ESSAY
ON
The Signs of Pregnancy
AND
Their Medico-Legal Investigations,
BY
F.C. William Mullar.
FROM
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Introduction

There is perhaps no question of greater importance in Medical Jurisprudence, than that of the signs of pregnancy, and its legal investigations, on account of the relation it bears to civil and criminal proceedings.

Every Jurist ought to study and acquaint himself with them, for upon his knowledge of these may depend the honor and welfare of many. As for instance, a virtuous female stands accused of pregnancy, it is he must decide whether she is so or not.

He has it also in his power to arrest the administration of justice if brought forward by the accused as a plea of reprieve. It aggravates an assault when abortion ensued. It may be feigned or concealed. It may also affect the honor of parents and children.
If it is protracted it involves legal
intimacy. In treating of these
signs, it seems indeed as if nature
had wished to conceal pregnancy
from us, till all the surrounding
structures should be in a condi-
tion such as to protect it from
external injury. We know of no
signs as yet which can be said
to be infallible. In the first
months of pregnancy, the signs
which we now possess can scarce-
ly be distinguished from disease
until the end of the second
or beginning of the third
month. They are numerous and
some more easily distinguish-
ed than others. Some authors
divide them into those which
affect the system, and those
which affect the uterus; others
into rational and sensible.
The forms of these divisions
seems to be the most useful, but
it is not by the dividing of them
that we can detect it more easily by a combination of certain of them. We must be very careful in making our examination even in cases where the signs seem best marked, and will be shown as we proceed, that it is very easy to be led into error either by the female or by the signs. We must now enumerate the signs in general which consist of the following. 

Suppression of Catamenium: Increased irritability of temper, or the reverse, Melancholy, Insanity, Nausea, Morning sickness, Growing of food, Feverish heat, Heartburn, Sympathetic pain through different parts of the body, viz. of the head, face, teeth, and extremities, also a Ticking sensation in the breasts, with increased firmness of them; formation and darkening of areola, with increased size of Sebaceous Follicles; a
discharge generally takes place of a whitish serous fluid from the nipples; depravity of appetite; constiveness, Emaciation, protrusion of Umbilicus, quickening, or the movements of the fetus, which takes place about the 20th week of utero-gestation; hemorrhoids, varicose tumours, or anaemicous swellings of lower extremities; change in the color of skin of neck, and around the eyes, also in the linea alba becoming darker, changes in the urine, change of color in the lining membrane of the vagina; also of the external genital organs. Gradually increased size of abdomen, headache, particularly in the cerebellum, as has been remarked by Joseph Boccario.

The next sign worthy of remark is the sound of the uterine, fetal and Tonic, vessels yielded by the Stethoscope. From time to time new signs have been added to
These... Amaga, published in the Gazeta de Reacona, 13th July 1825.
some remarks upon the peculiarity of the pulse which he considered an infallible proof of pregnancy. He asserts that this peculiarity of the pulse can be felt between the 40th and 60th day; and is most distinct at the beginning of the third month; and also that it can be felt as long as the fetus is living, but not after. It cannot be distinguished in males or extra-uterine conception (Dr. Hohl of Halle in his Geburthülfige Exploration, p. 182, states that after making many examinations both with care and diligence he could not detect this difference of pulse in pregnant women.) Joseph Beccaria states in the "Neueste Medicinische Chirurgische Journale des Auslandes" Von Berend und Moldenhawe. No. 14, Vol V. Part 2. Page 130.
1831.
that a lively smarting pain is felt in the region of the cerebellum in that part of it to which "Gale" has ascribed the seat of the animal functions; and that it is a rational sign of pregnancy before the fourth month; if the head is moved during the paroxysm, giddiness follows.

This pain attacks suddenly without any premonitory symptom. It lasts a short time after which there is a desire to sleep. After the patient has slept for a time and awoken, she is quite refreshed and has a good appetite. These paroxysms returned for eight days at the same hour. No remedy had any effect in this case.

This need not strike us with wonder as we find physiologically that the cerebellum must have some sympathetic or real connection with the organs of generation which has been demonstrated by the examination of castrated
animals in whom the cerebellum was very small when compared with unmitigated animals of the same species. He also find in animals in which the propagation is the prominent passion that their cerebellum is in greater proportion than the opposite. Still the foregoing cannot be used as a positive sign of pregnancy, as we find females complaining of severe pain in the head when the uterus is attacked by inflammation; also by Sciatica and Cancer, which has been observed by some of the oldest medical writers. Sydenham and Morgani and others have authenticated these statements. Dr. Hohl of Halle states that he knew several females just before the return of the catamenia who had severe pain in the cerebellum; also that he has had females under his care, with diseases of the uterus and ovaries who also felt this pain. 

See his Geburtshilfliche Exploration, p. 184, vol. 1.
but these statements of Beccaria are like the most of our unsure signs especially when we consider that there are many females, both those who have borne children before, and those who are pregnant for the first time in whom these signs are wanting entirely; and again when we find them accompanying so many derangements of the uterus, as suppression of the Catamenia, Scorbutus and Cancer. Along with this we may also place that sign given by Dr. Dewees, the spitting of a white tenacious substance which, when spit on the floor makes a mark like a shilling. In considering the signs of pregnancy we must not insist upon those given last, nor indeed alone, upon any which have been enumerated; but our duty is to take them altogether and from the importance and decided character of them draw
our deduction accordingly and in doing so I will follow the enumeration given by our much respected professor Dr Stewart Tait in his valuable outlines of Medical Jurisprudence.
They are the following:

1. Cessation of Catamenia
2. Areola and general state of Breasts
3. Changes observed in the organs of generation, state of the Uteri, and the form of uterus as felt above the pubis.
4. Tumefaction of Abdomen
5. Development of the Ovum and human Fetus
6. Motions of Fetus (Active & Passive)
7. Fricotine
8. Sinea Alba
9. Stethoscope
10. To detect Pregnancy, also to judge of the life or death of the Fetus in the Fetal & Tunic Bands
11. To ascertain the presence of Twins
12. To decide upon the position of the Fetus
13. Extra Uterine Conception; Ovarian, Tubarian and Ventral
14. Moles, Hydatids and diseases of ovary...
pregnancy (use of Stethoscope in such cases)

Quickening

Law of England

Bracton (Lib. III. C. III)

Sir Wm. Blackstone, (Vol. I. Page 129)

Lord Ellenborough's Act. 43 George III c. 58, sect. 1

amended by.

9th George IV, c. 31

7th William IV & 1st Victoria, c. 85 Sect. VII

for the punishment of Procuring abortion and, sect. VII, for punishment of accessories to the said crime

Law of Scotland, as regards abortion

The plea of Pregnancy in stay of Execution

English law

Scotch law upon the same subjects
The first to be considered is the cessation of the

Catamenia

The phenomena of this discharge are as follows:

It commences at the age of puberty, differs according to constitution and climate, which is shown by it commencing far earlier in the tropical regions and much later in the arctic. In most cases it is preceded by disordered health, in others no such change takes place. In appearance it resembles venous blood, but does not coagulate, as mentioned by Dr. Burns, Denman, Gooch, Charles Mansfield, Clarke, Jewees and many more, but denied by Dr. Mauley and many others.

It has a slight fishy smell; its general time for flowing is between 3 or 4 days but varies accordingly in its new York Med. & Phys. Journal.”
different females, in temperate climates, it returns every lunar month or every 20th day from its last disappearance from which its name has arisen, and ceases entirely between the 40th and 50th year. It is liable to many irregularities such as deficiency, complete suppression, and an excessive flow. We have only to consider the second of these, it being so closely connected with the subject upon which this essay treats.

In the first place, this suppression may arise from many causes, these can be divided into two sets viz. the local and general.

The first or local suppression may arise from pregnancy and disease, as for instance, Polypi, Hysteroma, Sarcoma, Osteo-hysteroma, and various other tumours, also from Imperforate hymen as...
by Dr. Montgomery. Cycloped. of Pract. Med. Vol. III. p. 472. The second or general form of emotion of mind, as sudden Joy or Grief, Exposure to cold or damp, irregularities of diet, and many other causes.

It is generally by this suppression that a female imagines herself pregnant, and also many medical practitioners are led into error. To avoid this we must be very cautious in our diagnosis for many cases are related of suppression of the catamenia having taken place accompanied by many of the other signs of pregnancy such as vomiting, nausea, headache, eruptions, increased size of Breasts, Color of Scurfa, Discharges of blood from the Lungs, Stomach and Intestines, edematous swellings of extremities, Epilepsy, Hysteria, Mania, &c. Aslander published a case, which proves how deceiving these are in 1801, p. 176.
of the Accademia der Entbindungen
Zehrs Anstalt, Göttingen 1801.

In this case the female showed all
the signs of pregnancy such as
suppression of catamenia, in-
creased size of uterus and abdo-
men. She herself imagined that
she perceived the movements of
the fetus, and laboured under
the idea for some time, but
after proper treatment she succeed-
ed in restoring the catamenia,
from this time all the symptoms
became fewer and after a short-
time she was restored to perfect
health. The next case is one by
Dr. Siebold, "Journal für Geburts-Hülle
Frauenzimmer und Kinderkrank:
Heiten Vol. 7, p. 250, 1828. He states
that this lady thought herself
pregnant, and also that she felt
the fetus moving, suppression of
Catamenia had taken place, with
Nausea, vomiting in the morning,
strange appetite, constant desire
void urine, increasing size of the abdomen. She sent for her Medical man, who was at the same time her accoucheur, and also two midwives who upon examining her, declared her to be pregnant. She not being satisfied with this sent for me [Dr. Seibold] and upon examination I found the uterus retroverted; and the abdominal distension was caused by a great congestion of the liver; but especially by the congested state of the Mesenteric and Hemorrhoidal vessels. After my prescribing for her proper remedies she recovered entirely.

Dr. Dewees relates a case in the 1st vol. 126 page of Chapman's Journal of a female who had not menstruated for a year, her Breast swelled, she had Nausea and vomiting in the morning. On examining her he supposed she felt a motion, as if of the
fetus; as the female was un-
marricd and of irresproachable
character proper medicines were
prescribed which relieved her
only for a short time. Finally
on treating it as a case of c
ascites there was a manifest
improvement; after which the
disease ended in a sudden
gush of blood from the vagina
Dr. A. T. Hohl of Hallo
relates a case of a patient of his
own a healthy robust young lady
who since her first catamendial flow
which took place in her 13th year
dreams of nothing but red subjects
such as flowers, glasses, pictures,
everything she sees in her dream
is of pure red, and this only took
place every second or third day
before the return of the Catamenia.
She was married very young, and
remarked that she had lost
these visions entirely. The cata-
amenia returned every three weeks
at its usual time, but it did not return the fourth time, upon which the abdomen increased a little as also the breasts. She felt herself unwell, irritable, easily tired and suffered from severe toothache; also her appetite or taste was changed; she longed for cheese, which at any other time she would not look at, and several other signs. After 6 weeks the catamenia returned and her health was restored.

Dr. Maegle mentions that this suppression of catamenia cannot be used as a sign of pregnancy, because other circumstances standed than that of pregnancy produce this effect, and whether this disease be present or not it is of little value, because this menstrual discharge often returns several times during the pregnancy.

There
These cases show us how easily we may be deceived in our diagnosis if proper attention be not paid to them. In them we see that the appetite was changed, abdomen and breasts were affected as also the primary organs; nausea, vomiting &c. also the females imagining they felt the fatal movements were sufficient to lead us into error.

The next to consider is whether it is possible that menstruation can take place after conception. There exists a great difference of opinion on this point. Many cases are stated in which the females have menstruated through the whole period of utero gestation; as for instance, Dr. Heberden knew a female...
female who never ceased to menstruate during four pregnancies regularly up to the time of her delivery. — Dr. Campbell mentions a case in his Practice of Midwifery, Page 44, where the females menstruated regularly during six months after conception. — Dr. Maunsell of Dublin notices 3 cases in which menstruation occurred during pregnancy especially one of these females who could not distinguish the discharge from the menses. It returned regularly every 28th day. Edin. Med. & Sur. Journal, 7. 1834.

It is useless to relate any more cases although many more might be cited.

The following authors hold the opinion that a discharge may take place during pregnancy, viz. Drs. Papusow, Belloe, Govech, Professor Carus, Dr. Bewers, Blundell, Power, Montgomery, and
and Dr. Kennedy. It is asserted by Dr. Burns that those cases which came under his own observation, although this discharge appeared with periodic regularity, he always found it to consist of pure coagulable blood. P. 139. Dr. Sims in p. 257 of Darcis obstetric Medicine denies its existence except in the form of manifest hemorrhage. Dr. Davis in page 253 of his obstetric medicine, is of opinion that genuine menstruation has never existed during pregnancy. The orifice of the uterus he remarks is then hermetically sealed, and it is inconsistent with the safety of its contents, as is seen in hemorrhage and premature discharge of the ovum.

He is willing to allow and all the other authors on his side, that cases of periodic discharge of blood occur, but not menstrual...
It has an extra uterine origin, and as the parts are in a state of Pethora, the vaginal branch of the uterine artery may furnish it. But we must remark the remark of Dr. Gooch that whether it be menstrual or periodic discharges from the above cause or from partial separation of the ovum the female cannot discriminate it. It must ought to investigate such a case with the greatest minuteness, for, we now see that we may not only be foiled in making our diagnosis when the Catamenia is wanting, but we might be led into mistake by this periodic discharge and especially when the female wishes to conceal her pregnancy. In a case of this kind of suspected pregnancy, we ought to examine every sign which could be of the slightest use in establishing the fact. The suppression of the catamenia may always
be counted upon as a sign of pregnancy, if accompanied by other symptoms, especially when no organic disease can be traced.

The remarks of Bellamy are deserving of notice. Then a female experiences the suppression along with other symptoms of pregnancy, we may consider her situation as yet uncertain, because these signs are common to amenorrhea and pregnancy. But if toward the third month while the suppression continues she recovers her health and if her appetite and colour returns, we need no further proof of pregnancy. Under other circumstances her health would remain impaired and even become worse.

Dr. Haegle says that it is not uncommon for this discharge to continue in really pregnant females till the third month, and seldom to the half.
half or end of gestation.

He furthermore says, that this discharge cannot be distinguished from the real menses either in quantity, quality, or by the time of its flow.

We now come to consider the Areola

and

General state of the Breasts.

We observed in the cases related formerly by Drs. Osmandt, Siebold, Dewees and Hohl of Halle, that there existed no pregnancy in any one of them and yet the Breasts were affected. We also observe a great change in them at the age of puberty and at the recurrence of the catamenia which causes them to assume much of the appearance found in
pregnancy, and again in many females who are pregnant the breasts are not affected till the latter months of utero-gestation in others not till after delivery. These changes sometimes accompany different diseases of the uterus. Also that milk has been secreted without the female being pregnant.

Dr. Ivory Kennedy says, that the changes which occur in the breasts are the effects of sympathy with the uterus. Of this strong, reciprocal sympathy, that exists between the uterus and mammae, every day's experience shows us, and must sufficiently convince us, that this sympathetic connection is not confined to the pregnant state. How frequently do we observe patients labouring under cancer or other malignant or painful affections of the breasts.
complain of shooting pains in the
region of the uterus, and again
how often do we not observe,
not only in organic but frequent-
ly functional, derangement of
the uterus, as in the case of
simple suppression of the menses
enlargement and sensibility
of the Breasts. — Many opinion
are existing in respect regarding
the Areola. — Dr. Lewes regards
it as equivocal except in a
first pregnancy, he also remarks
that it is sometimes wanting
altogether.

Dr. Blundell relies
greatly upon it. He states that
they are three varieties of it,
according to the change, when
the alteration rises to the highest
point. When the Areola becomes
broad and dark and embrowned
in fullest measure, especially
when pale before, it changes
to a deep brown so dark that
it reminds us of the skin of a Negro, at least in a first pregnancy. In several instances where it was positively denied by the female, he thus detected it.

Dr. Montgomery attaches much importance to the state of the Areola, he says that as early as the second month he has detected a change in the colour. It is of a deep shade of rosé colour slightly tinged with yellow or brown. During the next month it varies in intensity according to the complexion of the individual, being darker in persons with dark hair and vice versa.

In extent this circle varies from 1 to 1½ inch in diameter, and increases in some as pregnancy advances—Dr. Montgomery, observed in a case of...
of his at the time of labour, that
it exceeded three inches in diame-
eter. Dr. I. DENMAN states that
the areola is not a primary
consequence of a particular affection of the uterus, but of a
preceding enlargement of the
Breasts, and although it occurs
in pregnancy it may be produced by any cause capable of
giving the breasts the resemblance of pregnancy, of which
it can only be esteemed a doubt-
ful sign. The Areola is there-
fore found in many complaints
which resemble pregnancy.

Dr. R. GOWCH mentions
that in thin women the enlarge-
ment of the Breast is often
very slight, and in fat persons
the Breasts form so small a propor-
tion of the Bosom, that
any enlargement of the former
is scarcely perceived. In very
fat women with light hair
B. See his Introduction to Midwifery, p. 206. and
c. See his account of disease peculiar to
to children. p. 196.
and Eyes. The discolouration of
the Areola is often so slight
that it is difficult to perceive
it, and in Brunettes who have
already borne children the
Areola remains dark even af-
terwards, so that this ceases
to be acquired in all subse-
quently pregnancies.

I believe (page 194) however that the darkness of the
Areola depends upon other
causes, and that when it
exists, it may generally be
looked on, as a sign either
that the patient is pregnant or
has been so formerly. He also
relates in the same page that
he saw two newly married
women, who had made pre-
paration for lying-in and who
were not pregnant. In both
the Areola was dark, though
if their history is to be trusted
they had never had children.
Dr. Kennedy remarks with regard to the areola, the conclusion we must arrive at, is, that although it is not unworthy of our attention taken with other symptoms particularly in regard to first pregnancies, yet from the frequency of their occurrence in cases where pregnancy did not exist, and its absence in cases where it did, without strong corroborating proofs at least we can place little confidence in it.

Professor Rohr of Halle is of the same opinion regarding change of the Breasts and Areola.

I this winter attended a patient who was labouring under ovarian dropsy; it had distended the abdomen considerably. The Breasts were enlarged and a stitching pain was very often felt in them. The

A. Kennedy on Reg. Gynaec. p. 552
areola was dark. She resembled a female in the fifth month of pregnancy. No alteration in the sebaceous follicles could be distinguished.

Dr. Hunter placed the greatest confidence in the color of the areola. It subject was brought to his dissecting room, and on looking at the areola he declared her pregnant. One of his pupils examined her organs of generation and found the hymen entire. The Dr. still persisting that she was pregnant opened her body, when a fetus was discovered.

Professor Hohl of Halle has observed the areola in several cases, of a red colour resembling the lips. We may also here state that the secretion of a milky fluid does not always prove that a female is pregnant. This may be caused a Geburtshülfe. Expln. Vol II. 867.
disease or artificially. There are many cases on record when pregnant females never had a sufficient secretion of this fluid to suckle their own children.

Again we find many cases related where men have given suck to their children. Such a case is related by the Bishop of Cork in the Philosoph. Transac. Vol. 12. Page 810.

Belloe relates a case of a servant girl who was obliged to sleep in the same bed with a very noisy infant which disturbed her very much. She thought that by applying it to her breast would quiet it; after a short time she had a sufficient flow of milk from her breasts for its wants.

Dr. Eowyn Kennedy quotes a case of a female in England who continued uninteruptedly to give suck from her
her 25th year to her seventy second, and that at the time he re-
states this she was 81 years of age and had a regular secretion of
milk.

B. Iodell mentions some cases of females who had not borne any
children for many years and yet continued to secrete milk.

C. D2. noble mentions

that the secretion of milk is no
sign of pregnancy at all.

D. D2. Blundell says,

"you should not infer there is
pregnancy to be present merely
because there is a secretion
of milk." Then he goes on to
state two cases. One of them
had not had a child for three
years, but still milk formed so
copiously that when the breasts
were pressed, the milk oozed
freely forth. The other case was
a negress of Demara, who
after her pregnancy, secreted
milk.

B. Traité de Med. Legale.
C. GeburthVSche Exploration. VII. 8. 191.
P. Run. 4. Pan. of Obstetricy. P. 160
milk for twenty years together.

Dr. Naegel says that neither the increased size of the breasts nor the secretion of milk can be considered as a sure sign of pregnancy.

Dr. Blumenbach remarks that this secretion can take place in the male as well as in the female, and accounts for it in this way: that the anastomosis between the Epigastric and Internal Mammary artery, carry on a communication between the uterus and breasts in the female, and the corresponding parts in the male.

Changes observed in the organs of Generation.

Now we come to consider the

*Lehrbuch der Geburtshülfe* toli. 167, p. 136

Medico-Chirurg. Review. vol. 12, p. 114
Changes which take place in the organs of generation; the increased size of the uterus and its position and the state of the cervix and ovarii.

These changes have more value as a sign of pregnancy than the former two, when in connection with other signs, but in themselves, they, like the pest, are uncertain. These changes can also be brought about by disease. We are most easily led into error by the Tumefaction of the Abdomen if not cautious in our examinations, this may arise from Ascites, Sympathities, Disease of Ovaries, and an increased deposit of fatty matter between the Abdominal Parities.

In making an examination to find out whether the Tumefaction arises from the uterus or from the abdominal
cavity, we must combine the internal with the external manipulation. In making this examination it is better to do it about the fourth month, as then the fundus of the uterus rises just above the Symp. Pudis. After introducing our finger into the vagina up to the os uteri, we must keep it steadily there whilst with the other hand we grasp the tumour through the Abdominal Varies, moving it gently in the lateral, or in the postico posterior direction.

If we feel the motion of the cervix and os uteri, we may be sure it is the uterus which has enlarged. This may also arise from disease, as for instance, Hydatids, Moles, Polyposus and other Tumours, accumulation of menstrual discharge, Scirrhous, degenerat
of substance of uterum, and many others; but by paying proper attention and by careful examinations, we ought soon to be able to ascertain in the most of cases, Disease from Pregnancy. This can be done by remembering the form, consistence and position of the enlarged uterum; as also by attentively weighing all the other signs of it in our mind and considering which are in favor of pregnancy, and which against.

Along with the former we have also the change in the cervix and of uteri, but still we must remember that when a fever disease enlarges the uterum the cervix and of uteri change also. Dr. Naegle mentions that this sometimes takes place immediately before the cata-

menial flow.
Dr. H. I. Schmidt of Vienna relates two cases in which the females thought themselves pregnant, the uterus increased in size, and upon examination he found the cervix shorter, thicker and softer, and the orifice of the os rounded as in the third month of pregnancy. It originated from suppressed menses.

We here quote the words of Professor Baer of Vienna.

"Feminæ suæ plena et juvenis, si varius praegnat vel omnis sterilitatis est circa tempus menstruationis utius in gravitatem descendit et hanc, mutatis etiam, illius collum et os, ut praegressis postea aut praeventibus insuper alius Indiciis quae graviditatem ambigue designant, accidenti praestatione avidæ fetus persuasione medicus habere in utero eam falsa indicit.

B. Libri de arte obstetricia. Vienna, 1830, p. 103.
State

Of the uterus to be in the unimpregnated state.

Before considering the changes which take place in the gravid uterus it would be better to mention some of the principal characters of the uterus in the unimpregnated state.

This viscus is of the pyriform shape flattened in the antero-posterior diameter as seen [Refl. fig.] it is divided into four parts: the Fundus, Body, Cervix and Uterus. The Fundus and Body or upper part constitute the greatest proportion of the uterus. The cavity in the Body is of a triangular shape and larger than would contain half an almond. The remaining portion consists of the Cervix and as or lower portion. This ends in a rounded edge forming two
two lips or segments, and an anterior and posterior one; the posterior being a little longer and thicker. The canal through the cervix is wide in the middle and narrows both at the uterine and vaginal portions. These two lips in the female who has not borne any children are always flat and lie close together, thereby making the orifice have a longitudinal direction - the Body of the uterus is covered by a fold of Peritoneum which adheres very closely to it, whilst the upper part of the vagina surrounds the cervix and Po. Its weight in the virgin state is about 1 1/2 oz. Dr. Naegle and many others state it between 6 and 8 Drachms. In structure it consists, according to some of Elastic or Yellow Tissue and
and to others of Muscular Tissue, Blood vessels and nerves.

We may now proceed to describe the changes which take place in the impregnated uterus.

In the two first months of pregnancy we find the uterus sunk more into the vagina and upon examination, we find we can reach it more easily with the finger. The uterus becomes rounder, thicker and softer, especially when the ovum has attached itself. The lips of the os are thicker and softer, and nearly of an equal length. The orifice of it assumes more of the round form, whilst the internal opening is entirely closed by a gelatinous substance.

In the third month
The uterus increases gradually till it is on a level with the pubis, leaning its fundus forward whilst the os points backwards towards the prominence of the sacrum. It still retains its pyriform shape on account of the fundus and body only increasing whilst the cervix remains unchanged.

At or about the end of the fourth month, the uterus has risen into the upper portion or basin of the pelvis so that it can be felt above the pubis, the cervix is raised higher and the orifice in the os is rounded. The shape of the uterus is still as yet pyriform, whilst the fundus and body are increasing, the cervix still retaining its shape.

About this time the blood
blood vessels which in the un-
impregnated uterus were for-
ticous now become straight-
tened their number and branch-
es increasing in size.

In the fifth month
the Fundus stands between
the os pubis and umbilicus
the cervix cannot now be
reached so easily as in the
fourth month and inclines
more to the protuberance of
the os coccygis. The uterus is
still much about the same
shape, the under part of
its body increases. The blood
vessels enlarge and form
many anastomosis which are
most numerous in the part
where the placenta is fixed.

During the sixth
month the Fundus reaches
the Umbilicus, it now changes
its form to that of an oval
or egg shape. This is owing
to the cervix becoming softer and distending. The lips of the os uteri are now obliterated and form a soft thick ring, which from this time increases and becomes thinner. The substance of the cervix also gradually becomes looser and softer.

In the seventh month the fundus extends to between two or three finger breadths above the umbilicus, the so point- ing to the concavity of the sacrum by the distention of the cervix, at this time the uterus assumes more of the spherical than the ovoid form. The cervix extends now only about 5 lines into the vagina — the vessels and nerves increased considerably and especially where the placenta is attached. These vessels pierce
the uterus in every direction forming a perfect net; the muscular fibres appear distinctly, of which the uterus principally consists; and in the latter months of pregnancy are more developed; about the end of this month, the uterus is considerably enlarged having an equal tough border all round it.

In the eighth month the fundus reaches midway between the umbilicus and epigastrium, the length of the cervix now is scarcely four lines, and stands very high, pointing posteriorly and can scarcely be reached by the finger.

In the ninth month the fundus has reached the epigastrium. the cervix is now only two and a half or three
Three lines in length. It lies close under the promontory of the sacrum. In form the uterus assumes now again more of the pyriform shape, the still increasing size of the uterus being due alone to the dilatation of the cervix. In the Tenth Lunar month the whole of the Uterus sinks to very near where it was in the eighth month; it is now completely egg-shaped. In this month the whole of the cervix is obliterated; we cannot distinguish the external from the internal orifice. We now in general find that the os begins to open. (Rept 14. Ep.1.)

Having now given a somewhat lengthened account of the changes which the uterus undergoes in the impregnated state, we intend to consider each separately. Therefore we begin.
begin with the change of the cervix and os uteri. These extend about 2/3 of an inch into the vagina in the virgin state as shown in (Rept. Fig. 1) of a flattened shape terminating in two lips or segments. These possess nicely rounded edges—the os uteri at this time is of an oblong shape owing to the close approximation of the lips upon one another. (Rept. Fig. 2)

In the second month the segments become thicker and softer, the longitudinal orifice seems now to become a little rounder.

In the third month little more change takes place—the cervix points more posteriorly.

In the fourth month the cervix stands a little higher.
and the orifice has now assumed more of the rounded form - the cervix still retaining its firmness. [Rept. 7, fig. 2]
In the fifth month the cervix is not so easily reached as in the former month by its becoming shorter.

During the sixth month the cervix begins to soften and dilate - the lips of the uterus disappear and the orifice can be felt as a smooth opening. [Rept. 8, fig. 1, 2, 3]

In the seventh month the cervix yields more and more and thereby becomes shortened [Rept. 9, fig. 1, 2, 3] and much softer or stronger, the ovum in this month is almost round. it is soft and thick.

In the eighth month the cervix
The cervix becomes more shortened, to between four or five lines. (Rept. 12. Fig. 7.)

In the ninth month the cervix is shortened to nearly three lines and points to the concavity of the sacrum.

In the tenth month the cervix is completely obliterated or nearly so, the orifice of the os is felt round, small and firm. (Rept. 12. Fig. 1, 2, 3.)

The uterus commences to increase immediately after conception, it doubles its size during the first and second month - the edges begin to be rounded.

At the end of the fourth month the fundus can be felt immediately above the pubis.
like a ball and very hard; the vessels and nerves begin to be distended and more numerous. [See Rep. 10.]

In the fifth month the fundus reaches between the os pubis and umbilicus; it begins to incline forwards there by raising and throwing back the cervix, and so—the blood vessels increase still more and form many anastomoses with each other especially where the placenta is attached. [Rep. 10.]

In the sixth month the fundus has reached the umbilicus and now commences to have more of the oval form.

In the seventh month the fundus extends to the breadth of two or three fingers above the umbilicus. The cervix is raised.
raised, and points to the cavity of the sacrum, the arteries and veins still increase and pierce the substance in every direction. The muscular fibres become visible of which the uterus wholly consists in the latter months.

In the eighth month the uterus generally inclines toward the right side. The fundus reaching midway between the umbilicus and Epigastrium. (Rept. 10)

In the ninth month we find the fundus at the Epigastrium, still retaining the egg-shape. (Rept. 10)

In the tenth month the uterus generally sinks so far, as to reach the level where it stood at the eighth month, here it remains. It has assumed quite the shape of an egg. (Rept. 10)
Development of the Ovum and Fetus.

In describing the development of the human ovum, we need not dwell upon the Physiologic and experiments of how it leaves the ovary and passes through the Fallopian tube; but begin our description from that time when it is passing from the mouth of the Fallopian tube into the uterus.

The ovum at this time consists of two membranes peculiar to the Fetus, the Amnion or internal, and the Chorion or external.

The Amnion or internal contains the embryo and liquor amnii; it is much smaller than the Chorion; on its internal surface where it is in contact with the liquor amnii and embryo it is very smooth, but...
on the choroid, or external
surface it is not so smooth;
on account of its being much
smaller than the chorion.
There is a space left between
the former and latter membrane
in which we find the vesicula
umbilicalis and allantois which
sometimes causes a watery se-
cretion between these membranes
and named the spurious liquor
amnii properly called the liquor
allantoides. If on examining
the uterus immediately after
conception, we find a thick, hu-
manic semisolid secretion which
lines the whole of the internal
surface of this tissue and also
covering the mouths of the
Fallopian tubes; as pregnancy
advances this secretion becomes
condensed and forms a mem-
brane (Rep. 18, fig. 1) which is
named the membrana decidua.
When the ovum
is
entering the uterus from the Fallopian tube, it pushes that part of the membrane which lies in front of the mouth of the tube before it, which forms a third covering (Rept. 83) for the ovum, this is called the Decidua Reflexa, on account of its being a reflected portion of the Decidua vera.

The chorion is the proper external covering before it enters the uterus; it is a thin transparent membrane; on its external surface it is supplied with tufts of arborescent villous processes, hence its name of shaggy chorion. [Rept. 87, Fig. 2] These, according to Lobstein, are veins during the early part of gestation; and that these loose tufts of venous vessels, absorb nourishment for the ovum. They increase in size and number till the third month, when
when they begin to disappear from below upwards; the part where they disappear becomes smooth, they remain puffed up, that part where the umbilical vessels are, and enter into combination with them and here they become developed and unite with these vessels. At the part of the Chaoiow along with the Decidua is found the Placenta. The Chaoiow here is much thicker than at any other part of it [See Fig.13. Fig.3]

Professor N. Boër observed that upon examining the living membrane of the uterus at a very early period, when the decidua was still in a puffy state, that its villi were still much elongated, and that round these villi there was a substance not organized but effused, and that this System of Midwifery by T. Bigby, M.D.
The uterine vessels penetrated through this substance, and formed a number of little loops round the villi; thus anastomosing with each other, but he could not distinguish the arteries from the veins.\[Fig.6\]

The Membrana decidua differs in its arrangements from that of a serous membrane, in as much as it is not reflected, so as to cover the chorion but at the point of reflection it is continued on the chorion externally where it forms the placenta, so that the chorion is inclosed in all directions by the decidua; the placenta begins to be formed about the end of the second month (Fig. 2 b).

In the first eight days there is little to be distinguished by the naked eye, except the

shaggy.
Shaggy chorion, about the size of a pea. [Rep. 16, Fig. 2]

At 12 days we can trace the embryo inside of the amnion like a small gelatinous body resembling much a small maggot. It is of a whitish colour and can be dissolved in water. It is bent like a crescent, we can also discern the umbilical vesicles, as also the reticulated mass of the allantois. [Rep. 16, Fig. 2]

At three weeks we find the head separated from the trunk by a small notch. The vesicular umbilicalis is now about the same size as the embryo; the amnion is increasing & a greater quantity of liquor amnii is present. [See Rep. 16, Fig. 3] and is now about 2 lines in length. [Rep. 16, Fig. 3.]

At one month that part...
of the embryo which is to be

come. The head is now thick-
er and rounded, we also

perceive a notch for the mouth

- The extremities begin to ap-

pear, as also the umbilical
cord; the vesicula umbilical-
alis is now much smaller
in proportion to the size of
the embryo. [See Plate 46, Fig. 41]

At the end of six weeks, we

find the embryo better formed;
the orifices are as yet scarce-
ly observable. The extremities
are more prominent — the

umbilical cord is longer and

thicker, beginning to to be —

spiral. The vesicula umbili-
calis is now found at a great-
er distance from the embryo,

and much smaller in propor-
tion. The head is round

and separated by a notch
from the trunk. It is between
10 and 12 lines long, the cran-
imium is divided by the
Sala\textsuperscript{e}d Brain is fluid, we
also observe little dark spots
for the eyes, no Blood can
be traced in the Embryo, it
being semi-transparent. See Rep. Fig.

At the end of two
months the head is in pro-
portion to the body, we
may observe little depressions
where the ears are to be form-
ed, the nasal and oral orifice
is now observable but they
both form as yet one cavity.
The abdomen is disproportionately
larger; the umbilical cord is
short and thick.

In the Third Month.
In the first half of this month
the head becomes rounder
the foreheac is a little pro-
minent, the Brain fluid,
the nose is broad and al
little raised, and we can trace the nostrils as lengthened slits, divided by a partition, the eyelids and lips begin to appear as thickened bodies, the orifice of the ears appear as little longitudinal openings, a thickening is formed behind and before, which afterwards forms the external ears. The belly seems to project a little, the umbilical cord begins to be tortuous, the umbilicus is further away from the sexual organs, which are seen distinctly, but the clitoris seems still to be very long, so that the difference of sex is not easily distinguished. The superior echinements are more developed than the inferior, although the arm is far shorter than the forearm, at the extremity of which the different
different fingers are also visible. Upon the inferior extremity the thigh and leg are visible, but the foot can scarcely be distinguished.

In the second half of this month in eleventh or twelfth week the eyes are covered by the lids. The nose is more distinct and protrude more, the ears are more developed, the neck is formed, the thorax is closed, and the organs of generation more easily distinguished.

In the second half of this month, in eleventh or twelfth week the eyes are covered by the lids, the nose is more distinct and protrudes more. The ears are more developed, the neck is formed, the thorax is closed, and the organs...
organs of generation more easily distinguished. In the upper extremity the arm is in proportion to the fore arm, the hand is broad, the fingers thicker and the points have begun to be osificed. In the inferior extremity we observe the thigh longer being in proportion to the leg; the feet and toes are scarcely formed and the nails appear like scales of skin. The legs are bent back upon the thighs and the thighs are drawn back upon the belly. At the end of this month the embryo is about 3 1/2 inches long and weighs about 3 oz.

The ovum or bag of membranes at this time is between the size of a hen or goose egg.

In the fourth month.

In the first half of this
This Month, the changes do not make such progress as in the second half of it. All the parts are formed into better proportion with each other, although the form is not yet well settled. The eyes are as yet closed. The ears, mouth, and nose, are more developed. The external organs of generation are so far formed that we can distinguish what sex it belongs to. In the male we can perceive the scrotum with its seam; the penis is not as yet protected by a prepuce. In the female the clitoris is as yet very long, but we can trace the external lips; the extremities both sup. and inferior are more proportionate to each other, the fingers and toes are better formed. The Brain consists of five masses; two of these form the Corpora quadrigemina, which
which are first developed ac-
cording to Siebold and 
Belfrage.

At the end of this month the embryo is from five to five and a half inches long, the Umbilicus is larger and twisted, the Placenta is also formed. [Rept. Fig. 1] In the fifth month all the different parts of the fetus are more in proportion with each other; the head begins to turn hairy, and the edges of the different bones of it can be distinctly seen, the eyes are as yet closed, but the eye brows and eyelids are marked by hair, the lungs are small and whitish, the auricles of the heart are not distinguishable from the ventricles, the Brain is smooth, not convoluted, eyes closed by Membrana papillaris, the external ear is almost.
perfect, the nose is still more prominent, the nostrils point downwards and are divided by the septum nasi, the belly does not protrude so far as formerly, the penis is as yet uncovered by the prepuce; and in the female we find the external labia major and the clitoris lying between them; both the superior and inferior excretories are complete, the parts are perfectly distinguishable and upon the skin we find a number of white hairs. (Antigo)

At the end of this month the foetus measures 9 1/2 inches in length, and weight from 10 to 12 oz. The uterus is at this time about 5 or 6 inches in length, the Placenta is completely formed; motion is for the first time perceived in this month by the mother.

In the sixth month
The feto seems to be more
pounded, having lost all the
wrinkles by the deposition of
fatty matter under the skin—
the hair of the head becomes
darker, the membrane papil-
lairis begins to disappear and
the eyes are as yet closed by
their lids, the scrotum is as
yet empty, and the nails have
become faster. The skin has
a reddish color, the cerebel-
tum is corrugated by the hemi-
spheres of the cerebrum project-
ing over it, the spinal medulla
has still a canal in it, filled
with a fluid, its length is
between 10 and 12 inches. The
half of it corresponds with
the xiphoid cartilage.

In the seventh month
the principal change which
takes place is the proportion:
ral increase of the different
parts.
part of the Body, the child born in this month may be considered viable, the head is covered with numerous hairs, the nose is more prominent, the external ear is larger in the latter part of this month; the testicles pass through the external abdominal ring and enter the peritoneum. Meconium is found in all the intestines.

The fetus measures about 14 inches in length and weighs from 2 to 3 lbs. The middle of the body is between the xiphoid cartilage and umbilicus.

The brain begins to be convoluted. [See Sept. 18. Fig.]

In the eighth month, or between the 29th and 30th week, we find the fontanelles rather larger and softer; the eyes are opened, the membranes pupil.
The hair of the head has a fixed colour, the different joints are now quite visible, the skin in the neighbourhood being folded in different directions, the nails of fingers and toes are now stronger. In the male we in general find one of the testicles descended into the scrotum, being principally the left one, the scrotum is very red. In the female we observe the labia pudendi formed, the clitoris is still proportionally longer. The fetus measures at the end of this month 16 inches and weighs from 3 to 4 lbs.

In the ninth month or between the 33rd and 36th week we generally find the hair of the head half an inch in length, the bones of the head are more approximated on account
account of which the Fontanelles become smaller, the Membrana Periostea has now altogether disappeared, the under jaw is more prominent which gives the face a more pleasant look, both testicles are now formed in the scrotum. The penis is covered by the prepuce, the nails are completely formed, we also find hair upon the skin especially at the back of the neck and shoulders. The length of the Fetus at this time generally measures from 10 to 20 inches. It generally weighs 7 lbs. The Mesial line corresponds with the Umbilicus. See Plate 1, Fig. 1.

In the tenth month or between the 37½ and 46th weeks the Fetus had arrived at maturity, the different parts of the body assume a nicely rounded
appearance, caused by the deposition of fat, the hair of the head, eye-lashes and eye-brows is longer and thicker.

The different tones of the head are close to one another, the mouth, nose, eyes and ears are all perfectly formed; the chest is properly vaulted.

In the Centre a little depressed, and on both sides of the chest we observe the nipple.

The extremities are in perfect proportion with each other, and with the rest of the trunk. The nails of the fingers and toes are now fully formed and project over a little beyond the ends of them.

The Scrotum appears rounder, not so red and contains both testes. In the female the external labia conceal the labia pudendi from our sight.

The clitoris does not project so much
which. A fetus, at the full time measured from 19 to 21 inches in length and weight from 7 to 12 lb. Some cases are on record where they have weighed from 15 to 16 lbs. [Sep. 1739]

Size of Head.

The size of the male head is generally larger than that of the female! According to Dr. Joseph Clarke who mentions that it is a twenty-eighth or thirtieth part larger.

The longest diameter is from the vertex to the chin, nearly 5 inches.

From the root of the nose to the vertex measures four inches.
From the chin to the central portion of sagittal suture measuring also four inches.

B. Phil. Trans. vol. 76
From the one parietal protuberance to the other measures from 3½ to 3½ inches in length.

From the nape of the neck to the crown of the head measures 3 inches and a half.

From one temple to another is 2½ inches.

From one mastoid process to the other along the base of the cranium is about 2 inches.

These are the general dimensions of the fatal head, but they may be found to differ on account of the bones being easily pushed out of their places.

Motions of the Statue.

These are divided into two...
sets, the active and passive or ballottement by the French.

The first or active can only occur when the fetus is in life, being caused by its own action.

The second or Ballottement are produced by external causes and can take place whether the fetus be alive or dead. These movements are of the greatest importance in ascertaining a pregnancy especially in concealed cases.

Active Motions.

In the purpose of ascertaining the active motions of the fetus, Dr. Long Kennedy recommends the patient to be placed upon her back, the upper part of her trunk raised, and her legs drawn up so as to relax the abdominal muscles, then by applying the fingers over A. in auscultation & Reg. P.46.
the uterine tumour, and making a slight pressure, the movements will be felt if the fetus be alive.

Dr. Robert Lee states that these movements can be excited by applying the points of the fingers of both hands on the opposite sides of the uterine tumour by slight pressure.

These movements can also be brought about by applying the cold hand, or a hand dipped in cold water to the abdomen. This cannot be recommended nor can the movements be elicited upon if caused by this method, because on applying anything cold to the abdomen a sudden spasmodic action of the muscles takes place.

The movements depend
upon the time when they are felt, and upon the strength of
the fetus; also upon disease as Dr. Naegle asserts that females
imagine these Movements of the Fetus, when in reality they pro-
ceed from disease, as for instance from Flatulence, Intestinal spasm,
Hydatids, &c. These movements are only of use when felt by
the hand of an experienced practitioner. They generally
take place between the 16th and 20th week, and become more dis-
inct as pregnancy advances, but especially between the 4th
or 7th month. Some females feel them much earlier in
pregnancy than others who do not feel them till the latter
months of pregnancy than others who do not feel them till the
latter months of pregnancy, whilst some pass through the
whole time of Utero gestation,
still healthy children are born as stated by Dr. Kuhl, Capuron, Kennedy, Groch and Dauelocque. This shows us that a female may be pregnant without any motion of the fetus being perceived. Hence it is not a sign always to be depended upon. We can rely more upon these if felt by the practitioner than by what the female states herself to have felt.
Passive Movements of the Fetus.

We now come to consider the passive movements of the fetus in utero, these as before stated can be produced by external causes. They may be caused by the mother changing her own position or by its own gravity. In this examination of the movements we must employ both the external and internal manipulation. The former by the French is named ballottement and the latter abattement.

Dr. E. Kennedy for the former of these examinations recommends the position assumed in detecting the active movements of the fetus and then placing our hands extended on each side of the abdominal tumour, suddenly pressing upon it.
it first on one side and then
on another, observing whether
any impulse be imparted to
the fingers by this alternate
pressure. "And if felt," says he,
"will not easily be forgot; it
imparts a feeling the same as
if an football were placed within
an ox-bladder filled with
water, gently knocking it from
side to side."

It is most easily detected
from the fifth up to the seventh
month because before the 5th month
the liquor Amnii is in too great
a proportion to the size of the
fetus, on which account the
examiner is not able so easily
to displace it; and again after
the seventh month, the fetus is
too large for the size of uterus to
allow it to be displaced except
in some cases where the liquor
Amnii is more plentifully secreted.
In these the passive move-
ments
movements may be felt at the eighth month and even at the full time.

This examination requires great caution in doing it because in many cases it is very difficult to detect these movements, whilst in others it cannot be detected at all. Dr. Gorg Kennedy states that a very evident cause for not being able to detect the impulse given by the Fetus is a very scanty supply of Liquor Amnii, also by great tension of the abdominal muscles, binding back the uterus to the spine, extreme distention of the abdomen by air in the Bowels; fluid in the cavity, or cellular tisue of the integuments may produce the same effects.

He also relates a case where he felt a sensation resembling that of Ballottlement produced independently of pregnancy.
owing to an ovarian enlargement.

We now come to consider the latter, or abattement. This examination is conducted by introducing the finger into the vagina and by pushing it up between the bladder and pubis, suddenly raising it in this position we make the fetus rise in the fluid and after a little feel it fall heavily on the point of the finger. The best time for this examination is as the former between the 5th and 7th month, the child must neither be too large nor too small for this operation because if it be too large it has no space in the uterus to rise and again if too small it cannot impart and impulse to our finger.

We may by this, as well.
as well as the former be led into error by disease, and hence must be cautious in our observations.

This sensation may be caused by loose tumours, such as tumours of the mesentery, or any tumours, attached to any of the floating viscera, also ascites.

Keinstein
The urine as a test for pregnancy. Lately the chemical analysis of the urine of pregnant females was considered by D. Mauché of Paris, as a test of pregnancy.

It has been said that if we allow the urine of a pregnant woman to stand from 30 to 40 hours, a white flocculent, pulverulent substance is precipitated, supposed by him to be the casein or principle of the milk formed in the breasts of pregnant females and that by adding a few drops of alcohol, this precipitate is obtained much quicker. A. Mauché also asserts that by this appearance in the urine, he several times detected pregnancy when no other
other signs could be traced. This substance formed in the urine is called Heistine.

Professor Stewart Trail, asserts that the Heistine is not at first precipitated, but rises to the top of the urine and then gradually falls down; this being one of its chief distinguishing characters.

Dr. Ewing Kennedy relates the experiments made by Mr. Kane which were the following. That a white flocculent precipitate similar to that described sedimented spontaneously after twenty-four hours, not only from the urine of pregnant women, but also in equally great quantity from that of a virgin, 14 years of age, and that of a woman nursing for two months. He also states that in all cases of pregnancy A. Kennedy in Reg. and Aux.
The urine was found to contain a small quantity of albumen in its uncoagulated state, although this was not observed in the urine of unimpregnated women contemporaneously examined.

The conclusion to which Dr. Kennedy comes is, the spontaneous deposit of this matter could afford no assistance in detecting pregnancy, and that as to the albumen its validity as a test would be rendered very questionable by the frequency of its appearance as the effect of diet and disease.

Dr. Rigby says in regard to the urine which is an old popular symptom of pregnancy, there is as much variety in the appearance of it, depending on general health, diet, 

A System of Medifying by Temperature

E. Rigby, Page 57.
temperature 90, to enable us to place much confidence in any change of this sort.

Professor Hoth declared that after examining the urine of a great number of pregnant females every month during their pregnancy, but cannot say with certainty that any criterion exists in it, in some he found the urine colored in others like water; he has also examined the urine of non-pregnant females and men. In these he says often saw the same appearances, and also as in the pregnant state, also that he would not like to use this test in diagnosing a pregnancy.

Discoloration of skin, a sign of pregnancy.
consider what value this possesses as a sign of pregnancy, we often no doubt find dark coloured spots in the face and on the neck of pregnant females but this does not at all conclude them to be belonging to that state, for we find in cases of slight indigestion, affections of the liver, and many other diseases, producing frequently spots resembling these. Some authors assert that it is a sign of pregnancy; and others even go so far as to imagine that they by that can tell the sex of a fetus in utero.

Lecat relates a story of a Countess D. who had four daughters, in the seventh month of her fifth pregnancy, the under eyelid became black, after which the forehead, the half of the nose and at last the whole face.
face. Three days before her confinement upon wiping her nose, the handkerchief became black on that part which she had used. She was delivered of a son and nothing more was to be seen, 9 days after her delivery. She had the same appearance in her next pregnancy as also a son; but in her seventh pregnancy the color was very slight. She was delivered of a daughter. He relates several more, and by this means to prove that the colour is affected by the sex of the fetus. This is, as the former, not to be relied upon, because we find it only in a few pregnant females, compared with the vast numbers of pregnancies which have no such marks or discolorations; hence its uncertainty; we also sometimes observe them before the recurence of the catamenia. It has also been asserted.
asserted by some that the whole body of a pregnant female becomes discolorad as stated in Bonnare, Diction. d hist. Naturelle, art. Negre; Professor Kohl says when we observe these spots or discolorations in the face of a female, they are always different in different individuals both in colour and size, the color in some being almost black, in others a light brown or a yellow brown. He has also examined these spots with a magnifying glass and states that it looks as if a fine brownish gray powder had been dusted between fuses of the skin at other times it looks as if the cuticle had been painted by some colored substance.

He also states that if we blister with cantharides such a spot, we in general, but not always, find the Epidermis colored of the same hue. I think we need
we need not consider these any longer seeing that they are of little importance in the investigation of Pregnancy.

Linea Alba

This coloration may also be considered as a very unsure sign of pregnancy, because we find it in some whilst it was wanting in the greater number.

Blood

I may here mention that for some months I carried on a series of experiments on the urine, in order to ascertain whether there existed any real difference
in the urine of pregnant and non-pregnant females, but as yet have not been able to detect any satisfactory difference.

The chief difference which I invariably found was an increase of solid matter. Thinking this to be the case, I imagined it must result from the fibrine of the Blood, which I accordingly examined, but found that it only contained a larger quantity of fibrine than the blood of either a non-pregnant female or of a male subject; in this fibrine I supposed that a greater quantity of nourishment must be held in suspension, and that this might be caused to separate itself from the rest of the blood; the manner in which I thought to procure this separation, was by agitating the blood rapidly the moment it left the artery, or vein.
My supposition is that this substance is only procurable from the arterial blood, if it is to be found at all, before it has entered the uterine circulation, as there it would be taken up for the nourishment of the fetus in a deep vessel either of Glass or Earthenware. I tried several means to agitate it briskly, using swivels and glass rods, but found that these merely separated the pure fibrin, in which the substance I was in search of, could not be found.

The next quantity of blood which I examined was arterial, allowing it to flow into a deep glass vessel, the moment the quantity I wished had been obtained, I agitated the vessel in which the blood was contained very briskly for some minutes and allowed it to coagulate. In about four hours

The
serum had entirely separated from the clot which coagulated very slightly. In the serum I found a whitish milky looking substance intermixed, and tried to separate it from the serum but was unable to do so, soon after it changed its colour and a dirty semi-transparent fluid, beginning to putridify and emitting a most disagreeable odour. I after found, that after the blood had been thus agitated and allowed to pass into this putrid state, that a beautiful reddish, orange coloured gelatinous substance was deposited upon the bottom of the vessel, which retained its colour and transparency after it was allowed to harden. I also would say to state that these may be fallacies, as my last experiments were very limited, owing to my not being able to procure sufficient...
sufficient Specimens of Blood — and also from my being several times indisposed; and the difficulty I found in procuring the Blood of Patients labouring under different diseases: the time of handing in my thesis having also arrived, but shall still use my best endeavours to procure some satisfaction from this in aid of detecting Pregnancy.
In writing upon the use of the Stethoscope as a diagnostic agent in Pregnancy, I scarcely think it necessary to mention anything connected with the history of it, more than that the ancients detected diseases in the chest and abdominal cavity by direct contact of their ear to the part affected.

A. In the year 1763 Dr. Anenzugger of Vienna gave forth in his lectures that by percussion and auscultation disease could be detected in the cavity of the chest, and again in 1800, Cousin made some experiments on detecting disease of the heart by the different sounds heard.

B. This manner of ascertaining the presence of disease, made little progress till Dr. Lennec of Paris, invented the instrument which

A. Invenitum novum ex percussione thoracis hum. et signo obstinato interi pectoris matris, detecte.

B. Traite de maladies du coeur a Paris. Translated with German by Dr. Pennel of Berlin. 1815
he named Aethoscope - after which, auscultation began to excite some attention, especially in Scotland and England. A book was published on auscultation by Wm Stokes of London in 1825, as also by Lejuneau of Paris upon the same subject.

In 1810 it was first employed by Mayor of Geneva, in detecting the sound of the fetal heart, he states that he applied it to the abdomen of a pregnant woman and that he distinctly detected the sound of it. A doubt seems to exist whether he or Lejuneau de Kergaradie, a French Physician was the first to discover it. This is of little consequence to us, but we are most indebted to Kergaradie for the care and assiduity.

A. And introduction to the use of the Aethoscope

B. Archives générales de Medecine 1823.
C. Bibliothèque universelle des Sciences, belles lettres 4e Tome IX. Page 249. Genève, Nov. 1810
which mark the observations which he laid before the Royal Academy of Medicine of Paris, on the 24th Dec 1821. He stated that on applying the Stethoscope to a female near her confinement, he detected a sound like the ticking of a watch; this he recognizes as the the double pulsations of the fetal heart; of these pulsations he counted from 143 to 148, in a minute, during which the Mother’s pulse only beat 70. He also at the same time, detected the position of the child, by having narrowly observed where the sound was loudest; this was proven at the birth. He also stated that the pulsations of the fetal heart are sometimes faster and at others slower.

The next sound which he heard was a blowing or bellowing sound (the couvole) which was isochronous with the pulse of

he
the mother; as these sounds could not arise from the Aorta or the congested vessels of the uterus, especially as they were only detectable at one spot, he concluded that they were the placental pulsations and these he found in different women in different places.

Auscultation holds out many advantages to the Obstetric Practitioner, it requires much attention, care and perseverance, to be able to distinguish the sounds properly.

Many authors advise the use of the ear as preferable to that of the Stethoscope, but, for my own part, I would recommend every one to use the Stethoscope for two reasons. The first is, that a female of delicate feeling always shows great reluctance to allow the ear to be applied to the abdomen, and
and secondly, because we are not always called to auscultate females who are at all scrupulous as to the cleanliness of their bodies, or clothes; we may have to examine females who are labouring under contagious diseases, such as scabies &c., in which case it would be neither prudent nor pleasant to apply the ear so closely.

Hence the advantage of the Stethoscope, as also by this instrument we can hear all the sounds more distinctly, being concentrated into a small space. When we are to examine any female, we ought to have all around us in silence, because we are interrupted by the least noise in such an examination.

Professor Kohl of Halle recommends it to be done very early in the morning or late in the
in the evening. This examination can be made, the female either lying or standing; for such an examination, the auscultator ought to place himself in a position so as not to inconvenience or fatigue himself.

The female ought to be covered either by a long shift, or sheet pulled tightly over the abdomen, upon which the stethoscope must be applied. After listening attentively for some time, we may not be able to detect any sound, it must be removed to another part of the abdominal region, making the female turn from side to side, and in this way we may detect it; the best position of the female is on her back, but this is not always the case, as for instance where the placenta is attached to the posterior wall of the uterus, in such
a case we may most likely hear it better, if the stethoscope be applied to the side.

In applying the stethoscope we must be careful that it rests entirely upon the abdomen, so that no part of it is open to admit air, as it produces a confusion of sound when the ear is applied — one of our hands ought to be pressed against the under part of the abdomen, so as to steady the uterus, whilst we employ the other either to rest our body upon, or to feel the radial artery of the female, that we may compare it with the internal pulsations.

For the auscultation of non-pregnant females, the abdomen ought to be divided in four compartments, the upper right and left and the lower right and left.
In some females, although the stethoscope be applied to the abdominal cavity, we hear nothing but the passage of gas and fluid from one part to another. Again in others we hear nothing the former sound and also a beating in the upper left side, which arises from the Arteria Coeliaca, but here there is no souffle or blowing sound and it is always isochronous with the pulsations of the heart; it is a short-thin beat, there is no admixture of sounds, nor an alternation of others posterior to the beats in this heart. In the upper right side and near the left lobe of the Liver, we hear another beating sound, accompanied by the souffle or bellows sound. This sound proceeds from the left Arteria Coeliaca, being accompanied by the vein, the artery
giving the pulsatory beat, and the sound which accompanies it - the souffle or bellows sound.

In the right under cavity, nothing is heard worth mentioning.

Professor Hohl of Halle states that he has made several experiments upon females, during the catamenial flow, to find out if he should be able to discover any sound in the region of the uterus, but he could not detect any alteration. He also thought that by compressing the abdomen he would produce some alteration in the sound, but he did not succeed in producing any change whatever.

I have considered auscultation as pertaining to pregnant females under the following heads.
I. To detect pregnancy, also to judge of the life or Death of the Fetus.

II. In the ascertaining of the presence of Twins.

III. To decide upon the position of the Fetus.

There is scarcely any perceptible change in the sound of the pregnant or non-pregnant female till between the 3rd and 5th month of Utero-Gestation. Then we begin to hear other sounds along with the former ones of the non-pregnated state, which begin to diminish in intensity till about the seventh month, when nothing but the pulsations of the Matææ and heart are heard, accompanied by three distinct sounds, which arise in the region of the uterus. These are the Placental, Fetal and Tunic sounds.

The sounds then to which our attention is particularly drawn during pregnancy are these, viz., the maternal, being the Uterine and—
Placental souffle, and those belonging to the Fates, comprising the sound of the Fetal Heart and Fetal souffle.

The first sound which we generally hear distinctly is that of the Uterus and Placenta; this sound can in some cases be heard all over the Uterine Tumour, in others, only on a small space, differing in size in different cases. It is very generally heard in the Inguinal regions of either side; it may also be heard in one place and then in another, changing its situation.

The sound which the Uterus emits during the unpregnant state, is the souffle or bellows sound, being synchronous with the Radial pulse of the female: it also resembles much the sound emitted by an aneurismal varix, sometimes louder than at others, accompanied by a beating sound.
and as some authors state, also producing musical tones, mixed with a rasping or filing sound. It might be compared to that produced by applying a hollow-recept to the pal. The principal for pouffles stops periodically like the beating of any other pulse, whilst the modifications and variations in sound continue to be heard, thereby keeping up a mixture of sound without any stoppage. It can be heard in almost every pregnancy, is detected at the time when the uterine vessels increase and anastomose with each other; but it is most distinctly heard where the Placenta is inserted owing to the greater number of vessels composing this part.

We hear it most distinctly from the 4th month and upwards. Towards the end of gestation these tones become much softer, owing to the solidification of the Placenta.
Placenta, and the contraction of the vesicles which are contained in it, but the souffles continue to increase in loudness, on account of the blood requiring more free to pass through the different vesicles.

We most commonly hear this sound in the right upper uterine division, this being the most frequent situation of the Placenta, it is very seldom attached to the left, and still more seldom to the cervix or os uteri. If placed in the latter situation, the sound is scarcely perceptible; according to Dr. Merriman, the Placenta is not attached to the os, once out of 250 pregnancies.

Professor Kohl says, I have convinced myself after many examinations, that this sound cannot be heard in any other part of the uterine tumours, in cases where the Placenta was attached completely or only partially over the os, than Die Geburts-hülftige Exploration. 81, p. 140 on
on that part to which it was fixed, the placental souffle is synchronous with the palp of the mother.

There is another sound which may be mistaken for it. It is that which the French authors term the Bruit de toufflet. It occurs in the abdominal artery and its great branches. This sound can scarcely be distinguished from the placental souffle, it being synchronous with the action of the mother's heart like the placental. The best method to distinguish this sound, being a palpable one, is, that it in general is only observable on one spot; also if it arise from disease by the symptoms which accompany it.

Dr. Kennedy relates a case where this sound was produced by an enlarged liver, the pressure of which upon the artery and its branches caused this effect, in this case, the sound was confined to a small pregnancy & acceleration. P. 74. Space
Space immediately over the Aorta.

The difference in these two sounds is, that in the case of Bruit de Soufflet it is confined to one particular spot, but in the other it can be traced all over the Ulrme Tumour.

Lacenne states that when the Bruit de Soufflet exists in the Aorta, particularly in the central portion of it, there is always a marked state of disorder in the nervous system, such as agitation and anxiety, faintings in one or both complete, and produced by the slightest causes, and an habitually small pulse.

There beg to state, that after examining many females, both in the erect and lying postures, I found that the sounds were always confused more or less by the vessels not belonging to the Ulrme Tumour being pressed by it, I have therefore tried to auscultate females while seated on their hands and knees.


Page 498.
Tense, and as in this situation the uterus does not press on any vessels and hangs entirely upon the Abdominal parietes, the sound emitted from the uterus, namely the Uterine Tactal and Tunic, cannot be confused with any of the other sounds.

The next which comes under our notice is the sound of the Fetal Heart and those of the Umbilical Cord.

Sound of the Fetal Heart.

The sound of the Fetal Heart begins between the 10th and 20th week, but sometimes not till the 15th month according to Naegle.

It has a double sound, the first is followed quickly and regularly by a second; it resembles the sound of the heart of an adult, except in intensity. This differs very much in the same Fetus, being sometimes

Lehrbuch der Geburtshütte. 1875, p. 166.
quick and strong, at others slow and weak. The rate of pulsations of the Fetal Heart being from 130 to 175. Double pulsations and from 240 up to 350 single Pulsations in a minute. In the course of a very short time, these may rise so high as 180, or fall to 90; such differences occur very often, and in general the pulse is raised by the Fetal movements.

This sound cannot be mistaken for any other sound in the body of a pregnant female, it being possessed of a peculiarity, which peculiarity consists in the pulsations never being synchronous with the Maternal pulse. It can in general be heard in the left Upper and Under divisions towards the front of the Uterus, but seldom in the right; whilst listening to these pulsations, they may in a moment, be lost, and again heard in another part of the
The Uterus. This is owing to the movements of the Fetus.

Now a question may very properly be asked here, whether these pulsations are affected by anything which affects the pulse of the mother; according to Hotel and some others it does not, but Dr. Ivory Kennedy asserts that it does. He relates several cases where it was affected by Hemorrhage, Sternotomy, sudden grief or joy. The next thing to be considered is.

The Tonic Truffle.

This sound arises from the Umbilical Cord and is most audible when it passes over and between every part of the Fetal body and the interior wall of the Uterus, or crosses over any protruding part of it. These pulsations are synchronous with the Fetal heart, but possessing a whirring and at other times a

In Reg. & Auscult. —92. Medical
practical sound, combined with the pulsations. Dr. Kennedy and Hohl of Halle state that they in some cases felt the Umbilical Cord through the Abdominal and Uterine Vasculars where they were very thin.

By applying the fingers immediately over the cord where it was resting upon some projecting part, the cord could cause the pulsations on the fotal extremities to become weaker and fewer, according to the pressure employed. These sounds have received the name of Tonic sounds by Dr. Evory Kennedy.

Auscultation in aid of Detecting The Life & Death of the Fetus in Utero.

We all know that it is of the greatest importance to be able to determine whether the Fetus be alive or dead during pregnancy, therefore it is necessary to have certain methods by which we can ascertain this fact.

In Pregnancy & Auscult. p. 121. All The
All the signs which are observable by us, or by the female herself, may be very deceiving. The general belief is, that when movements are felt, the child must be alive, and when not felt that Death has taken place. The female may think that it lives when she feels the passive movements of it, as for instance, it may fall from one side to another. Then again we have cases on record where the movements of the Fetus have not been felt during the whole time of Utter Gestation, and yet living, healthy children have been brought forth.

The principal signs and symptoms which accompany the death of the Fetus or as are felt by the mother are, headache, weakness of the eyes, noise in the ears, and fainting, disturbed digestion, tainted breath, a cold feeling of the Breasts, Genitals and the Uterine Region, with great weight, sudden
sweating and shiverings, emissions of air from the uterus, also sudden gushes of blood from that viscus. The breasts become diminished in size, as also the abdomen, general disturbance of all the functions; but we cannot place much confidence in all these signs, for they are often wanting in cases where the child is really dead, and found in those in which it is alive. To remedy this deficiency of sure signs of the death of the fetus, we take the stethoscope to our aid, by which we can inform ourselves most correctly as to its life or death.

In the first place we know that the fetus is alive, when we hear the following sounds.

First, the quick, sharp, double pulsation of the fetal heart.

Secondly, when we hear the uterine and placental sounds and lastly the tunic sounds.
We may in general decide upon the death of the fetus when the placental and uterine trouble is very weak, or altogether wanting and also if the fetal heart cannot be heard, although some authors assert that we are not justified in stating that the fetus is dead, merely because we are not able to detect the fetal pulse, for they say that this may be occasioned by the position of the fetus at that time; but this can be obviated by changing the position of the female from one side to another, then again to the back. If it cannot be heard in this position, she ought to be placed on her hands and knees. If the fetus be still in life, we must be able to detect it in some of the former positions. The stethoscope ought also to be applied upon different parts of the uterine tumour. We can also judge of the life of the
The Fetus by the Placental Swolflke, which, if the Fetus be healthy, must be synchronous with the Maternal Pulse, both in quickness and strength; but it changes according to the health of the Fetus; if it is unhealthy or weakly, this swolflke becomes weaker, when the Fetus has expired, the Swolflke continues for some time, from a day up to a week, but gradually becomes slower and slower, till at last it is imperceptible.

Some time since, I was asked by a dispensary patient, to attend her during her confinement; the first time I saw her was on the 4th March; she was unwell and in bed, and complained of bearing down pains. When I called upon her, I applied the Stethoscope and heard the Placental Swolflke distinctly in the right side, being synchronous with the Maternal Pulse, and also distinguished the
fatal pulsations in the left side, under the transverse mesial line, which I did not particularly count. Having ordered some Castor Oil and Iod. Murt. Mists upon calling the next day, I found her out of bed and much better. In a fortnight afterwards I was called to visit her, when she stated that she had not felt the child move for a day or two, and also that she had hurt herself, carrying some pails of water. Upon again applying the Stethoscope in every possible direction, I could not detect anything but the Placental Toccule, which was scarcely audible. This satisfied me of the death of the Fetus, and on the third of April, she was delivered of a dead male child. The Cuticle peeled off very readily, and the Umbilical Cord was cut without the slightest resistance. Suturae having commenced.
commenced.

We ought to be very cautious
and guard against every chance
of being led into error by abnor-
mal sounds, these weak Placental
sounds may be produced by the
Placenta being more or less detached
from the walls of the Uterus,
and the Fetal pulsations may owe
their weakness to this Cause.
The position of the Placenta
and Fetus may render these sounds
not so easily perceptible in our
first examination, therefore it has
been recommended to make several
examinations at different times
before we give in our opinion
whether the child be dead or alive.

Twin Pregnancy.

It sometimes is of the greatest
importance that we should be able
to detect whether it be a single
or a twin pregnancy, for this we
also prosecute signs, or in single.

In general.
In general we have all the signs and symptoms which accompany single pregnancy, more quickly developed, greater sickness, accompanied by all the other digestive disorders. — We also observe a quicker development of the size of the abdomen — especially in breadth — also a groove which sometimes runs in a straight line, at others in a curved one, which points out in which direction the twins are placed, also the early appearance of varicose veins, edematous swellings of the lower extremities and also of the external labia.

Females bearing twins cannot with ease lie upon one side or the other, almost always preferring to rest upon the back.

We cannot feel any of the projecting portions of the fates through the abdominal varicities. The uterine tumour does
not always pitch at the end of
gestation as in single gestation.
hence the cervix and os are
with difficulty reached. The
female always feels the Fetal
movements in her sides, which
become exceedingly active when
she lies upon either side. I
stated that at the external
examination we can scarcely
trace any portion of the fetus.
By the internal or vaginal
examination it is much the
same, for on applying our
finger to any presenting portion
we do not feel the fallotement
as in single pregnancy. Then
again the delivery is liable to
be much earlier.

We need not dwell
any longer in considering these
signs, because these the like the
former cannot be depended on.
There are many twin
pregnancies in which not one
of these signs can be traced.
in others
all these signs may appear in a single pregnancy, owing to different causes, such as for instance an unnatural quantity of liquor amnii, or a very large uterus; and in the appearance of the Groove we may also be mistaken on account of its arising from single pregnancy accompanied by disease. The Stethoscope is of the greatest advantage to us in a case of Twin pregnancy. We hear the Placental Tuffle which is spread over a larger surface, it is also much louder and producing more tones than in the single. Each separate pulsation is accompanied by a louder humming sound, which is not perceptible in the single, although in many single pregnancies, the Placenta is very large and does produce a sound which resembles this very much. We have one point more upon which
which we can detect from pregnancy by the Placenta.

This is the distinguishing the insertions of the two Umbilical
Cords, which in most cases, arise at some distance from each other
by which means we ought to have no difficulty in detecting
these two souffles.

Then again we have the
sounds of the two Fetal Hearts;
these can in general easily be
heard, the one in the Left-Upper
and the other in the Right-Upper
divisions of the Uterine Tumour.

In the reverse we also have the
two Funic Souffles which can
be made out by a little care
and attention.

To ascertain the position
of the
Fetuses in Uterus.

To be able to form a correct
diagnosis of the position of
the Fetuses in Utero, it requires us
to have a knowledge of the
different
different sounds heard in the
Uterine Tumour.

If we know the difference
between the Fetal and Uterine
sounds, we must ascertain in
which part this sound is louder
and most distinct. As for exam-
pole, if we hear it most distinct-
ly immediately under the trans-
verse mesial line either on the
Right or Left side, we may con-
clude that it is a natural or
head presentation [as shown in
Sept 20. Fig. 1, B] We may still proceed
further and state that if it be
heard in the left side in front,
the head lies in the first or
fourth position, but if it be
heard on the right side behind,
the head lies in the second or
third position. But if we
hear it above the transverse
line, [as shown Sept 20. Fig. 1, H] we
may infer that it is either a
foot, knee, or Breech presentation.
Again if it is heard low down,
in the Uterine Vagina, as is shown in Fig. 1, it will most likely be a cross or transverse presentation, such as an abdomen, back or shoulder presentation. But I would not say that this can be relied on in all cases—because much depends upon the time at which this examination takes place, whether far advanced in pregnancy or not. Hence we must consider all these circumstances thoroughly before we give an answer in the affirmative.

I will now proceed to give a short description of extra-Uterine Conception.

According to most British Medical Authors, there are three species of extra-Uterine pregnancy. The Ovarian, Tubo-ruminal and Tentral. But according to Belpaire to the three former he adds two more, the Utero-Tubal and Tubal which
which occur in the substance of the Uterus. We will consider each separately and commence with

The Ovarian.

After conception, the Ovum by some defect may remain in the Ovary, where it forms a sac or cyst, in which it attaches itself to some part. Here the Fetus and Placenta become developed.

According to some authors, the Fetus remains in the Ovarian up to the full time, whilst others assert that it ruptures early; or that inflammation and abscess take place, or that the Fetus dies and is converted into a pulp which becomes absorbed, or it excitesdropsy of the Ovarium. The tumour according to Medical writers is by far the most frequent of any extra-uterine conception, and takes place evidently after
The ovum leaves the ovary and enters into the Fallopian Tube, where it also forms a sac or cyst; it attaches itself as in the former to one of the sides of the sac.

It seldom remains longer than two months, when the cyst bursts; the Fetus enters the Peritoneum where it causes the death of the female by Inflammation and Internal hemorrhage. Although in a great number of cases the tube gradually enlarges up to the full time, when it assumes much the same size and appearance of Normal Pregnancy.

Pelvic Pregnancy occurs generally when the ovum has entered the Fallopian Tube, and where, by some cause or other, it passed from it into the Abdominal Cavity. The Cyst or Sac is generally attached to some of the viscera and is usually embedded among the convolutions.
convolutions of the Intestines.

In ventral pregnancy, the Fetus is not only carried to the full term, but for the space of many years together.

Dr. Meig opened a tumour through the abdominal cavity in the twenty-second month after conception. No placenta in this case could be found; some dangerous symptoms supervened, but the woman ultimately recovered.

Dr. Mebel of Heidelberg has a preparation of a Fetus which was retained in the abdominal cavity for fifty-four years. This is the only case upon record of a ventral pregnancy where the Fetus was carried so long.

The signs and symptoms of these Extra Uterine pregnancies are almost the same as those of the Normal — with the exception of the Catamenia.

Mem. of Med. Soc. vol. 4. p. 342
which is very irregular, sometimes disappearing altogether for a number of weeks and then returning.

According to Maurice, Savard, Hunter, Böhmer, Clark, Heim, and many others the Uterus becomes enlarged, the formation of the Membrane Decidua also takes place, the as is hermetically sealed; all the foregoing signs are of little value to us in diagnosing an extra Uterine Pregnancy, as we find that they accompany real pregnancy. The abdominal tumour extends more to one side than the other, it also increases irregularly. Professor Heim of Berlin asserts that extra Uterine Pregnancy always takes place in the left side, also that no morning sickness is observed in these cases.

*Ersterungen und Bemerkungen über Schlundschaften außerhalb der Gebärmutter.* Berlin 1812.
He made some remarks upon a plaintive sort of crying which those females utter who labour under Extra Uterine Pregnancy. Also that he detected in several instances the presence of such a pregnancy immediately upon hearing that cry also that those patients were always obliged to lie upon the affected side.

It has already been stated that a change takes place in the cervix and os uteri, the former becoming shorter, and the latter being more rounded, and that both are twisted from the central line in the opposite direction of the tumour. Baudeloque asserts that extra uterine pregnancy can be distinguished from the normal by external manipulation, in discovering the projecting parts of the Fetus. In general patients...
labouring under Tubarian and Ovarian pregnancy, suffer from severe attacks of pain in the pelvic region, whereas in those who have a central pregnancy the pain extends over the whole of the abdominal tumour.

At certain times may be placed on some of the foregoing signs, but scarcely before the fifth month, and sometimes not even at late as the eighth, for they are very often not perceptible before that time.

We must now consider the use of the Stethoscope in ascertaining extra-Uterine Pregnancy. Some authors assert that by its use we are enabled to decide whether it exists in the Ovary, Fallopian Tube, or Abdominal Cavity; in these cases a placenta is formed as in Normal pregnancy, but that the fœtus are smaller in
calibre, and that the substance of the Placenta is much thinner in itself. Again that
the coats of the Fallopian
Tube assume a muscular
and fibrous texture and
become very vascular. If
the ovary be the seat of the
pregnancy, especially where
the placenta attaches itself,

hence the difficulty of
ascertaining the different
sounds correctly. According
to Böhmer and Melzak in
these cases, the Uterus undergoes many of the same
changes which are found in
the Uterus of Normal preg-
nancy.

B. Professor Höhl of Halle
states that we can hear the
Placental Souffle much earlier
and more distinctly in extra-
uterine Pregnancy than in the
normal state, because there
is less substance interposed.
A. Roth: anal. vol. II. P. 166. Between
B. Geburtshilfliche Exploration. 65. P. 234.
between it and the Instru-
ment, and that this sound
can only be traced in one side,
not as in normal pregnancy
where we hear it all over the
abdominal Tumour. The sound
of the Fetal Heart is also a
diagnostic sign which can be
heard much earlier and clearer
in these than in the normal
state. The reason assigned
for this is that the heart is
not so thickly covered in these
abnormal situations, in the
former it must first penetrate
through the walls of the uterus
(which at this time are very
thick) after that through the
Abdominal Viscera, before it
reaches our ear; whereas in the
latter, it has merely the abdo-
mental covering to pass.

These facts are also attested
by Dr. Schmilt, Frederichs, Abbag
Cases an de Buschet. —

On the difference of Moles from Real Pregnancy

Under the denomination of Mole, many authors have attempted to describe different fleshy and fibrous masses such as Polypi, coagulated Blood which has been retained in the Uterus, until it has to a certain degree been organized, also a slighted Worm, which according to Dr. Rigby, Haderer, Frodrip, La Mothe and some others is the mole; but Dr. E. Kennedy asserts that the fleshy and fibrous masses alone constitute the real mole.

When the Uterus contains one of these moles, it rapidly increases in size, the as is closed as in True pregnancy. This also distinguishes it from Polypi of the Uterus. The Uterus at the end of two months is almost as large as that in real pregnancy in the fifth.

Moles
Moles are generally expelled at the end of the second or beginning of the third month, but if it is not expelled before the fourth month or time of quickening, it increases very slowly according to some authors, and again it is stated by others, that it increases up to the full time. The signs and symptoms in the early months are very deceitful, the most of them being the same as those of normal pregnancy, accompanied sometimes by a sense of weight and pain in the region of the pelvis, also a constant desire to void urine.

The pressure of it occasionally gives great pain. Also most of symptomatic affections accompany it which are observed in normal pregnancy.

The stethoscope in this is of no use to us, as there are no sounds heard in such a case.
Dr. Every Kennedy states that these moles are most frequently found in married females, but that they are not false conceptions, for they have been observed in unmarried females, where no connection could have taken place, and that by recent pathological experiments, we have been shown that teeth, hair, bones, and other animal structures, have been found in some diseased ovaries without any sexual intercourse having taken place, and also found in virgins in the strictest sense of the word.

He also states that by the vaginal examination we can perceive that something solid is contained in the uterus, which does not impart a sensation of Ballottement, nor by the external examination are we sensible of the

The def:  

B. Allow Compendium of Path. Anat. by South
The difference of Hydatids from Real Pregnancy.

There are growths which become developed in the Womb. — They sometimes form clusters not unlike Grapes, in others, they do not cluster in this manner, but are attached singly to the Womb by Pedicles. There have been instances where one Hydatid filled the whole Womb.

Each of these Pedicles contain a quantity of Fluid — which generally is of a Yellowish Colour, but very often found quite pure. This some Medical Authors consider as a portion of Liquor Amnii. Dr. Mauche of Paris states it as being sometimes of a beautiful Pink. It is aqueous or Gelatinous, but never albuminous.

It is not so dense as distilled water, neither acids nor heat coagulate it; it does not affect the vegetable fluids, except an infusion of violets, which it changes into green.
Hydatidise almost always occur in married females and generally accompany pregnancy in which the ovum is blighted; but Dr. Kennedy states that they can also occur in virgins.

They are generally expelled between the 3rd or fourth month, and are sometimes carried to the full time, and that this expulsion is attended by excessive hemorrhage, which continues for some days and even weeks.

Their growth is very irregular, in some cases very rapid and in others the reverse, in the former we find the abdominal tumour—much larger than we would have it in Real Pregnancy, at the same time, this will give us an additional reason for suspicion as to the nature of the affection.

Formerly it was supposed that true Hydatidise had an existence peculiar to themselves and were therefore classed among the encephalo-cysts.
encephaloceles.

Pellegrini, Linnaeus and Peray called them Téna; Hydatigena, but this is now altogether abandoned.

The symptoms which accompany this disease are mostly the same as in pregnancy: cessation of catamenia, but sometimes during their growth a watery fluid tinged with blood is discharged; the breasts are developed, become firm and painful, the stomach is also affected, a pain is felt in the pelvis accompanied by pain, a motion like that of the fetus has also been felt by some females; this arises from some of the hydatids moving over one another when the female alter her position. Dr E. Kennedy mentions something of a sound which he heard in these cases which he names, fruit-soundable an gyaouilement. The expulsion of hydatids
is accompanied by an excessively mucoid discharge, which afterwards may be followed by leucorrhoea and many other distressing diseases.

Ascites may have existed previous to pregnancy or it may be caused by a connected with gestation; in both these cases it is very difficult to make a proper diagnosis in the earlier months.

If this effusion is not very great we may be able to detect the increased size of the uterus.

We must also examine all the accompanying signs and symptoms very minutely; on percussion the sound emitted resembles the striking against a bladder filled with water. We hear this sound all over the abdomen except where the uterus lies close behind the abdominal parietes, we ought also to make our vaginal examination, which will aid us very much in our diagnosis. If any
is detected in the cervix and at Uterus, we ought to proceed with the Ballottement, which will afford us another proof of pregnancy.

The Stethoscopic examinations ought never to be omitted in cases where there is any doubt, for by it as before mentioned, we are enabled to ascertain the different pulsations and sounds.

Some practitioners have mistaken a pregnancy for a case of dropsy and have administered powerful medicines which proved fatal to the child and highly injurious to the mother, while others have proceeded much farther and really tapped the abdomen.

Dr. Kennedy mentions several cases of this kind, one in particular in which the medical gentleman passed the finger through the bladder into the uterus and head of the foetus. The consequence was fatal.
fatal to both mother & child.

The ascertaining of
Pregnancy
from disease of ovary.

The most frequent disorders of
the pelvic and abdominal cavities are those that are caused by disorders which attack the ovaries.

The ovaries are very liable to inflammation and its various consequences, more especially abscess, general enlargement and induration. We also find that it is liable to be affected by malignant diseases, such as cancer, and hematomata, but these diseases have not yet been discovered to originate in the ovary, but in some of the surrounding structures. We also find fatty tumours which sometimes contain hair, teeth, bones and nails. We also find it distended by fluid contained in cells or cysts.
either a large one or composed of numerous small ones.

Of these diseases we find the one most likely to be confounded with pregnancy to be the ovarian Diopsoe.

In general pain is felt in the region of the pelvis immediately upon the commencement of any of the above mentioned diseases. They mostly all are accompanied by the different signs of pregnancy, the affection of the breasts, the secretion of milk, in some cases, jaunness and a shooting pain is felt, according to some only in one breast, in general in that one which is on the same side with the tumour, frequently we find the inferior extremities edematous upon the same side. Also the catamenia is suppressed in some cases, but in general it is regular.

This tumour may always be distinguished
distinguished in the earlier month, from real pregnancy by its position. Upon external pressure being employed it is extremely painful; next by introducing the finger into the vagina we do not perceive the ballottement, the cervix is found to be inclined more to one side than the other. The uterus is also pressed over to the opposite side of the tumour, while if the tumour arose from normal pregnancy, the uterus and cervix would be found in the median line.

When this disease has continued for a long time, and a large quantity of fluid is contained in the cavity, it can be ascertained by the fluctuation - but if the tumour be large and a small quantity of fluid be in it, we must have recourse to the stethoscopic examination in which case, no sound will be transmitted. This is the only...
tumour which towards the eighth month assumes the form and appearance of pregnancy.

The most of the other diseases can scarcely lead us into pain on account of the disturbance created in the constitution, also by the excruciating pain to which the patient is at times subjected. As also being attended by symptoms which indicate disease.
Quickening
and its
legal investigation

This a term made use of when the female for the first time feels the fetal movements. This according to Professor Naegele takes place between the sixteenth and twentieth month.

Dr. Polidori, Conquest, Velleca, Bower, and Burns, state it to take place about the fourth month. Calendar, this difference depends the quicker development of the uterus. It may be rationally supposed that if this development be rapid in a female, she will most likely feel these movements sooner than if the reverse.

It is necessary that we should understand the sense attached to this word by the ancients, and also that of the present day. The ancient opinion...
was that at this time the fetus received life, and acquired a new mode of existence, and indeed the laws of some countries were founded upon this explanation.

We find in many medical works that this feeling is occasioned by the fetus, which at this time has become more developed on account of which its movements were more distinctly felt by its mother.

The theory now in use is that the uterus often becomes too large for the cavity of the pelvis, it enters the abdominal cavity, which accounts for some of the phenomena attendant upon this change, as, for instance, the faintness which sometimes accompanies it, owing to the removal of the pressure upon the veins, and the blood instantly rushing into them, causing a sudden diminution of blood...
in the Brain and this causing the fainting, it also accounts for the difference in time of, and also the total absence in some females of these sensations, by its gradual development and ascent into the abdominal cavity.

Quickening is anxiously looked forward to by almost all females, who either are doubtful of their being pregnant, or those who are really so, and are suffering much from the early symptoms which accompany pregnancy. For when quickening has occurred in the one case the female knows her situation, and in the other is relieved from most of her former sufferings, which is invariably the case.

We shall now consider the English and Scotch law, regarding this question.

law of England.

In examining into the law of England, it will be found that it was based upon erroneous physiological principles, hence it is extremely defective, although its intentions are very humane. On the one side of the question, they are the reverse on the other, for according to them, the foetus does not possess life until it has quickened, or until half of the period of intrauterine gestation has passed.

In the time of Bracton Lib. III. c.11, the law was so stated. If a woman be quick with child, and by any potion or other wise killeth it in her womb, or if any one beat her, whereby the child dieth in her body, and she be delivered of a dead child, though not murder, was by this law, homicide or manslaughter.
Commentators Vol. 1, 1829, state that this enactment, in the modern law, is not considered in so atrocious a light, for if it, this offence is considered merely a heinous misdemeanor, but if the child be born alive and afterwards die from the effects of the potion or beating, it will be considered as murder.

We by this, that the law was very defective, and that it was scarcely considered a crime before the child questioned. If we consider a little we shall be struck with the absurdity of this law, because from the very time of conception we may consider the fetus in life; for we know if it did not possess life from that time, it could not become developed. In 1803 a law was enacted called The Ellenborough act. 43 Geo. III, Chap. 58, 59, by which it was enacted that if any person shall wilfully and maliciously administer
administer to, or cause to be administered to, or take any medicine, drug, or other substance or thing whatsoever, with intent to procure the miscarriage of any woman, not being, or not being proved to be quick with child, at the time of committing, or using such means, then and in every such case the person to offending, their counsellors, aiders, and abettors, shall be and are declared guilty of felony, and shall be liable to be imprisoned, fined, set in and upon the Pillory, publicly or privately whipped or transported beyond the sea for any time not exceeding fourteen years. The same act or
claims that the using of all the foregoing means (with the exception of the use of instruments) with the intent to procure abortion after quickening shall be punishable with death.

If we examine into the
second clause of this enactment
we will observe a greater defect,
which will be illustrated in the
following trial. In 1808 a trial
took place in England of two
persons, William Peirce and Mary
Podd for feloniously administering
a certain noxious and destructive
substance to Ann Cheney with the
intent to produce a miscarriage;
In the trial it appeared that they
had given medicines several times
to produce abortion without any
effect, in consequence of this fail-
ure, Peirce who was the farrer,
introduced an instrument into
Vagina, and in this way destroyed
the child and brought on prematu-
rate delivery. This took place about
die or seven weeks before the full
time. Although the facts appeared
very evident at the trial, yet the
jury brought in a verdict of
acquittal. It was proven by
Cheney herself that repeatedly dur-
ing her pregnancy she had taken

medicines, from the access, without producing the effect, and
finally a few days before her delivery, he took her up stairs
alone, and introduced an instrument into her body. This was per-
formed as the first attempt had not succeeded; and accordingly
after the last one, she had not felt the child move. The counsel
for the prisoner at the trial even objected to receiving that part of
the evidence which related to his manual operations as not relevant
to the administering of medicines which alone constituted the capital
crime. In this case the prisoner
was tried for giving medicines
which had no effect, whilst the
actual one, perpetrated by mechan-
ic means, could only be noticed
in court as proving in what
purpose the medicines were admin-
istered.

With a little consideration
and thought we will see that a
great omission has taken place
in this law, against the procuring
of abortion, after the woman was quick with child; for which reason this act was repealed and another act passed entitled an Act for consolidating and amending the statutes in England relating to offences against the person, in which case the former omission was provided for. It was passed on the 27th June 1820. G. Geo. IV. c. 31. in it was enacted that if any person with intent to procure abortion, the miscarriage of any woman then quick with child, unlawfully and maliciously shall administer to her, or cause to be taken by her, any poison, or other noxious thing, or shall use any instrument, or other means whatever, with the like intent, every such offender and every person, aiding, counselling and abetting, such offender, shall be guilty of felony and being convicted thereof shall be liable, at the discretion of the Court, to be transported for any time
not exceeding fourteen years, nor less than seven years. To be imprisoned with or without hard labour in the Common Jail or House of Correction for any time not exceeding three years, and if a Male to be once, twice or thrice publicly and privately whipped, if the court should so think fit, in addition to such imprisonment.

According to Sir Wm Blackiston, to support an indictment when the woman was quick with child it must be proved; first, that the prisoner administered to, or caused to be taken by the woman, the strong, ye, as mentioned in the indictment, but it seems that the proof of any other substance or anything quidem generis, will be sufficient. | Rev. v. Phillips. 3 Caup. 741

It will not be sufficient however, that the prisoner merely imagined that it would have the effect intended, as in a case where the woman was not quick with child.
but it must also appear that the drug administered was either a poison or some other noxious thing. Secondly it must be proved that the drug was administered with intent to procure a miscarriage. Whether it were in fact, a drug likely or calculated to produce that effect, seems to be immaterial, provided the intent be proved. Thirdly it must be proved that the woman was quick with child at the time of the offence committed. In the case where the woman herself gave evidence, and swore that she had not felt the child alive within her, Laurience J. held, that this evidence took the case out of the statute, although the witness also swore that she was in the fourth month of pregnancy, and medical persons proved that the child is usually alive at that period.

[Signature]

To support

Ivey's Edition of Sir W. Blackstone
Vol. II. Page 198 Notes
an Indictment when the woman was not quick with child, it must be proved that the prisoner administered to, or caused to be taken by the woman, a drug or mixture of some kind, and that he did this with intent to procure her miscarriage. It is immaterial whether in fact the drug or other thing administered were chiefly calculated to produce abortion, or whether the woman was with child at the time or not; it is sufficient to prove that the prisoner, imagining her to be with child, administered the drug or with intent to procure miscarriage. R. v. Philips 3 Camp. 741.

When the Indictment charged the prisoner with having administered a decoction of savin, proof that he administered an infusion of savin was held to sustain the indictment. Id. If it turns out in evidence that the woman was quick with child at the time the drug or was administered, it should
it should seem that the prisoner must be acquitted, for this part of the act extends expressly only to cases where the drug is administered to a woman, "not being" or not proved to be, quick with child, at the time, Exhibit C. P. Little, causing abortion.

It has however been recently decided that the woman must be actually with child, though not quick with child, at the time the drug is administered, in order to constitute any offence, and so far the case of Rex. v. Phillips, cited at above, may be considered overruled.

In the case of Rex. v. Studd, next summer after 1823, the prisoner was indicted for administering a drug to one Susan Clouden with intent to procure abortion, she not being quick with child; the indictment contained four counts. The first charged the prisoner with administering oil of Savin,
to the prosecutrix, she being with child, with intent to procure her miscarriage; the second was the same, only describing the drug as being a mixture unknown; and the third or fourth were like the first and second respectively, only omitting the words "she being with child", the prosecutrix proved that she had been connected with the prisoner, and some months afterwards told him that she was with child by him, which she then believed to be true. That the prisoner then gave her a phial containing some mixture, the nature of which she did not know, which he desired her to take, saying that it was "to get rid of the little one". And she did take the mixture which exceedingly disorderd her, but that she was eventually satisfied that she had never been with child at all. There was no evidence as to the precise nature of the mixture. It was contended that the prisoner
must be acquitted, first, because there was no evidence that the medicine administered was calculated to procure miscarriage; and secondly, because, as the prosecution had never been with child, it was impossible that the offence imputed to the prisoner could have been committed.

Which, a contra, that if any medicine of what nature soever is administered to a woman with the intent to procure miscarriage, the offence is complete; and that it is immaterial whether the woman is with child or not, if that intent is proved to have existed in the mind of the prisoner; he believing at the time the woman to be with child. Garrow, B, after consulting with Lord Ernle, reserved the point for the opinion of the twelve judges, but upon the evidence, and the authority of Rex. v. Phillips left the case to the jury, and the prisoner was convicted upon the fourth Count.
count of the indictment.

In Michaelmas term 1828, the judges met and considered the case, and decided that the conviction was wrong, as the offence was not complete, unless the woman was actually with child, at the time when the drug was administered. \( \text{Ed. Wm.} \)

As Sect. 1352 of the new statute, makes it a capital felony to use any instrument or other means, with intent to procure the miscarriage of a woman quick with child, the crime it seems will be complete, if the intent be felonious, whether the instrument or other means be dangerous or not. The expression "quick with child" means where the woman has felt the child more within her. \( \text{[Pac. 4 Phil. 1, Camp. 74]} \)

For such a crime, we would require a fixed law, and one so constituted that it would deter any party, and by whatever means
from committing such an unnatural and unfeeling crime, if this were not the case, it would become an everyday practice, both by the female herself to avoid shame and exposure, and by the male to avoid himself of the burden of supporting a natural child. When a crime of this kind has been committed in the earliest weeks or months of pregnancy, it ought to constitute a murder, and a law of this kind has been constituted under the statute of

\[ 17 \text{ William III, 17 Victoria C.15, Sect. IV.} \]

Punishment to procure abortion.

And be it enacted, that whoever with the intent to procure miscarriage of any woman shall unlawfully administer to her, or cause to be taken by her any poison or other noxious thing, or shall unlawfully use any instruments or other means whatever with the like intent, shall be guilty of felony and being convicted thereof, shall be liable
at the discretion of the court, to be transported beyond the seas for the term of his or her natural life, or for any time not less than fifteen years, or to be imprisoned for any term not exceeding three years; and by Sect. III of 7 "William II. and 1st Diet. c. 85"

Punishment for Accessories.

And be it enacted, that in the case of every felony punishable under this act, every principal in the second degree, and every accessory before the fact shall be punished with Death or otherwise in the same manner as the principal in the first degree is by this act punishable; and every accessory after the fact to any felony punishable under this act, shall on conviction, be liable to be imprisoned for any term not exceeding two years.
Scotch Law.

Upon this subject the law of Scotland differs materially from that of England. Mr. Hume in his Commentaries on the Criminal Law of Scotland says, that all procuring of abortion or destruction of future birth, whether quick or not, is excluded from the idea of murder, because though it be quick, still it is only part viscerum matrix, and not a separate being, of which it can with certainty be said whether it would have become a quick birth or not.

Since Mr. Hume wrote, a case occurred in the High Court of Justiciary where the subject was discussed; A surgeon and midwife indicted for the violent procuring of abortion, were convicted and sent to Botany Bay for fourteen years.


Hume's Commentaries on the Law of Scotland Vol. II. C. xi. R. 274. 4. 2. 1797.
of a person or existing human creature, wherein is excluded all procuring of abortion, or destruction of future birth, whether quick or not, because though it be quick, still it is only "para discerum nativitatis," and not a separate being, or such of which with certainty it can be said, whether it would become a quick birth or not. It is no doubt true that on the 10th of Nov. 1606, Patrick Ceanor had sentence of death for the slaughter of his wife and a child in her womb.

As also on the 12th Feb. 1631, Thomas Davidson and Effie Gibb, had the like sentence, for the murder of Elizabeth White, Davidson's wife, "and the Bann in her Belly being near to the full time."

And again, there is the case of Patrick Robertson, Dec. 10th, 1627, and Marion Kemphi, for Notour Adultery and the administering and taking of a poisonable draught [as the record calls it] whereby she destroyed the
the child in her womb.
But in all these instances, another
and a capital crime conceived with
the destruction of the child; and it
cannot be known from the whole and
general expression of the record, that
the latter was found present as a
murder by itself: Neither have I found
any instance of that description in
latter times. One case was indeed
stated in some of the English
upon which there may be room
for argument against the prisoner,
in case of a child which is born
alive, but dies immediately upon
the birth, in consequence of evil
medicines which have previously been
administered to the mother. But it
is difficult to imagine, and no
more need be said on the case,
that in these circumstances deici-
tive proof shall ever be obtained
of the cause of the death of the child.
Mr. Alison, one of the latest writers on Scotch law, states it to be as follows: If a person gives a potion to a woman to procure abortion and she die in consequence, this will be murder in the person giving, if the potion given was of that powerful kind which evidently puts the woman's life at hazard." And again administering drugs to procure abortion is an offence at Common Law, and that equally whether the desired effects be produced or not. "Thus cases occurred in 1804 and 1823, where persons were sentenced to transportation for using instruments to produce it, and in 1824 another was condemned to the same punishment for administering arsenic with a like design. Having now considered the offences against the Fetus in Utero and concluded the importance of quickening in point of law, we pass to the next.
The Plea of Pregnancy

in

Cay of execution

English Law.

We now come to consider the se-
cond question regarding quicken-
ing, as viewed in point of law.

In the former dissertation we
saw that the Status in Utero, was
only considered a living being after
quickening. The same takes place
in this for we find according
to Blackstone Vol. 4. P. 394. & 395. That
when a woman is capitally con-
viected, and pleads her pregnancy,
that this is no cause to stay the
judgement, yet it is to desist the
execution till she be delivered. In
case this plea be made in stay
of execution the judge must direct
a jury of twelve matrons or discreet
women, to ascertain the fact, and
if they bring in their verdict quick-
with child, for barely aliveth child
unless it be alive in the womb is not
sufficient
sufficient execution shall be stated generally till the next session, and so from session till session till either she is delivered or proves by the course of nature not to have been with child at all.

It must seem repugnant to the feelings of every man, when considering this law, seeing that in the first place a fetus in utero at fifteen weeks should suffer punishment for the crime of its mother, whilst a fetus at sixteen weeks should be allowed to live. And again that this deciding whether the fetus be quick or not, should be left to the caprices of 12 women of whom it can scarcely be expected to have any knowledge of this circumstance. A question upon which the highest and most learned men in the country are at variance.

It may well be remarked by Sir Paris that the law of the land is at variance with what we conceive the law.
the law of nature. It is even at variance with itself. It is a strange anomaly that by the law of real property an infant in tenera saeclum may take an estate from the moment of conception, and yet be hanged four months after for the crime of its mother. Some cases are related in Dr. Kennedy's auscultation (see page 193 to 205) which show how absurd it is to depend upon the verdict given by these women.

The law of Scotland in regard to this question, as given in Alison's Practice of the Criminal Law of Scotland, p. 454, is, that in Scotland a pregnant female is entitled to have sentence delayed, or if it has passed, to be suspended, till her delivery takes place; and that equally whether she be quick with child or not.
Enuclea of Breast
3 Month of Pregnancy
Nodule of the Breast
4th Month of Pregnancy
Nodule of the Breast

5th Month of Pregnancy
Necula of the Breast
8th Month of Pregnancy
Acola of the Breast
7th Month of Pregnancy
Anoma of the Breast
9th Month of Pregnancy
Fig. 1 shows the uterus in the trimester 4 state.
Fig. 2 shows the uterus and cavity, slightly opened. Conception
Fig. 3 shows the male in the virginal state, a condition after rape.
Continues of this form and appears up to the fifth trimester.
40. Uterus, Up & Gyrus Uteri
35. Uterus, Hysteresis & Gyres
30. Uterus, Abdomen & Umbilicus
25. Uterus, Below Umbilicus
20. Uterus, Pubis & Symphysis
15. Uterus, as Full Abdomen & Pubis
fig. I shows the change in Uterus and Cervix between the Sixth and Seventh Month.
fig. II — the change in thickness of walls and cavity of Uterus.
fig. III — in Old, becoming broader, thin after Seventh (Month).
Fig. I represents the change in the lining and canals at the right hand.
Fig. II shows the change in canals, lining a canal of the vagina at the right hand.
Fig. III represents the slit at the left hand.
Fig. II. Represents the harder obstruction, as also the shape of uterus and vagina.

Fig. III. Represents the change in cavity, the thin walls, and also the opening of the fallopian canal of uterus.

Fig. V. Represents the appearance of the inner end of the fallopian canal of uterus.
Fig. 1. Shaggy, Vascular
of Membr., at
eight days.

Fig. 2.
1. Embryo.
2. Vesicle umbilicalis.
3. Amnion.
4. Allantoid.
5. Chorion.
6. Days.

Fig. 3.
1. Head of Fetus.
2. Body of Fetus.
3. Vesicle umbilicalis.
5. Deux.

Fig. 4.
1. Head of Fetus.
2. Spinal cord.
4. Vesicle umbilicalis.
5. Amnion.
6. Allantois.
7. Amnion.
8. Chorion.
9. The Month.

Fig. 5.
1. Vesicle umbilicalis.
2. Head of Fetus.
4. Vesicle umbilicalis.
5. Chorion.

Fig. 6.
1. Vesicle umbilicalis.
2. Head of Fetus.
5. Weeks.
At 4 Months and a Half.
a. Represents the head of the child.
b. If natural or head presentation.
c. If transverse presentation.