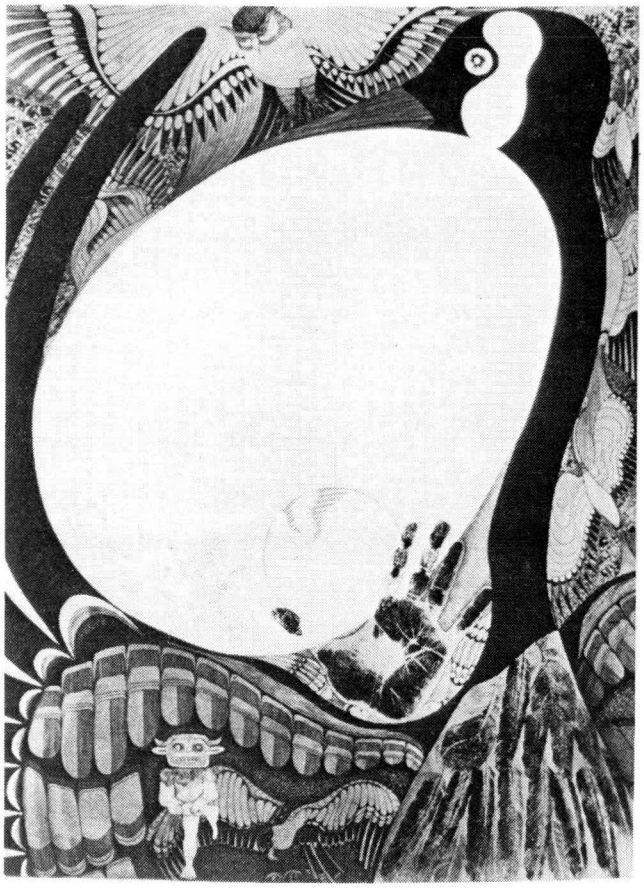

Pnina Granirer, ANGEL EMBRYO, 1976, drawing India Inks and printing inks, (30" x22")

Historical Attitudes Toward Women and Childbirth

by Wendy Mitchinson

ABSTRACT/RESUME

Vers la fin de l'époque victorienne, au Canada, la conception dominante du rôle de la femme était celle de sa place au sein de la famille. C'était la source de beaucoup de conformisme social et d'une certaine stabilité sociale, puisque cette conception exprimait clairement ce qu'on attendait des femmes. Sous-jacent au concept de l'attachement à la famille, reposait à perception que les hommes différaient des femmes et que, en dernière analyse, cette différence était le produit d'une différenciation sexuelle qui la justifiait. C'est pour cette raison que je veux étudier la littérature médicale du dix-neuvième siècle concernant les femmes et leur nature biologique.

Pour nous permettre de nous concentrer sur un sujet abordable, j'ai choisi d'examiner le traitement des femmes en période de grossesse. Bien que la plupart des femmes n'étaient pas sous les soins d'un médecin, l'attitude générale à l'égard de la grossesse était influencée par la profession médicale. Ceci est particulièrement vrai au fur et à mesure que le siècle s'écoule, alors que la profes-

sion médicale augmentait son contrôle sur les connaissances médicales.

Quelques-unes des questions soulevées et examinées dans cette présentation sont les suivantes: Est-ce que la grossesse était perçue comme une fonction naturelle ou était-elle considérée comme une maladie? Quelles étaient les répercussions de chaque point de vue? Quelles connaissances possédaient les membres de la profession médicale à cette époque sur la grossesse? Quelles étaient les moyens de traitement des femmes enceintes? M'intéresant particulièrement sont les relations entre le médecin et sa patiente. En examinant le traitement des femmes enceintes, nous devrions comprendre à quel degré l'attitude envers les femmes se conformait à des stéréotypes et pourquoi il en était ainsi.

Cette présentation pourrait être regardée de deux façons. Etant donné que la maternité était le rôle public des femmes, c'est une analyse de la condition de la femme dans la communauté. Cependant, en examinant les expériences des femmes en relation avec la grossesse et les attitudes qui en découlent, nous nous concentrons sur le coeur même de la vie familiale autour de laquelle tournait le Canada de l'époque victorienne (du moins en principe). Il serait aussi approprié de considérer cette présentation comme une étude du rôle de la femme au sein de la famille.

The study of past attitudes towards women's physical nature and sexuality has been very limited in Canada.(1) This is surprising considering the rapid development of women's history within the last five years and the importance attributed to the physical differences between men and women in both the nineteenth and twentieth centuries. In the nineteenth century feminists and anti-feminists may have debated where the division between sex roles was but for the most part both agreed that there should be one.(2) Inevitably that division was based on the biological differences between men and women, as these were the most obvious and most basic.

By the latter part of the nineteenth century physicians were recognized as the 'experts' on those differences which most Canadians believed dictated separate spheres for each sex. They were not, however, disinterested observers. Medical knowledge is not absolute, it changes with time and often the study of medicine says more about a culture than about science.(3) Certain words in the medical lexicon were as value filled as those outside it. If 'family,''home,' and 'mother' were key words in understanding the private lives of Canadians in the nineteenth century, words such as 'hysteria' 'ovaries' and 'uterus' were equally significant in reflecting medical attitudes towards women. Although physicians based their beliefs on

medical 'facts' they also extrapolated from those facts and the direction they took was more often than not influenced by the mores of their society.

The direction was also influenced by their attempt to increase their own importance to society. Throughout the nineteenth century they had been striving to form themselves into a profession with control over standards and access to practice. By the end of the century they had succeeded. Nevertheless they were constantly aware of pressure from irregular practitioners and others to return to an earlier and more open system of medical practice which had encompassed so many forms of medical treatment and education. In response the regular practitioners attempted to maintain and even expand their influence by speaking out not only on matters of medical health but also social health.(4) This could and did have serious repercussions for women since in the latter half of the nineteenth century science was developing into a significant polarity to religion. However, science and religion were not necessarily opposed. In fact, as will be seen, physicians often rationalized the withholding of medical knowledge on moral or religious grounds as well as on medical.(5) Doctors were, after all, part of society and as a result of their successful attempt to professionalize were becoming prominent spokesmen for the beliefs, medical and non-medical, of that society.

One example was the way in which medical science provided the concept of true womanhood with scientific legitimacy. Physiologists had discerned that woman's brain weighed less than man's.(6) While this suggested inferior capabilities to many, physicians were not content to leave it at that but explained in detail that women were in truth different than men:

> . . . for there can be no doubt that - putting aside the exceptional cases which now and then occur - the <u>intellectual</u> powers of Woman are inferior to those of Man. Her <u>intuitive</u> powers are certainly greater than his; her perceptions are more acute, her apprehensions quicker; and she has a remarkable power of interpreting the feelings of others, which gives to her, not only a much more ready sympathy with them, but that facility in guiding her actions so as to be in accordance with them, which we call <u>tact</u>.(7)

Woman's character balanced man's.(8) This was a basic tenet of late nineteenth-century Canadian society. Medical opinion did not form it, it only reflected it and bolstered it. However, considering that physicians were in a position to impose their beliefs on their patients the influence this gave them was significant.

Studying medical attitudes towards women is fraught with problems. The first is that historians are often untrained in medical terminology. The second is that little critical writing on the medical profession in Canada has been done and so the medical context for such a study is limited. A third difficulty is distinguishing Canadian medical practice from that of the United States, England or Europe. What I have done is to examine Canadian medical journals, and textbooks used in Canadian medical schools.(10) Although much of the material will be non-Canadian in origin, the fact that the Canadian medical profession circulated it and thus implicitly promoted it is an indication of the direction it was heading. In any event many Canadian doctors were trained outside Canada.(11) A fourth difficulty linked with the use of such data is that it is almost impossible to know how influential this literature was. Even the circulation of the various medical journals is unknown.(12) As well, how many women actually consulted physicians? Given the limited number of doctors, in 1871 only 2,792, and the large number of women, 1,721,450, scattered across Canada, the number is probably minimal(13)especially when for most of the century, the tendency was not to consult physicians. However, in the latter decades of the nineteenth century the medical profession was gradually becoming the arbiter of all medical knowledge. If women did not consult physicians personally, the knowledge the latter had and disseminated was nevertheless influential.

This paper will study only two aspects of medical attitudes towards women. The first is the medical view of woman's physiological nature. This section will argue that physicians, by providing a 'scientific' support for the domestic image of women, discouraged higher education for women. Also because they accepted the domestic image of woman they refused her access to birth control information which ultimately cost many women their lives in childbirth. The second aspect examined is the way in which physicians viewed childbirth and treated their patients. This section stresses the way in which medical attitudes supported the importance of and need for an attending physician, and also the way in which new medical technology often brought disadvantages as well as advantages to the patient. Both sections reveal that doctors were strongly influenced by the mores of their society and their own self-interests as members of that society. Beyond certain biological basics there is no single way of giving birth. Each society has its own traditions and procedures. By studying Canadian medical practice we can gain insight into Canadian attitudes towards women.

Childbirth is a good place to begin. Nancy Cott's description of late eighteenth century New England is

applicable to much of Canada in the last half of the nineteenth century. In both countries the separation of place of work and place of residence had brought about the emphasis on woman's domestic role:

> More than ever before. . . the care of children appeared to be mothers' sole work and the work of mothers alone. The expansion of non agricultural occupations drew men and grown children away from the household, abbreviating their presence in the family and their roles in child rearing. Mothers and young children were left in the household together just when educational and religious dicta both newly emphasized the malleability of young minds.(14)

Motherhood was woman's outstanding source of prestige. However, as this role gained in prestige so did the specialty of obstetrics. "The high cultivation of Obstetrics," as the Canada Lancet declared in 1874, "will be held to worthily distinguish the present epoch in medical history."(15) While women were being seen more and more in their maternal role, men were taking over the management of the birth process. The role division between the sexes so prevalent in other areas of society had even touched what was closest to woman, childbirth.

(i)

The most obvious place to begin the study of late nineteenth century treatment of childbirth is the medical knowledge of the female reproductive system. What did it mean to be a woman? The clearest demonstration to physicians was the menstrual cycle, the central fact of puberty. In keeping with a century which esteemed the scientific, medical texts abounded with carefully gathered statistics to determine at what age menstruation was most likely to begin. After much study, the consensus was that it began between the ages of 13 and 16.(16) By studying women all over the world and keeping detailed records, textbooks also concluded that certain conditions would bring about earlier menstruation in women: warm climate, luxurious living, early stimulation of mental faculties and premature sexual stimulus. It also apparently occurred earlier in women living in towns and in brunettes as opposed to blondes.(17) Physicians generally had no explanation to account for the above phenomena but continued to present their findings.

Such findings were harmless enough and appealed to the desire to quantify which was becoming an important part of scientific inquiry in the late nineteenth century. However, physicians were not content to simply measure. They pursued their investigations into a realm that was open to value judgments, namely the emotional effects of menstruation on women. In their descriptions cultural expectations for women were revealed:

> The most noticeable feature of

> this transition may be the development of self-consciousness; as the young girl becomes conscious of sex differences she is apt to develop a shyness toward members of the opposite sex not noted in very early life. However, the most important psychological change is the shifting of the emphasis from a self-centered one to a consideration of others. It's the successful accomplishment of this transition which assures a normal, well adjusted adult [female] both sexually and socially.(18)

The physiological function of menstruation brought about not only the physical differences between men and women but the emotional and psychological differences as well. Society did not impose the service role on woman. According to medical opinion woman's own body did so. A woman's struggle to expand her activities in society would, according to such beliefs, fly in the face of her very physical being and thus be doomed to failure. The comfort such beliefs gave to the status quo need not be stressed.

Why was menstruation seen as such a disturbing phenomenon? Did it really disrupt a woman's life? In theory it did not have to. The Canadian Practitioner, in 1884, suggested that "menstruation should be performed without pain."(19) Yet despite the recognition that it was a normal physiological function, physicians tended to be cautious and stressed the need for prudence, encouraging women, particularly the middle class women who were their patients, to think of themselves as fragile during this time.(20) They seemed to feel that many women did experience extreme discomfort. In 1877 the Canada Medical and Surgical Journal reported a study done in the United States where 1000 circulars were sent out to women asking about their experience during menstruation. Of the 268 women who replied only 35% claimed they were free of discomfort.(21) Of course we cannot accept this as proof since we do not know the sample that was used but it is at least tenuous corroboration of the medical viewpoint. If true, one of the contributing causes could have been the tendency of many upper class women to wear tight corsets which placed undue pressure on the reproductive system, perhaps resulting in painful menstruation.(22) Whatever the reason and whether fact or fantasy, physicians believed many women were uncomfortable during menstruation, especially in the early years and advised mothers to "secure rest and quiet" for their daughters. One textbook even advised bed rest for several days each month.(23)

One reason why physicians in the past tended to make conclusions which today's society would find unwarranted is, of course, the value system of their society. In suggesting that women needed rest each month physicians were not suggesting anything which the rhetoric of domesticity would find surprising.

They were, in fact, supporting the dominant view of woman as being more fragile than man, overlooking the fact that this same fragile creature could undergo and survive the trauma and pain of childbirth. Another reason to explain their belief in the fragility of women was the limitation of knowledge. Physicians did not really understand the physiology of menstruation.(24) Not until 1832 was the human ovum discovered and even after that the precise cause of menstruation was not clear. One physician even suggested that menstruation had not existed in earlier times but that it was a pathological condition which "has become a fixed habit of the female sex in consequence of the vitiating influence of civilization."(25) The result was that speculation occurred and often comparisons made with the animal kingdom were not always complementary to women. "The Function of Menstruation" as the Montreal Medical Journal explained it, "is surely one of the most remarkable in the animal economy. . . . It is confined to the human female and certain monkeys."(26) Menstruation was also compared to the rut in animals.(27) The implication certainly was that women were lower on the evolutionary scale than men.

By making such statements physicians were enhancing their own prestige. In this specific instance their opinion bolstered conventional wisdom and thus they were listened to. They had become society's spokesman. This could not help but carry over when they gave their opinion on other issues perhaps even less connected to medical health than this one. Doctors certainly did not limit their statements to what they felt they knew about the physiological functioning of the female body. Indeed, they spoke out about the implications of that functioning for woman's role in life. Physicians' beliefs about the physical nature of women, especially the reproductive process, led them to discourage higher education for women and refuse women birth control information. The former would limit the sphere of woman, the latter would, by encouraging women to have children, keep them in the sphere considered appropriate to their nature.

(ii)

Physicians had control over information concerning the body and were not about to share it. One textbook explained that while girls should be taught hygiene they should not be taught anatomy and physiology, "A little learning in anatomy and physiology is truly a dangerous thing."(28) The author feared that knowledge about the female body would only focus women's attention on it and lead to hypochondria and eventual ill health.(29) Knowledge would also allow women to judge the quality of the treatment they received.

Because many doctors believed they were

the ultimate source of information on the female body they tended to pontificate on subjects which were only tangential to medicine. One was the desire of women to further their education:

> Once bring men and women into keen competition for bread, for place, for honors, for power, and you break down the barriers Nature has set up, and tend to destroy those differences which she has taken eons to form.(30)

What is interesting about the above quotation is not its sentiment--many nineteenth century Canadians disapproved of higher education for women--but the biological evolutionary rationale behind it and the overview of human development which it reflected.

Physicians believed that men and women were basically equal until puberty:

> After puberty woman does not keep pace with the companion of her youth in this regard; her mental growth becomes slower and more limited. After the menopause there is an apparent tendency to become in her mental qualities more like the male.(31)

After puberty the reproductive function dominated woman. Physicians felt men and women should be educated differently and were aghast that North Americans emphasized education for both sexes to the degree they did.(32) Doing so, weakened the nervous system and led to precocity in children. This tendency was particularly dangerous for young women during the early years of puberty. Women must allow their bodies to develop and prepare for the maternal function; this they could not do if they were kept studying all day.(33)

> Education has great influence in the development of gynecological diseases. Too great assiduity in study in early youth concentrates the nerve-energy on the brain, and deprives the uterus and ovaries of their share at a time when these organs are undergoing an enormous development, and preparing for the important functions of womanhood and motherhood.(34)

If women did not get the rest they needed, dire results would follow: disease, feebleness of the muscular system, dysmenorrhoea (painful menstruation) and even sterility.(35) Such arguments were taken up by the opponents of higher education for women.

Many physicians believed that young women could not do mental work and develop their bodies at the same time. This did not mean, however, that physicians were against education for women. On the contrary, many supported training for women but the training they envisioned was of a domestic nature. "Too much brain work, too little housework, is another crying evil of our land," exclaimed William Goodell in Lessons in Gynecology.(36) The dominating social role of woman and

medical theory conveniently went hand in hand. People generally believed what they wanted to. In the case of physicians it can be argued that they saw and approved of woman's social role and thus argued backwards from that to her physical nature instead of looking at the pure physical being and arguing to the social role. However, considering that social role obviously has some bearing on physical health, in the specific case of women in the clothes they wore and the environment they lived in, the deductions physicians were making may not have been unreasonable. Social context and physical health are not separate. Each affects the other. We cannot assume that the women of the nineteenth century enjoyed our standard of health. Neither can we assume that the 'scientific' arguments put forward by physicians to limit woman's sphere were not strong rationalizations for the status quo.

In many respects doctors' attitudes towards higher education for women were influenced by their own vested interests. The opposition to higher education for women would be of benefit to those physicians already practicing. Women physicians, after all, would be competition for them. In the 1880s, when several medical schools had opened their doors to women, the Canada Medical Record stressed the desirability of controlling the number of medical graduates so that all practitioners could be assured a decent living.(37) When it became clear that it was going to be impossible to prevent women from studying, many physicians believed these new doctors should be restricted in their practice. Again it was the Canada Medical Record which argued that women should limit themselves to the easier aspects of medical practice.(38) In fact, it suggested that they take over midwifery and care of the poor, since male doctors were not particularly interested in those areas as there was not enough money in it.(39) One of the reasons given for letting women take over midwifery among the poor was that it would eliminate the untrained midwives that so many women in childbirth used. Eliminating these women had long been an ambition of the regular doctors. They provided competition and also undermined the prestige of the profession by offering a medical service without training. Replacing them with qualified female physicians would further extend the profession's control over an area it had yet to dominate.(40)

(iii)

A second area of particular concern to women which the profession felt it should control was contraception. Many Canadians wanted to limit the size of their families. This was reflected most vividly in the declining birth rate in Canada, especially in the cities. While some medical journals felt the decline was due to the disin-

clination of men to marry as a result of the pressures of modern society,(41) most believed it was a result of birth control. If true, Canadians received little help from the medical profession since most doctors refused to provide information on any effective means of contraception.

William Goodell, in Lessons in Gynecology, mentioned that husbands and wives were constantly beseeching physicians for means to prevent pregnancy but that physicians must morally refuse.(42) Others agreed, arguing that contraception made marriage a form of prostitution, cheapened sex and dulled sexual enjoyment and so led to unfaithfulness. Still others kept to the supposed medical repercussions: nervous disease, insomnia, insanity and impotence.(43) The practical consequences of these beliefs and attitudes could be cruel. In the Goodell text, physicians were told that the author refused to treat a woman with uterine troubles until her husband gave up the practice of coitus interruptus to prevent childbirth.(44) The physician's actions were depicted as worthy of emulation.

The refusal of physicians to countenance contraception was not simply a medical decision but also a social one. Of major concern to many doctors was the fact that contraception was being practiced by the "better classes."(45) These were, of course, the women whom the physicians were treating and the ones on whom they depended for their livelihood. Doctors accused women of limiting their families for selfish reasons; that is, to maintain their figures and so they could go out in society.(46) Another indication that the disapproval of contraception was social and not totally medical was the fact that the medical profession believed it knew of a harmless means of contraception for patients for whom pregnancy would be dangerous.(47) If it could recommend it for these patients with no ill effects, why would it not recommend it to others?

The answer lies in the wider context of society. In late nineteenth century Canada, woman's role was seen as that of mother. Industrialization had brought with it the separation of place of work and place of residence. As a result, woman's place was the private sphere, the home; man's the public sphere, the workplace. It was felt that each balanced the other in a healthy society. Contraception was a denial of woman's highest function and a denial of that balance.(48) If women rejected their maternal role and as a consequence their focus on the home, society was deemed the sufferer. Physicians, as caretakers of physical health, easily extended their concern to social health and thus the refusal to provide contraceptive devices may have been seen by them as a protection

of society itself.

The only contraception physicians were willing to suggest for the healthy was the rhythm method.(49) There was only one problem with this method. Medical scientists in the nineteenth century understood so little about the reproductive cycle that they believed a woman woman's most fertile period was the exact opposite to when it was. Textbook after textbook declared "there is a greater aptitude for Conception, immediately before and after that epoch [menstruation] than there is at any intermediate period."(50) The rhythm method would not only have been useless as a means of contraception but an actual inducement of pregnancy. As a result of the medical stance, women were left to what knowledge they could gain through word of mouth or forced to resort to the more dangerous practice of abortion.

Many women seemed willing to do so. In 1870, the Canada Health Journal referred to abortion as "The Great Crime of the Age."(51) Certainly the medical profession feared the number of abortions was increasing. There was the occasional mention of abortion trials but since prosecution seldom occurred unless the woman died the number of such trials was limited. However, the profession had other indicators. According to the Canada Lancet, physicians were constantly being asked to perform abortions. One doctor in Windsor and Essex County, for example, estimated that he had had fifty requests in one year.(52) Medical journals also mentioned the frequency of newspaper advertisements of abortifacients such as Clarke's Female Pills and Hooper's Female Pills, which blatantly warned about the danger of their use by pregnant women.(53)

Physicians were bitterly opposed to such means. "Better never read a paper, if it were necessary, than to risk the introduction of a serpent into the bosom of their family."(54) The medical profession argued that the foetus was alive as soon as it was conceived, and so abortion was a crime against life and therefore against God. This moral judgment affected medical treatment for the hatred of abortion was such that it sometimes placed a patient's life in danger. One article in the Canada Lancet discussed the advantages and disadvantages of the particular treatment of a pregnant woman who had a history of foetal craniotomies due to a pelvic deformity. Rather than abort the child, the decision was taken to perform a Caesarian Section which, in 1875, was almost tantamount to a death sentence for the woman.(56)

Physicians felt threatened by abortions. Certainly they were an attempt on the part of women to control their own bodies and thus a challenge to the medical profession. As previously

mentioned, many physicians did not want women to understand their own bodies, let alone control them. As well physicians felt vulnerable. If they refused to perform an abortion they feared they would be accused by the patient of doing so anyway in a spirit of revenge.(57) This fear could only be rational if the doctors recognized the determination of their women patients to have abortions and admitted that from the patient's point of view the medical profession was working for the status quo and against women in refusing abortions.

To overcome the problem of not being seen to respond to the needs of the patient, medical journals described in detail the possible consequences of abortion: ill health, sterility or inability to carry a child full term.(58) Certainly many of these consequences were possible. As well, prior to the 1880s, surgical abortion, in the best of hands, carried a far higher risk of mortality than childbirth.(59) These medical rationales provided recognition that the physician knew better than the patient what was good for her. As a result the physician could see himself in a paternal role. This was part of the whole "mystique" which was beginning to surround the medical profession in these years. It must be remembered that from the early decades of the nineteenth century "regular" physicians had been attempting to have themselves recognized as a profession with complete control over standards, access to medical information and practice. Originally this was to eliminate the numerous irregular practitioners(60) but this desire for exclusivity also influenced the relationship between physician and patient.

By the end of the century, physicians were in a position of power with respect to their patients. Understandably this power came from their access to medical knowledge. However, many physicians desired to exert their influence in non-medical areas. For example, one physician in the Canada Lancet, in 1875, stated that abortion was practised more among Protestants than Catholics, and cited the influence of the priests in the confessional as the main deterrent for Catholics. This physician felt the medical profession should fill the moral void in society and impress upon women, like the priest in the confessional, that abortion was murder.(61) As in the case of contraception, the transition on the part of the doctor was being made from medical judge to moral judge.

The attitudes of physicians to contraception and abortion were motivated by three forces. Practitioners were protecting their vested interests as men and as professionals but, as well, they were trying to protect their patients. Doctors did not question society's attitudes towards women be-

cause they were not really forced to and for most Canadians woman's maternal role was a fact of life that was immutable. As professionals, physicians wanted to protect themselves in their exclusivity. This they had managed to do by controlling access to the increasing wealth of medical technology and theory. Because they alone had access to this information they could only logically believe that they knew best for their patient. One result was increasing medical interference in childbirth.

(iv)

Physicians clearly believed respectably married women should have children. Children were a "needful condition to healthy and happy marriages."(62) So convinced were some physicians that the maternal role was natural to women that they advocated marriage and motherhood as cures for uterine disease.(63)

If physicians believed women should have children, they also rather conveniently believed women in the civilized society of the late nineteenth century needed medical assistance in giving birth to those children. Physicians rationalized the emergence of the man midwife in the same way men rationalized their control over other areas of economic endeavour. They had the expertise and, according to physicians, this medical expertise was increasingly needed in the management of childbirth. The term "management" itself suggests an attempt to control or widen their power. They announced loudly and clearly--women were no longer fit to have babies without aid. Ironically the civilization which had raised women to new moral heights as mothers had weakened them physically. Medical practitioners were generous enough to admit that this weakness in woman was not inherent but learned. Nevertheless, the customs of civilized life had undermined her: the lack of outdoor exercise, overwork of the brain, her manner of dress, imprudence during menstruation and after parturition, prevention of conception and inducement of abortion, insufficient food and habitual constipation.(64)

In the Canada Medical Record of 1889, one article went into a lenghty explanation of the way in which men and women were evolving and how this was affecting the birth process.(65) First the sexual feeling in women was dying out through the pressure of social constraints on women to repress their feelings. This in itself was not a bad occurrence, for sexual feeling in a woman was not necessary for propagation and "the women who have no such feelings are perhaps the best off." However, as the feeling declined in women, it correspondingly increased in men. Reproduction for a man was an active process and only men with strong sexual feelings had children. Social darwinism was put forward:

> For, owing to the keeness of the

> struggle for existence, in greater part due to extravagance, no man will enter into the expense and responsibilities of matrimony unless compelled to do so by the force of his sexual feelings.

At this point the logic of the argument tends to dissipate. Since only men with strong sexual feelings have children, the author concluded that their sons would inherit this same sexual drive. Men with weak sexual desires would not have children. The result would be a society in which men had increasingly strong sexual drives. Survival of the fittest (or in this case the sexiest) would hold sway. Interestingly enough daughters did not inherit their father's sexual inclinations but rather their mother's. Thus the future envisioned was of virile men and sexually passive women.

Yet this still does not account for the need for interference in childbirth. However, at the same time this development was occurring, the pelves of women were getting smaller and the heads of male children were becoming larger (due to the importance of brain power in modern nineteenth century life). "While nature if left to herself would exterminate at their birth these big-headed men who are able to amass so much wealth, civilization comes to their rescue and saves them." The rescue, of course, came in the guise of the specialist, the obstetrician. While the author does not condone such interference, in fact he suggested removing the uterus of such women to stop the breeding of such men. The majority of physicians clearly were the beneficiaries of the theory since it meant that the demand for their services would increase.(66) It provided them with the rationale to interfere in what had long been women's "business." That they wanted to was obvious. Their general attitude towards midwives was that they belonged to some by-gone era. However, medical men with training, and most significantly technology, were now taking over. It was their control of technology which gave them an edge over midwives for only medical practitioners were trained in the use of forceps, speculum, sounds, curettes and the myriad of other instruments which made up the arsenal of the nineteenth century obstetrician.(67) This gave them the wherewithal to interfere in childbirth more than any midwife would dare. The instrumental interference separated them from midwives.

Yet at times physicians seemed ambivalent. Although they benefited from their belief that civilization was rendering women less capable of giving birth without assistance, they also seemed to yearn back to a time when women were more capable of having children naturally. It was their mission, they believed, to rectify the situation, to make women healthy so they could have children.(68) It was

their goal to restore women to their proper function. This they tried to do by making childbirth easier and safer.

They would first meet their patients to diagnose pregnancy. In the very early part of the century one lecturer suggested that since examining a woman internally for pregnancy was disagreeable to modest ladies it should be done in their own homes with their 'servants' about them.(69) This is perhaps indicative of the class of women who actually consulted a doctor about pregnancy. By the latter decades of the century the preferred practice, according to medical texts, was attendance in a doctor's office, a possible reflection of the increasing stature of the medical profession.

The signs of pregnancy were seen to be more or less what they are today although myths did abound. Of these one author of a textbook gave "greater importance to the more voluptuous sensation, the more erethism experienced by some females during a prolific coition, by which a few of them can recognize with a degree of certainty that they have become pregnant."(70) This belief survived well into the century.(71)

Once the diagnosis of pregnancy was confirmed there seemed to be little if any followup during pregnancy unless there were complications. Most physicians did not see their patients again until they actually went into labour. When this occurred the physician was sent for. Few babies were born in hospitals but rather at home. In the mid part of the century this meant that during labour the patient was often surrounded by her friends and neighbours, a practice not always approved of by the medical fraternity. Indeed one physician questioned whether these onlookers were really interested in the welfare of the patient or simply were curious about "whether the patient was to die or live."(72) After mid-century very seldom were such gatherings mentioned in the medical journals of the day. The birth process had become something between patient and physician, something private. This too reflects the increasing stature of the medical practitioner and his/her gradual control over the birth process.

Some practices in the early years suggest a more relaxed attitude towards birth than later became the case. One text advised that a doctor should be sensitive to whom a pregnant woman wanted in the room with her; i.e. some women wanted their husbands while others did not.(73) Several texts mentioned allowing the woman to take whatever position felt comfortable during birth.(74) For most physicians, however, the position was dictated by where they had been trained, if in England the woman would be lying on her left side, if in France, Germany or

America she would be placed on her back.

Other practices in the early period make the modern reader wonder what purpose the presence of a physician served. The most prevalent of these was the idea that the physician should not view the body of the patient but rather have the patient covered at all times. If birth was to be assisted it was to be done by touch. In fact the concept of demonstrative midwifery in mid-century was a highly contentious issue.(75) This was a time when men were just coming into use as midwives in Canada and the morality of men in the birth chamber was widely debated. Most women probably gave birth on their own, with the help of friends or a female midwife. However, when something went wrong in labour the tendency was to call in a physician.(76)

The main problem in childbirth which would necessitate medical intervention was an abnormal presentation, that is a non-head presentation. In such cases the physician had three choices: podalic version, the turning of the child for correct presentation, that is, a foot presentation;(or use of forceps) a cutting operation on either the mother or child. All three had been developed by the mid-eighteenth century and were used well into the nineteenth.(77) Not until the era of antiseptics and anaesthetics was there a major change in treatment eliminating one of the above methods, namely the cutting operation on the child, and accentuating another, the use of forceps.

The most extreme intervention was the cutting operation. When the child was too large or the mother unable to give birth safely physicians frequently were forced to choose between the life of the child and that of the mother. Almost all protestant doctors agreed that the life of the mother had priority.(78) The result was to "divide (the child) in pieces" so that delivery could be accomplished safely for the mother.(79) One of the reasons such operations were resorted to was the cutting operations on the mother in an attempt to save both mother and child were extremely risky. Nevertheless they were performed.

Symphysiotomy consisted of enlarging the pelvis (usually deformed) so that a natural delivery could occur. To do so the union between the two pubic bones was divided and the bones pushed forcibly outwards so as to increase the capacity of the contracted pelvis.(80) However, it was seldom performed because it could leave the patient a permanent cripple. In 1893 only three cases in Canada had ever been performed.(81)

The laparotomy consisted of delivering a baby which had escaped the uterus through a rent by cutting the abdominal wall.(82) Given the lack of antisep-

tics until the 1870s, this operation (as did all operations) had a high maternal mortality rate. For a similar reason Caesarian section was also dangerous. In the United States, between 1876 and 1886 in 37 operations performed, 29 women died.(83) One text suggested that the Caesarian section be used only as a last resort and only to save the life of the child.(84) With antiseptics, however, such operations were much safer and soon replaced the cutting operations on the child.

Women faced other dangers in childbirth as well. Until the introduction of antiseptics in the 1870s, puerperal fever was a major killer with many a doctor carrying death from one patient to another. Especially bad were hospitals, some of which, like the Toronto General in mid-century, were noted for their uncleanliness.(85)

At the very least childbirth in the late nineteenth century could be extremely uncomfortable. Bleeding the patient was still fairly prevalent at mid-century. The Upper Canada Journal of Medical, Surgical and Physical Sciences reported one woman being bled of 30 ounces of blood to bring her out of puerperal convulsions.(86) Some physicians inserted vinegar into the uterus to stop post-partum haemorrhage(87)while another favoured treatment was the use of electricity. One pole of the galvanic current was placed in the uterus while the other was placed over the abdomen. The result was a powerful contraction of the uterus which would (it was hoped) stop haemorrhage.(88)

It would be easy to criticize the medical profession for some of its treatment of women in childbirth.(89) But such criticisms would come from hindsight and do not really provide insight into the dynamics of change within the profession. What does give insight is a closer examination of some of the advances made, the attitude of physicians to them and the way in which they effected treatment, sometimes for the worse. The three examined are antiseptics, anaesthesia and forceps.

Not everyone was willing to accept antiseptics when first introduced in the 1870s. As late as 1885 one physician in Montreal was still ridiculing their use:

> I think we might recognize a momentum in antiseptic theories - a momentum that seems to be carrying us into irrational and absurd practices, that after a time we shall be compelled to give up, but not without the loss of prestige and influence with the public. According to the present rate of progression we shall soon, when called upon to attend a case of midwifery be compelled to retire

> to our bath-rooms, wash and scrub in disinfectant solutions, don a fresh suit of disinfectant clothes, and, like the Romish priests, when called to administer the communion at a person's residence, we shall go forth, preceded by couriers to clear the way and open doors, etc., etc., not daring to touch even a door bell knob, lest, possibly, an unclean mendicant has first handled and defiled it.(90)

A better description of modern surgery could not be found. Fortunately for patients, if the evidence of the medical journals is to be believed, most Canadian doctors accepted antiseptics gratefully.

Anaesthesia in labour too was generally adopted, its first use being as early as 1848.(91) However, some physicians were uneasy about the effect it would have on women's moral wellbeing. The American specialist Meigs opposed it, considering the pain of childbirth to be "a desirable, salutary, and conservative manifestation of life force."(92) Tyler Smith in his major text, Parturition and the Principles and Practice of Obstetrics, argued that pain was a natural part of childbirth and referred to the morality of that pain. Without it he feared woman would descend to the level of the lower animals and substitute for it, sexual orgasm:

> Provident Nature has, moreover, specially exempted women from the dominion of all passion save that of maternity at the time of childbirth. I believe this exemption and moral superiority arises, in a very great degree, from the physical suffering of parturition. The natural throes deliver womankind from those emotions natural to the inferior animals. Here it is that we see more clearly than under any other circumstances, the morality of pain. . . . The pains of natural labour are hard to bear, . . . but they ennoble the sufferer morally.(93)

Most physicians, however, did not seem to share this fear and given the cutting operations which did occur during this period patients must have been thankful for it. However, the opinions expressed by Meigs and Smith do underline the concern of physicians for more than medical wellbeing and show how willing some were to make judgments in areas outside their expertise. Such judgments were clearly influenced by society's attitude towards women at that time and the desire of physicians to to become spokesmen for their society and extend their influence to areas non-medical.

While most of us probably see antiseptics and anaesthesia as beneficial, they did make it easier for physicians to resort to surgery. If in many cases this was justified, in others it was deemed to be by at least one physician a desire on the part of his colleagues to gain a reputation.(94) Antiseptics

and anaesthesia allowed physicians to interfere more in natural processes because they could do so more safely than before.

Whether they should do so in childbirth was a major controversy in the last half of the nineteenth century. The centre of the storm was the use or overuse of forceps. The controversy went in cycles. In the 1850s there was great concern over "meddlesome midwifery"(95)with the result that many women were left in labour for hours without interference of any kind.(96) Reacting to this situation many physicians increased their use of forceps so that by the 1880s and 1890s, the concern was once again too much interference. Opponents of "meddlesome midwifery" argued that childbirth was a natural physiological function which needed no outside assistance unless there were complications. Physicians were not to try and improve upon nature.(97) Those who did could come in for some scathing attacks. One physician denounced "meddlesome midwifery" by declaring "The forceps are sometimes used to save time, sometimes to gain a little notoriety, sometimes for the double fee, and sometimes from ignorance."(98)

Ironically the medical profession itself may have been partially responsible for the interference. Reading the medical journals of the time, one would conclude that childbirth was a difficult process which required the mechanical aid of an expert. This, of course, reflected the tendency of physicians to write papers on their more difficult cases. Unfortunately this could not help but influence the inexperienced practitioner who read these journals. Little guidance was given to them. No one seemed to know how often forceps were used in practice or should be used. In 1877, one physician reported using forceps in one out of every twenty-seven cases while another reported using them as often as one in thirteen.(99) Unfortunately in the hands of the 'amateur' the use of forceps could be tragic. In the Canada Medical Record of 1898, one article suggested that many of the cases needing gynecological care and even surgery were the result of poor childbed treatment, specifically the overuse of forceps.(100)

The meddlesome midwifery opponents did not condemn forceps out of hand. Forceps were an important tool which would and did save the lives of women. What they objected to was the use of forceps becoming a standard medical procedure in cases which did not warrant it. They objected to it becoming fashionable and to physicians treating it as a child does a new toy, playing only with it until he tires of it or something else takes its place. But medical science seemed to work like that. Each advance in treatment seemed

to bring with it disadvantages and it took time for the medical profession to work out an acceptable compromise. In the case of forceps it was the advent of the lifesaving anaesthesia and antiseptics which lessened the pain and danger of medical interference in childbirth and to a certain extent were responsible for meddlesome midwifery.

(vi)

Childbirth was a fact of life for most married women in late nineteenth century Canada. While many if not most of these women were not treated by physicians the knowledge held by the profession did dictate the way in which they were cared for. Childbirth was something experienced only by women yet in the nineteenth century it was increasingly managed by men. Most of these physicians were hardworking, caring individuals. However, they were a product of their time. They believed women were controlled by their reproductive function and, while this made woman special, it also made her, from the physicians' viewpoint, inferior to man. This could not help but be reflected in their treatment of women. The medical profession withheld contraceptive knowledge from them and provided opponents of higher education for women with arguments. The rationale for both was the need to protect woman's reproductive system. The consequence of both was to limit woman's control over her own life and to extend the influence of the medical profession into areas where the barriers between medical issue and non-medical issue were to say the least hazy. Even when advances such as antiseptics and anaesthesia in medicine occurred to help women in childbirth they were often accompanied by disadvantages; for example, the overuse of forceps leading to meddlesome midwifery. This could be dangerous since as the century advanced women increasingly consulted physicians for childbirth. Childbearing was considered the pre-eminent function of woman by the medical profession. Without it they were less than a woman. Because of it they were less than a man.

NOTES

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1. Michael Bliss in "Pure Books on Avoided Subjects," C.H.A. Historical Papers 1970 made an appeal for such a study.

2. Rosalind Rosenberg, "In Search of Woman's Nature," Feminist Studies Vol. 3 (½) Fall 1975, p. 142.

3. Ann Wood, "The Fashionable Diseases," Journal of Interdisciplinary History 4 (1) Summer 1973, p. 25; P. Bart, "Social Structure and Vocabularies of Discomfort," in C. Edgley, ed., Life as Theatre: A Dramaturgical Source Book (Chicago: Aldine, 1975), p. 192; William Tyler Smith, Parturition and the Principles and Practice of Obstetrics (Philadelphia, 1849), p. 19.

4. I would like to thank Professor Jean-Claude Guédon for suggesting the above point.

5. Some doctors did not even need moral reasons. In one manuscript entitled "Lectures on the Theory and Practice of Midwifery" by J. Lowder, the author felt that in the birth of twins, the doctor shouldn't even inform the patient until the second was already born. Special Collections, Tupper Medical Library, Dalhousie University.

6. Alexander Skene, Medical Gynecology; a treatise on the diseases of women from the standpoint of the physician (N.Y. 1895), p. 72.

7. William Carpenter, Principles of Human Physiology (London, 1869), 911-912; Skene, op. cit., p. 80.

8. Skene, op. cit., pp. 76-77. For an intensive look at how important this balance between the sexes was in nineteenth century society see Nancy Cott, The Bonds of Womanhood (New Haven: Yale University Press, 1977).

9. Elizabeth Gobbs, "Professionalization of Canadian Medicine, 1850-1970," C.H.A. Historical Papers 1978 unpublished paper; William Canniff, The Medical Profession in Upper Canada 1783-1850 (Toronto, 1894); W.B. Howell, Medicine in Canada (N.Y., 1933); John J. Heagerty, Four Centuries of Medical History in Canada and a Sketch of the Medical History of Newfoundland (Toronto, 1928); Hugh MacDermot, One Hundred Years of Medicine in Canada, 1867-1967 (Toronto, 1967). Most of the above are very narrative with little attempt made to provide a social context.

10. I only looked at the English language journals and texts because France and England had two different medical traditions and it would have complicated this preliminary work to have attempted to cope with both.

11. This was especially true in the Maritimes. Kenneth Mackenzie, "A Century of Medicine in Nova Scotia," Nova Scotia Medical Bulletin, 32, 1953, p. 290.

12. C. Roland, "Ontario Medical Periodicals," C.H.A. Historical Papers 1978, unpublished, p. 2.

13. Census of Canada, 1871, Vol. 1, 341, p. 31.

14. Nancy Cott, The Bonds of Womanhood (New Haven: Yale University Press, 1977), p. 46; Ann Douglas, The Feminization of American Culture (New York: Knopf, 1977), p. 75.

15. Canada Lancet, Vol. 7 (Oct. 1874), p. 57.

16. Henry Garriques, A text-book of the diseases of women (Philadelphia, 1894), p. 114; Carpenter, op. cit., pp. 832-833; William Tyler Smith, The Modern Practice of Midwifery: A Course of Lectures on Obstetrics (New York, 1858), p. 86.

17. Alfred Galabin, A Manual of Midwifery (Philadelphia, 1886), p. 53; Arthur Edis, Diseases of Women: A Manual for Students and Practitioners (Philadelphia, 1882), p. 133.

18. Edmund R. Novak and Emil Novak, Novak's Textbook of Gynecology (Baltimore: Williams and Wilkins, 1965), p. 82; Tyler Smith, Parturition. . . , op. cit., p. 89; Galabin, op. cit., p. 53; Tyler Smith, A Course of Lectures, op. cit., p. 89; Theophilus Parvin, The Science and art of obstetrics (Philadelphia, 1885), p. 90; P. Cazeaux, Theoretical and Practical Treatise on Midwifery (Philadelphia, 1837), p. 103.

19. Canadian Practitioner, Dec. 1884, p. 361.

20. Paul Mundé, A Practical treatise on the diseases of Women (Philadelphia, 1891), p. 40; John Thorburn, A practical treatise of the diseases of women (London, 1885), pp. 96-97.

21. Canada Medical and Surgical Journal, July 1877, p. 22.

22. The clothing women wore was of concern to the medical profession. See Charles Penrose, A text-book of diseases of women (Philadelphia, 1905, 5th edition), p. 19; Alexander Skene, Medical Gynaecology (New York, 1895), pp. 12-14; William Goodell, Lessons in Gynecology (Philadelphia, 1890), p. 548; Canada Medical Record (Dec. 1888), pp. 69-70; Theodore Thomas, A practical treatise on the Diseases of Women (Philadelphia, 1868), pp. 56-57.

23. John Baldy, An American Text-book of Gynecology (New York, 1844), p. 97.

24. Richard Leonardo, History of Gynecology (New York: Froben, 1944), p. 255.

25. Paul Mundé, "Quarterly Report of Obstetrics and Diseases of Women and Children," American Journal of Obstetrics and Diseases of Women and Children, 1875, p. 353.

26. The Montreal Medical Journal XXV/9 (March 1897), p. 681.

27. Garriques, op. cit., p. 115.

28. Skene, op. cit., pp. 33-34.

29. Ibid.

30. Canada Medical and Surgical Journal, Oct. 1887, p. 185.

31. Skene, op. cit., p. 80.

32. Dominion Medical Monthly and Ontario Medical Journal, Sept., 1893, p. 68; The Sanitary Journal, VI (1874), p. 56.

33. Canadian Practitioner, June 1891, p. 261; Canada Lancet, VI/7 (March, 1874), p. 233.

34. Garriques, op. cit., p. 125; Canada Medical Record, VII, Sept. 1879, p. 319.

35. Canada Lancet, VI/7 (March 1874), p. 233; Montreal Medical Journal XXV (March 1897), p. 682; Mundé, op. cit., p. 37; The Sanitary Journal, 1 (1874), p. 56.

36. William Goodell, Lessons in Gynaecology (Philadelphia, 1890), p. 549; Skene, op. cit., p. 33.

37. Canada Medical Record, July 1888, p. 239.

38. Ibid., p. 238.

39. Ibid., VIII (June 1890), p. 215.

40. The medical profession only dominated childbirth among the middle class; i.e., the class who could afford their services.

41. Canada Lancet, Nov. 1894, p. 98. Unless Canadians were unlike other people the birth control alternative is the most obvious. See Linda Gordon, Woman's Body, Woman's Right: A Social History of Birth Control in America (New York: Viking Press, 1976); Patricia Knight "Women and Abortion in Victorian and Edwardian England," History Workshop 4 (August 1977), pp. 57-69. Angus McLaren "Women's Work and Regulation of Family Size," History Workshop 4 (August, 1977), pp. 70-81.

42. Goodell, op. cit., p. 562.

43. Kingston Medical Quarterly III/1 (October 1898), p. 165; Goodell, op. cit., p. 573; p. 570; Canada Medical Journal and Monthly Record, 3 (1867), p. 226, p. 228; Canadian Practitioner, 18 (April 1883), p. 296.

44. Goodell, op. cit., p. 566.

45. Paul Mundé (ed.) A Practical treatise on the diseases of women (Philadelphia,1891), p. 43; Canada Health Journal, I/5 (May 1870), p. 66.

46. Canada Lancet IV/4 (Dec. 1871) pp. 185-86; Canada Health Journal I/5 (May 1870), p. 67.

47. Canada Lancet, 25 (July 1893).

48. Kingston Medical Quarterly II (Oct. 1898), p. 165.

48. Kingston Medical Quarterly III/1 (Oct. 1898), p. 165.

49. Canada Medical Record, June 1889, p. 194.

50. William Carpenter, Principles of Human Physiology (Philadelphia, 1847), p. 834; P. Cazeaux, Theoretical and Practical Treatise on Midwifery (Philadelphia, 1837), p. 123; Canadian Practitioner, April 1884, p. 115; Garriques, op. cit., p. 117.

51. Canada Health Journal, I/5 (May 1870), p. 65.

52. Canada Medical and Surgical Journal, 12 (1884), p. 252; Provincial Medical Journal (May 1868), pp. 13-16; Canada Lancet, 7 (June 1875), p. 291.

53. Canada Lancet, IV/4 (Dec. 1871), pp. 185-86; Canada Health Journal, I/5 (May 1870), p. 66.

54. Medical Chronicle, (1856), p. 35.

55. Canada Health Journal I/5 (May 1870), pp. 67-68; Kingston Medical Quarterly 3(1) (Oct. 1898), p. 165.

56. Canada Lancet, VII (June 1875), p. 289.

57. Canada Lancet, (March 1889), p. 218.

58. Canada Health Journal I/5 (May 1870), p. 70.

59. Dr. Charles Roland kindly pointed this out to me.

60. See E. Gibbs, "Professionalization of Canadian Medicine," op. cit., for a detailed description of this process.

61. Canada Lancet (June 1875), p. 291.

62. Goodell, op. cit., p. 570; Skene, Medical Gynecology, p. 85.

63. Mundé, op. cit., p. 511.

64. Mundé, op. cit., p. 35, p. 46, p. 52; Charles Penrose, A text-book of diseases of women (Philadelphia, 1905), p. 18; Canada Medical Record, (Nov. 1889), p. 27.

65. For a detailed study of sexual theories see Jill Conway, "Stereotypes of Femininity in a Theory of Sexual Evolution," Victorian Studies XIV/1 (Sept. 1970), pp. 47-63.

66. Canada Medical Record (Nov. 1889), p. 29.

67. Canada Lancet, VII (Oct. 1874), p. 57.

68. Goodell, op. cit., p. 550; The Sanitary Journal (1876), p. 335.

69. Lowder Manuscript, p. 99, see footnote 5.

70. Cazeaux, op. cit., p. 238.

71. See M. Bliss, op. cit.

72. Upper Canada Journal of Medical, Surgical and Physical Science, I (July 1851), p. 152.

73. Cazeaux, op. cit., p. 392.

74. Canada Medical Record, 6 (Jan. 1878), p. 82; Tyler Smith, A Course of Lectures on Obstetrics, op. cit., pp. 358-59. Playfair suggested that it was up to the woman whether she wanted her husband with her or not. William Playfair, A Treatise on the science and practice of midwifery (London, 1880), p. 276.

75. British American Journal of Science (Nov. 1850), p. 333.

76. Medical Chronicle (Dec. 1854), pp. 261-62.

77. Harvey Graham, Eternal Eve, the history of gynecology and obstetrics (New York: Doubleday, 1951), p. 213.

78. Alfred King, A Manual of Obstetrics (Philadelphia, 1884), p. 210.

79. Ibid., p. 204.

80. Graham, op. cit., p. 160.

81. Dominion Medical Monthly, I/1 (July 1893), p. 26.

82. King, op. cit., p. 201.

83. A Charpentier, Cyclopaedia of Obstetrics and Gynecology, IV (New York, 1887), p. 207.

84. King, op. cit., pp. 198-99.

85. Medical Chronicle (1855), pp. 494-97.

86. Upper Canada Journal of Medical, Surgical and Physical Science (August 1851), p. 195; Walter Radcliffe, Milestones in Midwifery (Bristol, 1967), pp. 82-83.

87. Canadian Journal of Medical Science (Jan. 1880), p. 45.

88. Canada Lancet VI/7 (March 1874), p. 219; Upper Canada Journal of Medical, Surgical and Physical Science, 2 (July 1852), pp. 66-67.

89. As a matter of record the medical treatment of men for nervous and sexual disorders was equally horrendous. See Gail Pat Parsons, "Equal Treatment for All: America Medical Remedies for Male Sexual Problems: 1850-1900," Journal of the History of Medicine 32 (Jan. 1977), pp. 55-71.

90. Canada Medical Record (May 1885), p. 171; Canada Lancet (Sept. 1885), p. 26.

91. British American Journal of Medical and Physical Science (Feb. 1848), p. 324.

92. Radcliffe, op. cit., p. 81.

93. Tyler Smith, op. cit., p. 128.

94. Dominion Medical Monthly and Ontario Medical Journal (June 1899), pp. 277-80.

95. Canada Medical Record (Feb. 1876), p. 129.

96. Tyler Smith, A Course. . . , op. cit., p. 30.

97. Canada Lancet 18 (Sept. 1885), p. 25; Maritime Medical News (Oct. 1898), p. 337; Canada Medical Record (Feb. 1889), p. 99; Maritime Medical News (July 1892), p. 125.

98. Canada Lancet, 18 (Sept. 1885), p. 73.

99. Canadian Journal of Medical Science (Oct. 1877), p. 339; Maritime Medical News (May 1897), p. 153, G. Bedford, The principles and practice of obstetrics (New York, 1861), p. 574.

100. Canada Medical Record (1898), p. 4.