I declare that I am the author of this thesis.

Williams G. McBride
29th May 1960.
"Some Aetiological Factors of Recurrent Abortion"

A Thesis prepared by William Griffith McBride for submission for the Degree of Doctor of Medicine of the University of Sydney.

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Introduction and Acknowledgement.

In 1951 Dr. Alan Grant suggested to me that I should take an interest in the problem of recurrent abortion and this Thesis is based on this work.

During the time that I have been engaged on this work I have received much help from many people.

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One of the greatest challenges in obstetrics, is the high foetal loss which occurs in the first and second trimesters.

A miscarriage is a cause of distress to any woman. Invariably the first question asked of her medical attendant by a woman who has recently had a miscarriage is, will it happen again?

Apart from any mental anguish caused by a miscarriage, it is always accompanied by some degree of pain and haemorrhage, the latter is usually greater than the blood loss which accompanies the normal third stage in a third trimester labour. Haemorrhage with its accompanying shock is probably the commonest complication of abortion. Abortion thus accounts for a considerable percentage of the blood used in any institutional "Blood Bank".

When sepsis complicates abortion the matter of criminal abortion immediately comes to mind, however, it must be realised that sepsis may also follow a spontaneous abortion, particularly if the patient is not curetted. Sepsis of the genital tract may cause permanent impairment of fertility. Cornual occlusion of the uterine tubes, is a frequent finding in women who have had a miscarriage.

Apart from these two great complications of
abortion there is also the risk of damage to the genital tract, in particular, cervical lacerations.

In addition to the sequelae of the condition itself, there are the added risks attendant to the treatment of the abortion, that is, the risk of anaesthetics and curettage.

Therefore a single abortion is accompanied by a considerable strain on the maternal organism. The woman who is unfortunate enough to have a consecutive series of abortions is indeed to be pitied. For some weeks or even months she is building up her hopes and anticipating maternity only to have them shattered, often in a matter of hours. Again she may be subjected to the fear of a miscarriage for some weeks after the first warning signs before either the event occurs or the risk abates.

A woman who has had one miscarriage can usually have her fears of recurrence assuaged by a simple discussion of the complexity of pregnancy. Every woman has amongst her friends someone who has also had one miscarriage.

When we are confronted with the lady who has had two miscarriages her fears are not so easily placated. Perhaps we may be able to dismiss them with a short discussion of the mathematics of probability as put forward by Malpas (1938). This indeed, may satisfy
any woman trained in calculus. To the woman who has little knowledge of the chances of probability it is cold comfort. Most women who have wasted several months of pregnancy to have their system insulted by two or more abortions are to some degree agitated by their unfortunate experience and do expect some investigation and perhaps treatment for cause of their unfortunate loss. This Thesis is based on a study of such a group of patients.

The incidence of recurrent abortion is small and somewhat difficult to determine.

A study was made of the patients attending the Ante-natal Clinic of The Women's Hospital, Sydney. The patients were interrogated as to their previous Obstetric History. If they gave a history of miscarriage, or miscarriages, the cause of the miscarriage was asked and whether or not it was induced.

This, of course, raises the question as to what percentage of women give an honest answer as to the cause of the miscarriage. This will be discussed again later.

There were 1631 patients attending the Ante-natal Clinic who were included in this survey after direct interrogation. Of these, 474 were pregnant for the first time and will not concern us further. Of the
remaining 1167 women, \( \frac{414}{1167} \) or 35% had one or more miscarriages and of these 378 patients had one or more abortions which were not recurrent. To have been able to have two miscarriages the patient would have to be now in her third pregnancy, this excluded 322 having their second pregnancy.

Of the 836 people who had two or more pregnancies, shall we say, potential recurrent aborters, only 27 had abortions in their first two pregnancies. This is an incidence of 3.2%.

Now there were 323 women who had three or more previous pregnancies, so that theoretically all these people were capable of having three primary recurrent miscarriages, however, only 8 did so, making the incidence of women who had 3 primary recurrent abortions 2.4%.

Now 148 women had four or more previous pregnancies, so that these were all capable of 4 successive miscarriages, however, only 1 did so, making an incidence of 0.6%.

The above figures show that the incidence of Primary Recurrent Abortion is not great. What then of Secondary Recurrent Abortion, i.e. those people who have had one or two pregnancies followed by more than two successive spontaneous abortions. There were 24 women who had a pregnancy followed by two successive abortions.
To be capable of being included in this group the women would have had 3 or more pregnancies, making the incidence 24 in 323 or 7%.

Then 148 women had four or more previous pregnancies, only 7, however, had one pregnancy followed by three or more successive miscarriages, making an incidence of 5%.

Javert et al (1949) state that recurrent abortion is a rare obstetric condition, having an incidence of 1:300 and 1:493 pregnancies for Primary and Secondary Habitual Abortion (3 or more miscarriages) respectively.

The following Table shows the Incidence in the Ante-natal Clinic of The Women's Hospital of patients with Recurrent Miscarriages.

**Incidence of Primary Aborters Expressed as Percentage of the Patients Attending the Ante-natal Clinic**

| Incidence of Two Successive Spontaneous Miscarriages amongst women who have had 2 or more pregnancies | = 3.2% |
| Incidence of Three Successive Spontaneous Miscarriages amongst women who have had 3 or more pregnancies | = 2.4% |
| Incidence of Four Successive Spontaneous Miscarriages amongst women who have had 4 or more pregnancies | = 0.6% |
Secondary Aborters

Incidence of Two Successive Spontaneous Miscarriages
amongst women who have had three or more pregnancies = 7%

Incidence of Three Successive Spontaneous Miscarriages
amongst women who have had four or more pregnancies = 5%

We can see that the incidence is small so that no one clinic will build up an enormous series of these patients. The majority of the habitual aborters in this clinic series, actually sought advice before the pregnancy which enabled them to be included in this series. Many others are undergoing investigations at the Sterility Clinic before embarking on a further pregnancy in order to try and avert the disastrous outcome that they have had in their previous pregnancies.

An interesting feature of these figures is that Secondary Recurrent Abortion is more common than Primary Recurrent Abortion although there were more women suffering from Primary Abortion. Whether the abortions were induced must be considered. Is a woman who has one or two children more likely to have induced abortions because at the time of conceiving she does not want to have another child? It would seem that this is more likely than a woman having her first two or three preg-
nancies terminated. However, more women suffering from Primary Habitual Abortion sought advice at the Sterility Clinic.

On interrogation none of the women who had recurrent abortions admitted that any of their miscarriages had been induced, in fact, they vehemently denied the possibility, seventeen admitted that they had criminal abortions before marriage but these abortions were excluded from the series.

Of the 378 patients who had one or more miscarriages (which were not successive) 83 or 22% admitted that they had taken "tablets" or had criminal interference.

The majority of these women gave the information quite freely. It would seem that the majority of women attending a public hospital clinic are quite frank with this information.

One hundred and eight patients of the 1157 who had two or more pregnancies miscarried in their first pregnancy, giving an incidence of 9.3%. Twenty seven of these patients stated that the abortion had been induced. So that approximately one quarter of these women had an induced abortion in their first pregnancy.

In conclusion it would appear that Secondary Recurrent Abortion is more common than Primary Recurrent Abortion, women with children are less likely to seek
advice after recurrent miscarriages than their sisters who have yet to produce a viable child. The overall incidence of these conditions is small, so that it is not a great burden on any clinic to thoroughly investigate any woman who presents with a history of recurrent abortion.