breast". An amusing and tender description of how this was effected was written by an eye-wit-

ness in 1839 when this custom was still prevalent:— "But where is there anything to match the intelligent looking goat of Malta, the assistant nurse to the ladies of the Island? The Malta goat is taught to suckle children, they soon acquire the art and appear to like it; it is truly astonishing with what intelligence they do their work. They leave their pasture when they think the child requires a suck, bleat at the door until admitted, scamper to the nursery where the little urchin is placed on a pillow on the floor, the goat lies down beside it, a tit is placed in its mouth, and then it sucks its fill; or, when Nanny is of opinion it has had enough, she rises, goes through her gambols, then bounds off to feed. We have known families where the same goat has suckled five or six children; the children became attached to their quadruped nurse, smile at her gambols and cry when they think she is neglecting them" (Mac Gill, 183b; *Repertorio di conoscenze utili*, 1843a).

It is hardly necessary to remark that in those days no one had any inkling that in goats' milk might lurk the dangerous germ of Undulant Fever; indeed it was not until a century later that Dr. Themistocles Zammit showed, in 1905, that the goat was the reservoir of the microbe and that its milk was the vehicle by which the germ was transmitted to human beings.

Canopied beds

The beds of Dr. Butigieg's days were the four-poster i.e. provided with a wooden or iron framework supported on vertical poles one at each corner of the bed. From this framework draught proof curtains hung down on the four sides of the bed. This type of canopied bed is seen depicted in *ex voto* paintings showing the sick room of the early nineteenth century. A few of these four-poster beds are still extant in Malta in private houses.

Swaddling

An injunction of Dr. Butigieg, which reflects credit on him, was his condemnation of the swaddling of babies as it hampered the physiological functions and growth of the baby. But swaddling persisted for many years afterwards.

Dr. John Hennen describes the manner in which Maltese infants were clothed in the early twenties of the last century in these words:— "In early infancy they are swathed round from the shoulders to the toes, the arms being laid along the sides and included in the bandage so as to present a very striking resemblance to an Egyptian mummy" (Hennen, 1830a).

This custom was not peculiar to the Maltese Islands but occurred elsewhere in the Mediterranean. The same writer remarks on the "singular method of dressing" infants in Corfu, by swathing them very tightly "with a roller from the toes to the neck binding down the arms" (Heenen, 1830b). This custom was being condemned by pioneer paediatricians during the 1740's (Cianfrani, 1960c). In Malta it was still extant one hundred years later though it was being branded as a "torture" and censured by an educational journal in 1843 (*Repertorio di conoscenze utili*, 1843b). With the passage of time the arms were no longer included in the binding but the trunk and feet were still being encircled by a roller (*fisqija*) within living memory. In fact the author possesses the roller that bound his trunk and feet as an infant.

In spite of these restraints on bodily movements, however, no great harm seems to have befallen Maltese babies; so much so that their activity, especially as swimmers and divers, was "extremely striking" and a crippled child is said to have been a rare sight (Heenen, 1830c). The same observation was made by a British resident, who had lived in Malta for upwards of thirty years, when he asked in 1839:— "Where is the country in which there are fewer rickets or deformed children than here?" (Mac Gill, 1839c).

Administration of Holy Sacraments

The practice of administering Holy Communion to patients suffering from a serious illness was in conformity with the provisions prescribed by the Lateran Council of the Church held in 1215 under Pope Innocent III. Besides, the ancient belief that disease was the result of sin still occupied men's minds at the beginning of the last century and, therefore, it was

quite in keeping with this trend of thought to exhort the patient to atone for sins committed and to enter into a state of grace before undergoing treatment.

Physicians and surgeons had to make a declaration of faith, in the presence of the Bishop, before they were admitted to practice in Malta, while the Synodal Constitutions published in 1591 and again in 1625 obliged Maltese doctors, when called to see a sick person in bed, to persuade the patient to receive the Sacraments. The doctor was debarred from visiting the patient after the third day if he had not complied with this ruling. These conditions, which prevailed in other Catholic countries, were so strictly observed until the end of the 18th century that no patient was assigned a bed at the Holy Infirmary of Valletta until after he had confessed and received Holy Communion (Cassar, 1965e). This ruling was modified in 1802 but it was still obligatory on the Hospital Chaplains attached to the Civil Hospital to administer these two Sacraments to every newly admitted patient (*Piano per il regolamento dell'ospedale di Malta*, 1802c).

Who was Dr. Francesco Butigieg?

An extensive and prolonged quest to discover some biographical data about Dr. Butigieg and to catch a glimpse of his life and personality was fruitless and we know nothing except the little we can glean from a perusal of his lectures.

This internal evidence provides us only with a means of assessing his (a) academic background and (b) teaching methods.

Academic background

The authorities quoted by Dr. Butigieg range from the time of the Hippocratic writings in the fourth century B.C. to his contemporary Jean Louis Baudelocque who died in 1810. The following annotated and representative list of the authors he mentions in his lectures shows the extent and nature of the medical literature with which he was familiar. The authors are listed in chronological order:—

Anaxagora (500?-428 B.C.) is reputed to have been the first to practice anatomical dissection on animals. Quoted as maintain-

ing that the foetus nourishes itself through the umbilical cord. (Castiglioni, 1948a).

Democritus (b. circa 460 B.C.) was the teacher of Hippocrates and renowned for his zoological studies and investigations on the physiology of generation (Castiglioni, 1948b. Cianfrani, 1960d). Quoted concerning the difficulty of ascertaining the death of the foetus *in utero*.

Hippocrates (c. 460 — c. 380/370 B.C.) established medicine as an independent discipline from philosophy. He advocated a natural as against a divine origin of disease. Quoted (a) in support of Anaxagora's idea of the function of the umbilical cord, (b) as a warning to women to abstain from intercourse in early pregnancy, to avoid "stimulant clysters" and venesection as these may cause abortion and (c) as estimating the duration of pregnancy to be 263 days.

Aristotle (384-322 B.C.) Though not a physician this naturalist and philosopher laid the foundations of biology and embryology (Guthrie, 1947a). Quoted as maintaining that the foetus derived its nourishment through the umbilical cord and that hydadtiform moles were caused by "absence of heat".

Galen (130-200 A.D.) was a first class clinician and prolific writer whose medical teachings prevailed until the time of William Harvey (1578-1657) and even later. Quoted as confirming that the cord is the means of conveying nourishment to the baby and that though respiration may cease in asphyxia of the new-born, the heart may still be beating imperceptibly.

Avicenna (980-1037 A.D.), Persian physician, wrote the *Canon of Medicine* which was still used as a textbook in many medical schools as late as 1650. Quoted as stating that baths may cause bleedings in pregnant women and in ascribing mole formation to "excessive heat".

Ambroise Pare' (1510-90), a prominent French surgeon, reintroduced podalic version after many centuries of neglect. He opposed Caesarean Section in the living as he did not think it possible for the mother to survive the operation (Cianfrani, 1960e). Quoted in connection with his opposition to Caesarean Section.

Gabriello Fallopius (1523-62) held the Chair of Anatomy at Padua. He accurately described the human ovaries and the tubes which have been since named after him (Cianfrani, 1960f). Quoted in the description of the anatomy of the fallopian tubes.

William Harvey (1578-1657) studied anatomy and embryology at Padua. Apart from describing the circulation of the blood in 1628, he carried out experiments on the chick embryo and published his observations on the development of the foetus in 1651 in *De generatione animalium*. This work has been regarded as the first original book on midwifery by an English author (Cianfrani, 1960g; Guthrie, 1947b). Quoted in connection with the anatomy of the human ovary and with his theory about the conception of twins.

Paolo Zacchia (1584-1659) was the compiler of the first treatise on legal medicine giving a systematic shape to forensic medicine (1620). Quoted as holding that a mole is the result of conception and therefore its presence in an unmarried woman was to be regarded as evidence of "violated chastity"; and as maintaining that the foetus received its soul at conception.

Francis Glisson (1597-1677), Professor of Physic at Cambridge, gave the first accurate description of the capsule of the liver (1654) and wrote an account of infantile rickets (1650). Quoted in explanation of the breast pains experienced by pregnant women as being due to communication between the uterus and the mammary glands by means of blood vessels and nerves.

Thomas Sydenham (1624-89) opposed theorising in medicine and insisted that medicine could be learned only at the bedside of the patient. Dr. Buttigieg calls him the "incomparable Sydenham". He is quoted in connection with the sinister significance of the appearance of convulsions in pregnancy.

Francois Mauriceau (1637-1709) was the first to describe brow presentation and to report a tubal pregnancy. In 1664 he removed a mole by intrauterine finger manipulation (Cianfrani, 1960h). Quoted

in the course of a discussion on the causation of false pregnancy.

Frederich Ruysch (1638-1731) was a Dutch anatomist who ascribed mole formation to disease of the ovum. He is quoted in explanation of the breast pains of pregnant women as already stated under **Francis Glisson**.

Archibald Pitcairn (1652-1713), Professor of Medicine at Leyden, tried to explain the functions of the human body on a mechanical basis. He is quoted in support of Galen's views of asphyxia.

Pierre Dionis (d. 1718) gave the first clear description of interstitial pregnancy and discussed the arrest of the impregnated ovum in the passage of the uterine cavity (Cianfrani, 1960i). He is quoted in connection with his manoeuvre of turning prolapse of the hand into podalic version and then effecting delivery.

Hendrik van Deventer (1651-1724), a leading Dutch obstetrician, initiated studies on the various forms of the bony pelvis and on the mechanism of labour. He has been called one of the founders of modern obstetrics (Castiglioni, 1948c; Cianfrani, 1960j). Quoted in connection with the difficulty of determining that a foetus has died *in utero*.

Caspar Bartholin (1655-1738), son of Thomas, described the vaginal glands named after him (Cianfrani, 1960m; O'Malle; 1970a). Quoted in connection with the anatomy and function of the vaginal glands and with reports of cases of successful Caesarean Section on the living.

Hermann Boerhaave (1668-1738), Professor of Medicine at Leyden, was the central figure of European medicine in the first quarter of the 18th century. Quoted in connection with the anatomy of the umbilical cord and with the warning that a new-born baby with asphyxia is not to be considered dead because he may not appear to be breathing for his heart may still be beating imperceptibly.

Lorenz Heister (1683-1758), a pupil of Boerhaave, was an outstanding German anatomist and surgeon. Quoted in support of the view that the foetus obtained his nourishment through the umbilical cord.

Gian Battista Morgagni (1682-1771), the founder of modern pathology, correla-

ted the post-mortem finding with the clinical features of disease in a work which he published in 1761. Quoted in support of Galen regarding cases of new-born asphyxia and in connection with the pathology of uterine obliquity.

Jean Astruc (1684-1766) is known for his reference to bimanual examination of the pelvis and for reviving the use of the vaginal speculum (1761) (Cianfrani, 1960l). He is quoted as ascribing swelling of the lower limbs in pregnancy to "suppressed menstruation".

Richard Manningham (d. 1759) was the founder of the first hospital for lying-in women in London (1739) which later became known as Queen Charlotte Hospital. Quoted as stating that false pregnancy is produced by accumulation of air and water in the abdomen.

Alex Munro (1697-1767) was the first of a family of four Munros who occupied the Chair of Anatomy at Edinburgh for one hundred twenty-six years, each son succeeding the father (Cianfrani, 1960m). Quoted in confirmation of the idea that the foetus nourishes itself through the umbilical cord.

Gerhard van Swieten (1700-72), a pupil of Boerhaave, brought clinical medicine to Vienna and re-organised the Old Medical School of that City. Quoted as stating that oedema of the legs in pregnancy is due to pressure of the uterus on the iliac veins; that uterine bleeding is one of the most dreaded complications of pregnancy; and that Caesarean Section must be performed on dead pregnant women.

Albrecht von Haller (1708-1777), a pupil of Boerhaave, has been acclaimed as the founder of modern physiology. Quoted as showing that foetal asphyxia may exist with continued action of the heart.

Andre Levret (1703-1780), a renowned obstetrician from Paris, devised a curved form of forceps to fit the pelvic curve (1751). Quoted in connection with the fatal results of uterine bleeding in pregnancy.

Jean Louis Baudelocque (1748-1810) devised a method of gauging the diameters of the normal and the contracted pelvis

in living women and correlating their relationships to the size of the foetal head (Cianfrani, 1960n). Quoted with regard to the means of correcting the obliquity of the uterus.

This survey of the authors consulted by Dr. Butigieg shows why his lectures are saturated with the medical literature and the theological views developed during the passage of hundreds of years. Medical knowledge of classical Greece is represented by four authorities; the early middle ages and the sixteenth century by two each; and the seventeenth and eighteenth centuries by eight and by twelve respectively. Indeed though Dr. Butigieg was teaching in 1804-06, his medical education and obstetrical experience did not belong to the nineteenth century but were inevitably those of a medical man of the eighteenth century. To us in the late twentieth century many of his authorities appear antiquated with hardly any claim to scientific merit but we must not judge them by present standards. It must be borne in mind that in his days ideas did not go out of date quickly because the accumulation of knowledge was slow and therefore books became obsolete less rapidly than they do now. The medical journal, though first appearing in the late seventeenth century, did not develop into the important medium for the diffusion of medical thought until the nineteenth century (World Health, 1972). Considered in the context of Dr. Butigieg's time, therefore, his medical reading represented the best in the literature of his period. Some were the giants of medicine and surgery — Pare, Harvey, Sydenham, Boerhaave, Morgagni and van Swieten; several others were responsible for some famous "firsts" in obstetrics and gynaecology; a few more were no less outstanding. Andre Levret, for instance, is considered one of the most important obstetricians of the eighteenth century while Francois Mauriceau and Hendrik van Deventer have been called the founders of modern obstetrics and gynaecology (Cianfrani, 1960o).

Teaching methods

Dr. Butigieg wrote Italian without any flourishes in a concise, clear style denoting

the presence of an orderly mind. He based his teaching on the practical rather than on the theoretical aspects of his subject. There is, however, no evidence that he gave clinical demonstrations or made use of "machines" or models of the female pelvis as had already been done by William Smellie (1697-1763) in London (Johnstone, 1952d). It is of interest to note, however, in this connection that one such model had been brought to Malta in 1772 by Dr. Giuseppe Antonio Creni, a surgeon in the service of the Order of St. John, from Bologna where he had studied surgery and where clay and wax models of pregnant uteri were being manufactured under the supervision of Giovanni Antonio Galli (1708-82), a lecturer in surgery at the University of that city (Cassar, 1965f; O'Malley, 1970b).

Although no pregnant woman would wish to be treated to-day by the methods and instruments described by Dr. Butigieg no one will object to the maxims he inculcated in his students regarding the psychological management of their patients. Indeed his humane approach reveals a great deal of tact and of tolerance of human foibles and a deep sympathy and concern for women in childbirth.

He was certainly a man of piety and strong religious convictions as the last words of his concluding address to his students amply shows:— "Let us end by offering a thousand and one thanks to the Most High for all the benefits showered upon us not only during the past years but also during this course of lectures; and let us pray that he may deign to be well-disposed towards us in the exercise of our profession for the benefit of pregnant women".

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