The Evidences of Pregnancy, obtained by the Microscope and the Stethoscope.

James Hutchinson, March 1850.
Illness has prevented my doing that justice to this letter, which I should have wished. It is far from being completed, and altogether does not quite merit the title which I have given it.

The most startling evidence of pregnancy have not been touched upon, and the microscopic have been hurriedly imperfectly discussed.

Since the signs of pregnancy are commonly stated in weeks, and which I had intended to have introduced, have not been noticed.

James Hutchinson.
Among the many interesting questions which almost daily present themselves to the Medical Practitioners for solution, none merit his attention so much, or are of such importance as that which relates to the existence of pregnancy.

Before entering, therefore, into the more immediate subject we have pointed out for ourselves, we shall give a few examples collected from obstetric records of the vast importance of being able under all circumstances to pronounce upon the existence, or non-existence, of pregnancy.

We may consider the importance of the question under several different heads, and:

First. In regard to the Mother.

The life of the mother has been frequently endangered, and as frequently sacrificed by a faulty diagnosis of her condition — one illustration, from many that might be adduced, will suffice.

* Drerkenbach of Berlin performed the caesarean operation on a woman, supposed the pregnancy, and she laboured under to great a deformity, as to include the impotency of the natural delivery of a child.

* London Medical Gazette in 1828.
Many of the first obstetricians of Berlin were present, some of whom had examined and declared the woman the pregnant, and yet, the result of the operation showed, that neither foetus, tumour, or enlargement of any kind, existed.

Secondly, it has frequently happened, from the same cause, that the life of the foetus contained in utero of a woman condemned to death, has been extinguished along with that of its guilty parent. * Mauricen records a case which I shall give in his own words.

"We saw at Paris in the year 1666, a miserable example of this kind, in a woman who was hanged and afterwards dissected publicly.

"She was found the pregnant with a child of four months, notwithstanding the report of the persons who had visited her by order of the judge before her execution, who assured the judge that she was not so. That deceived them was that the woman had menstruated in some degree. This affair made much noise at Paris, that it came to the knowledge of the King and all his court, by whom those persons were greatly blamed, who by their

"ignorance had been the cause of the rash
execution of this poor unfortunate, with whom had
perished her infant, which was innocent of the
"crimes of its mother."

* In another case which happened at Dorwich
in 1833 the life of the foetus would have been
sacrificed with that of its mother, if it had not
been for the timely and judicious interference of the
surgeon of that city.

A woman, named Mary Wright, was clearly
proved guilty of poisoning her husband, and was
condemned to death; but she pleaded pregnancy
in bar of execution; a jury of matrons was
appointed to ascertain her state, and they declared
that the woman was not quick with child, the
judge therefore ordered the sentence to be enforced.

The surgeons of the place, however, fully alive
to the absurd method adopted to ascertain an
extremely difficult point of diagnosis, and one
involving the life of an individual in its
accuracy, voluntarily waited upon the convict in
the jail on the morning following, to satisfy
themselves, that she was not only pregnant, but

* Medical Gazette. April 1833.
quick with child, they, therefore, immediately, forwarded to the judge of assizes their opinion, which was respected, and the execution was ordered to be delayed till the delivery of the woman, which was safely accomplished some time after.

Thirdly, the importance of our subject cannot be better illustrated perhaps, than by stating that the reputation of the female, which to some minds is dearer than life itself, may have a permanent cloud cast over it, by an inaccuracy or incautious statement, on the part of the medical attendant. Dr. Kenn of Dublin judiciously remarks, that the character of an innocent female has been often sacrificed by ignorance, or the imperfection of science.

Fourthly, the diagnosis of pregnancy, comes to be a
matter of great importance, when it concerns the
security or life of property.
In cases, unfortunately, numerous are recorded where
the claim to property has been disputed from the
following circumstances. The husband dies,
shortly after marriage, leaving no children or
bequeathed his property to his nearest relative, but
the widow declares herself the pregnant or clay in a
claim to the property for her yet unborn child. The
opposite party are therefore anxious to know whether
her statements are correct, and for that purpose
appoint well qualified persons to ascertain her
condition. These cases have sometimes resulted
in the overlooking or non-recognition of pregnancy
when it really existed, in the detection of grand
then practiced, or in ascertaining the true existence
of pregnancy, and thus obtaining a just decision
of the case in favor of the widow.
A case in illustration of the last is given in
the Medical Gazette for August 1835.
Mr. Fox of Uppaxelas died in May 1835 leaving a
widow to whom he had not been married much above
five weeks. His will, executed in the preceding
January, decreed that his property should go
to the use of his friend Ann Bakerwell, and after
her decease to John Marston. Mrs Ann Batewell soon after became the wife, and is the present widow of Mr. J. In his decease she announced herself to be with child and entered a caveat against the presumptive legatee Mr. Marston; whereupon the latter immediately applied for a writ "to
ventre indurientes." Her statement of her condition was confirmed by those appointed to examine her, and subsequently by her giving birth to a child. The case was therefore decided in her favor.

5. Montgomery, in his work on the "Signs of Pregnancy," relates a similar case, but where grand joe was practiced by the widow.

She had been about four months married to an elderly, and, as it was asserted, an impotent man, when he died, having before his marriage, made an arrangement of his affairs in favor of his son by a former wife. On his death the son proposed to take possession of the property at once, to which the widow objected, saying that she was pregnant, and had a claim to right of her child. It was agreed between the parties that the existence of pregnancy should be determined by
reference to medical men chosen on each side, but before anything further was done, the lady contrived to effect the sale of the greater part of the property, and, appropriating the proceeds to her own use, disappeared, leaving the parties concerned to settle the matter as they best might. The event proved that she was not pregnant.

Fifthly, an accurate knowledge of the signs of pregnancy is sometimes necessary for the detection & exposure of impostures.

*The case of the aged virgin prophetess Joanna Southcott is well known since it occurred in comparatively recent times viz in 1814. She astonished alike her town and nation by declaring herself to be pregnant, and that by supernatural means, her case therefore excited an extraordinary degree of attention, and many medical men were consulted about her.

She was 64 years of age, and had ceased to menstruate for 15 years—her bottom &

* Gooch's diseases peculiar to women.

p. 231.
Wells were much enlarged, and she stated
that she had felt the motions of the child even
since the month of May. The state of the
cervix and uterus were not ascertained, for
she would not submit to an examination
herself, stating as her reason, that
"her weak spirit had caused her not to
submit to it." But notwithstanding
the enlargement of the breasts and abdomen
was to eviscer, and the apparent motions of
a child, so perceptible, that Mrs.以上
Adams declared her to be pregnant.

However it was, soon apparent that her death,
and neither labour approached - the swelling
began to diminish, and before the close of the
scene had considerably diminished - and on
examination of the body which was only
permitted after it had lain four days in the
warm hope of its reviving - the womb
was found smaller than natural and free
from disease. And in its interior no
fetus existed. "The abdominal paries
contained four inches thick of fat, the
intestines were distended with air, and the
omentum which was nearly four times its
actual size appeared one lump of fat" but there was no trace of the tumor which had been felt during life, and which is supposed to have been produced by the aged organ having learned to retain the urine until the bladder became considerably distended, and to imitate the pelvic movements by a jerking movement of the abdominal muscles.

* Smellie mentions a case where deception was practiced in order to procure money. I shall give it in his own words.

"Some years ago I was solicited by the "indigent" Mary Lee, Bow workhouse girl, "to visit and see a girl about 12 years of "age, supposed the 8 months gone with a "child. She told me that several midwives "had examined her, that one of them had "offered to deliver her gratis, and one other "had made great interest the present at "the occasion. I accompanied the midwife "and first examined the external parts, then "finding the passage so small, that I could "not introduce the tip of my little finger.

* Smellie. Vol II. p. 220. 1766."
"I made no hesitation in declaring, that the
had never conversed with man. I found
a large swelling behind the Scrotum
condes and the neck which appeared like
the hair very much enlarged. The interior
it could not be, for I pushed my fingers
immediately below it and pressed on the
abdominal fascia almost to the vertebrae
of the loin. The girl had been advertised
the nation had got money from bankers
who went to see her and notwithstanding
my declaration, the force was carried on,
until people began to suspect the deceit,
when she was sent to one of the hospitals
the cause other hepatic disorder".

Saidly. The only other circumstance is that
notice which renders the diagnosis of pregnancy
a matter of considerable importance is in relation
to the treatment of cases of Pseudo-Pregnancy and
complicated Pregnancy. In cases sometimes
occur where the morbid condition which
stimulates pregnancy is of an extremely urgent
nature; and yet were it is hopeless that
the disease may be unknowingly allowed to
extend its ravages from the general similarity of the symptoms to those of pregnancy + labors. A most instructive case in illustration of this point happened in the year 1844 in the practice of Mr. Barbieri of Trieste - it was a case of uteritis which strongly simulated pregnancy + labors at the full term - the symptoms of the disease were those commonly referred to pregnancy + labour, and at one time bore to great a similarity that the surgeon was nearly induced to believe that the case was one of true labour - he however formed a different opinion from noticing the absence of the characteristic glandular foliage at the base of the nipples. Taking this in connection with the urgency of the general symptoms, he put in practice a heroic treatment, which the subsequent history of the case proved was demanded. The patient sank, however, under the violence of the disease.

Again, when cases of ascites, obstructed menstruation or typhoiditis simulate pregnancy, it is important to ascertain whether the symptoms are not due to pregnancy.
so that the treatment adopted in each particular case may be followed out.

But while we are aware that these diseased states may simulate pregnancy, to be mistaken for it, we should also know that pregnancy may be mistaken for them. There is a case reported by Sir Astley Cooper, where the pregnant abdomen was supposed to be tapped by an ignorant practitioner. And Dr. Gooch mentions that "a woman was taken into the operation room of a well known hospital for the purpose of being tapped in supposed absence of the ovary, but the surgeon, on learning that she had not been examined, sent her back to her ward: this caution", adds Dr. Gooch, "was fortunate, for before the next operation day she brought forth a child."
II. Under this, the second division your subject we intend to speak shortly of the difficulties which often attend the accurate diagnosis of pregnancy. These difficulties arise from numerous causes which may best be classed under the following heads:

1. When the existence of pregnancy is masked by the presence of disease, termed by Dr. Kennedy complicated pregnancy.

2. Where other morbid conditions simulate the presence of pregnancy, termed by the same author, Rheno Pregnancy.

And 1st of the difficulties which attend the diagnosis of pregnancy these complicated with disease.

The first disease we shall notice, which sometimes complicates Pregnancy, and renders its recognition a matter of some difficulty is Ascites.

One of the chief difficulties that may arise or proceed from the Practitioner placing the existence of pregnancy out of the question, is supposing it possible that a woman labouring under ascites could become pregnant. However this disease, though it depends on an organic lesion does not at all prevent the possibility
of the occurrence of pregnancy, for females have been known while labouring under this disease to have borne many children.

The general abdominal distension concealing the enlarged uterus also adds to the difficulty.

* D. Montgomery mentions a case where pregnancy complicated with ascites, owing to this cause, remained a matter of the utmost doubt until the seventh month.

The dangers which may arise from this complication proceed from treating the ascites, while the existence of pregnancy is never recognised: therefore, it is laid down as a general rule, by the best authorities, that "whenever a woman is so circumstanced that she may possibly be pregnant, she should not, in any account, be tapped for ascites, or subject to any active treatment until a full and accurate examination of her state has been made by competent hands."

2. Droopy of the uterine. A condition produced by an overabundant secretion of the ligamentum

* D. Montgomery's Signs Of Pregnancy.

p. 177.
which collects between the membranes, sometimes renders the existence of pregnancy a matter of considerable doubt. When it exists in large quantities, it may give the appearance of ascites, but more frequently it is confounded with ovarian dropsey.

3. Various hydatids & moles. Sometimes complicate pregnancy, more frequently those cases where the ovum has been blighted. To ascertain their presence is an extremely difficult point of diagnosis, and no precise rules for the purpose are laid down.

4. Another class of cases liable to complicate & mask the existence of pregnancy are tumours of the ovary: it must be remembered that the presence of these tumours does not prevent the occurrence of pregnancy.

Sir Montgomery mentions a case, where a lady with ovarian enlargement on both sides, "and of considerable size became pregnant" and her true condition was not recognized "until pregnancy was very far advanced." The difficulty in the diagnosis of pregnancy with this complication is chiefly in the early
months. * Dr. Kennedy gives an interesting
instance of this complication, and the difficulty
which sometimes attends its diagnosis.
I shall give it in his own words.

"Honor McKen - aged 38, married for 6 years,
has had no child, but about four years ago
was married at the 4th Month - called on the
5th of January & consulted me about a tumour
in her right iliac region, which continued
painful and caused her considerable uneasiness
from its situation.

It first appeared about the beginning of October
preceding, twice which time it had been gradually
increasing in size; her mentor ceased about
the time she first observed it. On examining
her abdomen, a tumour was distinctly percep-
tible in the right iliac region, hard & tender,
about the size of a goose egg, and very
movable; there was a fulness to the left
of this, which appeared somewhat like the
"detended intestines, and which was quite
unconnected with the tumour in the right side.
On questioning her at the hospital, after

* Dr. Kennedy's Evidence of Pregnancy
p. 146.
being pregnant, she seemed never even to have suspected it, or she were had any of the signs usually attending this state; farther than the sensation of the membranes, which she very naturally concluded might have been connected with the tumour in the right side, never having herself observed the pulsing in the left which was general, and therefore more likely, escape her notice.

She states, that she is, and has been, in constant intercourse with her husband ever since her marriage. As the case appeared one involved in considerable mystery, I begged Mr. Collins to see the patient with me, which he did; and after patient examination of the tumours, exploring the uterine, and learning the history of the symptoms, a conclusion arrived at, was, that with the ordinary means of diagnosis, no person could say with certainty, whether she was, or was not pregnant, although it might be conjectured that such was the case.

5. A tympanitic distension of the abdomen sometimes accompanies and obliterates the
pregnant state, and while the distention, which
is sometimes enormous is present, all
abdominal examination with a view of
detecting the uterus is useless, particularly
in the early months of pregnancy. The
sympathetic distension should be first removed
by the exhibition of warm purgative medicine,
and then the diagnosis becomes more easy.

Dr. Kennedy narrates a case where a lady
requested his attendance at her approaching
confinement in Nov. 1829. Her medical
attendant, who had recently treated her for
pelvic拉着, having told her that she was
short of her full time. She herself states
that she quickened 6 months ago, and
had since then felt the motions of the
child frequently. However on the
application of the stethoscope, neither fetal
circulation, nor the placental trouble could
be detected; and on making a vaginal
examination, the neck of the uterus was
found elongated, and very little enlarged.

Dr. Kennedy therefore gave it as his opinion
that she could not be more than two
months pregnant; if so much; and if
was subsequently confirmed.

6. Tumours, especially of the hard fibrous kind, which are so common to the uterus, occurring either on the surface, or imbedded in the substance of that organ; may be expected sometimes to complicate pregnancy. But it is only when they attain to a large size, that difficulty is felt in the diagnosis. "When such tumours acquire great bulk, and pregnancy occurs, they give rise to a combination which imposes extraordinary difficulties in the way of forming a correct diagnosis." The difficulty in these cases arises from the distended state of the uterine abdomen, to the extreme tension of its peritoneum, rendering it often impossible to recognize, externally, the exact form or condition of any of the contained organs, and the obstruction of the pelvic cavity may be such as greatly to impede, or even altogether prevent, the possibility of making an ordinary examination her vaginas.

Dr. Montgomery records a most interesting instructive case, where pregnancy was
complicated with an immense fibrous tumour of the uterus. But the existence of this state was rendered almost incredible by the following circumstances.

1st. Several years of married life without conception.

2nd. A pre-existing mobil tumour in the abdomen, which, even at the time of marriage, was of such size as to render the contumaciation of that rite nearly impossible.

3rd. The continued growth of the tumour, which, long before the occurrence of impregnation, filled the cavity of the pelvis as to impede strongly the introduction of the common catheter into the bladder.

4th. The impossibility of making an examination per vaginam.

Having now noticed the difficulty that may attend the diagnosis of pregnancy when complicated masked by other diseases, we may speak shortly of the 2nd head, viz. Ovarian Pregnancy, or Pregnancy stimulated by certain morbid conditions, either
corneal or mental.
The first we shall notice is in connection with the function of menstruation.
Menstruation then suppressed, or prevented from returning as usual after it has been established in a morbid state which has been frequently mistaken for pregnancy; for whether dependent on other diseases, or on the state of the uterus itself, it causes those morbid sympathetical changes in the other organs of the body which are analogous to those produced in the course of pregnancy. This will be evident by shortly stating the symptoms which have been noted to be concomitant with retained menstrua. These are an altered expression of the countenance, dark ring under the eyes, sickness of stomach, tendril, fulness of weight in the pelvis, slow state of the bowels, and often pain and distension of the breasts, with darkened areola of tumid abdomen.
These symptoms are very analogous to those noticed in pregnancy, and may therefore mislead in the diagnosis.
Smelbye says "The difficulty of distinguishing
between obstructed menstruation & pregnancy in the first months is so great, that we ought the caution in giving our opinion. And never prescribe such remedies as may endanger the fruit of the womb, but rather endeavors to palliate the complaints until time shall discover the nature of the case.

In some cases of supposed amenorrhea, not only pregnancy, but actual labour has been pronounced the present. In illustration of this, there is an interesting case by Dr. Kennedy. An unmarried girl aged 18 was sent to the Lying-in Hospital by the direction of an eminent surgeon by whom she was pronounced pregnant, and in active labours. Her respiration in the ward attracted attention, and on examining her, the abdomen was found distended and tense, but no part of the child could be distinguished through the abdominal parietes. On applying the stethoscope none of the characteristic sounds of pregnancy could
be heard. — Then the abdominal muscles relaxed from the state of spasmatic contraction into which they were thrown, the uterine could be distinctly felt, and with no interme-
tumour intervening — she was freely pressed, and in consequence there was brought on a species menstrual discharge, and all the signs of pregnancy quickly vanished.

In another case, the details of which are almost identical with the one just related, the girl's chastity was much questioned, and there was considerable difficulty in even persuading her mother that she was not in labour when this pain of that nature set in.

Dr. Gocke gives two examples where pregnancy was suspected by the parents of two young ladies, but with reason, their state however was due to suppuration of the membra.

Pseudo-Pregnancy is by no means impregnant, caused by the cepation of the membra at the period of life when they naturally stop altogether, and the symptoms so much resemble those of
Pregnancy, that the woman feels convinced that she is pregnant. "An idea" says Dr. Montgomery, "which, at the time of life alluded to, is cherished by the few with extraordinary devotion, and "distinguished with proportionate reluctance." That the diagnosis of these cases is sometimes difficult, and requires caution, will appear from the following case quoted from Dr. Montgomery.

"Several years ago, after seeing within a "short time some cases of spurious pregnancy, "I was consulted by a lady, whom I knew to be "past forty, and whose youngest child was "then between 7 or 8 years old. She stated "that the catamenia, which had been for "some time gradually diminishing, had "disappeared altogether for the preceding "three months, that in every other respect "her health was as good as usual, but "that some time her friends had been joking "her about her being in the family way; "the idea I discouraged as improbable, and "suggested as delicately as I could that her "age would account sufficiently for the "circumstances which attracted her attention, "and I ordered merely some gentle..."
"Aperientis which she required. Two months afterwards, the letters for me, and to my surprise and consternation, informed me that she had quickened, and would require my attendance at such a time; adding, that she hoped I was now satisfied, that she was not quite too old to add her family. It was all true; in due time, the same birth to a son."

2. The next variety of Phrenic pregnancy is that which is termed nervous pregnancy, a state depending upon the mind or imagination of the individual herself. It does not present so much difficulty in the way of diagnosis, as in the difficulty experienced in overcoming the morbid belief of the patient, and it is remarkable how long the female may retain the most tactual impression that she is pregnant. Dr Montgomery states that he was consulted in a case in which the foetus was supposed to be extra-uterine, and its motion to have been constantly felt both by the patient and her medical attendant for nine
3. Pregnancy may be stimulated by the female for various sinister ends, as for the purpose of extortion, regaining estranged affection, or for obstructing the period of evacuation. Here then a great deal of responsibility necessarily involved, and the difficulties in the way of ascertaining the truth are all thrown upon the female. She, as Harvey expressed it, has obtained an accurate knowledge of the breeding symptoms and describes fully all the ordinary well-known signs of pregnancy. When a vaginal examination is proposed, it is either refused or is reluctantly accepted, while the limits are kept stretched out to prevent together, by which the parts are so narrowed as to almost impervious — and if an abdominal examination is attempted, the breath is held in, and the diaphragm forced down, at the same time that the abdominal muscles are brought into action, thus rendering any attempts to arrive at the state of the parts in the abdominal cavity,
Quite marveling.

1. Delirious state of the women, especially
   dropsy of that organ, are occasionally mis-
   taken for pregnancy, and pregnancy on the
   other hand has been mistaken for dropsy
   of the ovary.

2. Good days. A woman was taken into
   the operation room of a well known hospital
   for the purpose of being tanned. But the
   surgeon on hearing that she had not been
   examined sent her back to her ward; the
   patient was fortunate for before the next
   operation day she brought forth a child.

3. Terrible cases of the men have
   likewise been mistaken for pregnancy and
   a case is recorded in the Journal de
   Med. et de Chirurg. in 1841, where
   a woman offered the men were believed the a
   pregnant uterus.

4. A woman believing she had reached the
   full time; but the surgeons who were
   called in, discovered that the product of
   conception was not contained in the womb.

Nevertheless she was suffering severe pain
attended by efforts of expulsion. Several ac.
congress assembled in consultation discussed
the propriety of proceeding the caesarean
section, but the proposition being negatived,
the patient was left to repose.
Suddily, all the appearances of labour
disappeared; the efforts of expulsion ceased,
and the patient resumed her ordinary
occupation. Some months afterward
she entered the clinical hospital in a
state of profound weakness, and soon
afterward died. On dissection it was
found that the was air enceinte, but
thatinous the ovary filled part of
the belly.

5. The development of morbid growths within
the cavity of the uterus very frequently produce
a condition very similar to its character
the pregnant state, and therefore considerable
attention is required to distinguish them from it.
The principal of these are mole, hydatids or
hydrometra.
The uterus, especially when mole, fills its
cavity, attains the size of the pregnant
open at the full time, in the course of two or three months; which is one of the most important distinguishing features of it. At the end of 2 or 4 months, the uterus generally goes into action to expel them — and then expulsion is generally attended with haemorrhage, which may cause this morbid state the mistaken for abortion.

"The character of the most correct and exemplar, sexual, has occasionally been described and slandered, from cases being mistaken for abortion, an error that has arisen as well from the symptoms attending their growth, as those attending their discharge."

6. It appears from the following interesting case by Mr. Barbiere, in the Edinburgh, Monthly Journal for March 1844, that violent and fatal diseases may exhibit in their progress, symptoms not only to mislead the patient, but even to throw doubts even the Practitioner's mind, as to whether pregnancy exists or not. Mr. Barbiere was summoned by a lady.
In her fourth accomplishment. He found
the following symptoms. Dry, severe, and
repeated uterine pains, recurring every
five minutes. The catamenia had been
absent for 9 months, and 2 days.
According to her statement, she quickened
at the end of 6½ months, and had
experienced morning sickness, vomiting,
haemorrhia, etc.

Her abdomen was the size of that of a woman
at the full time, no pain was felt on
pressing. The breasts were distended
with milk, and the anseola was strongly
marked. She stated that the region
around had been discharged half an hour
before his arrival.

Although these symptoms all pointed plainly
towards pregnancy. Yet the glandular follicles
at the base of the nipple were absent. This
made him dissatisfied with her, that he could
not, in his opinion, that the lady was not
pregnant. At which she was very
inflamed.

At this time she was called away by.
Another engagement, and on returning in the course of two hours, he found her labouring under powerful expulsive pains, which nearly led him to alter his opinion.

On making a vaginal examination he found the uterus in an impregnated state. His doubts were now removed — and taking into consideration the violence of the symptoms, he placed her under active antiphlogistic treatment, notwithstanding which the patient sank; the result showed it to be a case of uterine enteritis.

This most instructive instance of the termination of pregnancy by so violent and fatal a disease is highly interesting, as much as it proves the necessity of a thorough acquaintance with all the means used for recognizing pregnancy and also the difficulties which often attend its diagnosis.
III. We now come to treat of the signs or evidence of Pregnancy.

While, within a comparatively short time, there has been an evident development in our means of diagnosing morbid conditions generally; these have also been great facilities laid open by recent discoveries in ascertaining the presence of the important state of Pregnancy. Still, however, there is a great field for further research.

Numerous signs are usually treated of in all our systematic works on Midwifery; many of them, however, are by no means certain, others in many cases are inapplicable, or therefore of no value, while only a small number are unequivocal.

We shall follow & Montgomery's division of the evidence of Pregnancy into the Presumptive, Probable & Unequivocal, as being most simple & practical, and at the same time enabling us to classify them according to their respective value.

And first of the Presumptive Evidence of Pregnancy, there are all uncertain, for the same phenomena may be produced by a variety...
of derangements of the uterine functions.
In the ordinary cases of pregnancy, however,
they are of great value in ascertaining the
stage of pregnancy, the probable date
of labour &c.

1. Suppression of the menses.
It may be stated, as a general rule, that
there is a suppression of the menstrual flow
during the pregnant state; this has led
obstetricians to reckon the duration of
pregnancy, and the probable date of its
termination from the last appearance of the
cratamenia. Taken in connection with
other symptoms, it is, therefore, a
valuable diagnostic sign of pregnancy, altho
by itself it is very liable to fallacy; for it
is well known that many other causes,
independent of Pregnancy, produce suppression
of the catamenia, both in the married, and
unmarried woman, such as, exposure to
cold & damp at the time, they are about
to appear, certain chronic affections, as
Phthisis Pulmonalis; Scurf, furunculosis or
other visceral obstructions; the operation
of certain powerfully depressant laxatives
or emotions of the mind; or some imperfection in either the ovaries, or uterus itself.

Another circumstance, which leads to further distrust of this sign, is that cases are authenticated where conception occurred before the menstrual flow had even appeared, and on the other hand, cases occasionally occur in which women have conceived after menstruation had apparently ceased.

Further, ample experience has shown that suppressed catamenia are by no means a necessary consequence of pregnancy.

Blundell remarks that the cessation of the catamenia does not invariably occur when a woman is pregnant, for he has known women, in whom, during the first 3 to 4 months, the catamenia have continued to flow, though in not so large a quantity, nor so long as after they were not pregnant.

Devoe has known women to menstruate up to the seventh month of their pregnancy.

Mauriceau says "I have known women who had 4 or 5 living children, and who had with every child her menstrual flow..."
month to month, as at other times, only in
lesser quantity, and was so till the 6th month.
Other authors, for instance Kennedy and
Burns, while they acknowledge that a
discharge, reputed menstrual, does occur
during pregnancy, are inclined to believe
that it is not a true menstrual discharge.
Sir Hamilton and D. Seimara, hold that a
substitution of the menstrual is one of the never
failing consequences of conception, and the
latter argues, that if menstruation had
continued in pregnancy, it is scarcely possible
but that abortion must often have followed,
as a part of the ovum would necessarily
have been detached from the uterus at every
period. To this argument Sir Dewees
very justly replies "that for the first two
or three months, the inferior portion of
the uterus, and more especially the
neck, are not always occupied by the
decidua, but left free and as it were
undraped as before impregnation, and it
is from this undraped portion that the
menstruous discharge takes place."
Again, some anomalous cases do
occur and are recorded, where the ordinary law in regard to menstruation is strictly observed, my where the menses appear only during pregnancy—cases of this nature have been described by Randeleague, Davenport & Perfect—but by far the most interesting is that given by Dr. Devereux.

"A woman applied for advice for a long standing suppression of the menstrual blood; indeed she never had menstruated but twice. She had been married a number of months and complained of a great deal of arrangement of stomach, &c. The prescription found Rhubarb & Steel pills; about the month after this she called to say that the medicine had brought down her countercurrent, but that she was more unwell than before. The sickness & vomiting had increased, besides swelling very much in her belly; we saw this pretty much distended and immediately examined it, as we suspected that the swelling was from the kidney, but from the part of the abdomen, and the want of fluctuation & solidity of the tumour, we began to think it might be pregnancy, and told the woman our
opinion. On mentioning the impression, the
submitted to an examination. For six
months, the pregnancy advanced
in pregnancy. After this, the had the
regular return of the catamastical period,
until the full time had expired; during
which time she was free from the discharge.
She was a nurse for more than twelve
months; she weaned her child, and
shortly after was again surprised by an
expulsion of the membranes, which as on a
former occasion seemed to be a sign of
pregnancy. *

It is, therefore, obvious that although
amenorrhea is in general a very valuable
indication of pregnancy; yet without
pregnancy amenorrhea may occur; and
the catamens may continue to flow though
pregnancy is certain.

2. The Areola.
It is extremely difficult, amidst the many
conflicting statements that have been put

* Druees' Comprehensive System of Midwifery.
p. 237.
forth as to the importance of the anecla as a sign of pregnancy, to arrive at a just conclusion as to its value.

Some holding that it is an indication not to be trusted. Others, that it never fails. The former, Denman is of opinion that the anecla is found in many of the complaints which resemble pregnancy, and generally, though not universally, in pregnant women. Denman says, that the presence of the anecla is equivocal in any but a first pregnancy, and even then is not always present, and may not be easily detected even when found in very dark skinned women. Pocock speaks much of the same effect.

Blundell holds, that the anecla as a sign of pregnancy is of no value when it is present in the greatest development, and in a woman who has had a large family before, even tho' the anecla be changed in the fullest manner, no certain reliance can be placed on the sign.

Among the latter, may be mentioned Smelting, William Hunter, & Hamilton, who
all regarded the asepta as the result of pregnancy alone. However, Hamilton, in one case trusting mainly to the asepta sign, in undoubted indication of pregnancy, pronounced a lady the pregnant, when the uterus was only enlarged by a mass of fibrous tumours.

It is right, however, to add that by means of the asepta, William Hunter decided upon a case of pregnancy under very extraordinary circumstances: the body of a young female was brought into the dissecting room, which at the first glance he pronounced the pregnant, but the accuracy of his diagnosis was not a little doubted when it was ascertained that a recent hymen was present; to decide the point he had the abdomen opened, when the uterus was found to contain a small foetus.

This contrariety of opinion engrafted by the best authorities in their writings arises according to Dr. Montgomery from the circumstance of those who do not value the asepta sign attending to only one of its characters, viz. the colour. Such, in his opinion, is most liable to uncertainty. He has seen several well-marked instances of this, one wi
a lady of very fair skin, blue eyes & light hair; the other in a lady of fair skin, but with black hair, and very dark brown eyes.

In both, the colour of the areola was so slight, as hardly to differ from that of the surrounding skin.

The characteristics of the areola are well described by Eberhard. He says during the pregnant state “the nipple becomes more bulky and appears inflated, its colour becomes darker; the surrounding skin undergoes a similar change, increases in extent, and is covered with little prominences like to many diminutive nipples”.

To this accurate description is added by S. Montgomery another circumstance viz a soft and moist state of the integument, which appears raised and in a state of tension, giving one the idea that if touched by the point of the finger it would become imphimeritious. This state appears however caused by infiltration of the subjacent cellular tissue, which, together with its altered colour, gives us the idea of a part in which a greater degree of vital
Action is going forward there is no operation
promptly, and we not infrequently find that
the little glandular nodules or tubercles are
"bedewed with a secretion sufficient to damp
"drown the woman's entire affa.
"The projecting glandular nodules are a sign
of pregnancy much relied on by some.
We before gave an interesting case of
uterino which closely simulated preg-
nancy & labour, & where Dr. Barben
declared on its non-existence from the absence
of the glandular nodules. However instinct.
Standing statements like this, and other
which might be adduced, other observers
have brought forward sufficient evidence to
prove that though even these accom-
paniments to the colos, are not the
trusted to.
Dr. Reid states that he has seen women
with fair complexion who had large
breasts, well marked areolae, numerous
large follicular glands, and prominent
ripples suffering merely from prolonged
of the catamenia. And on the other hand
he has observed not a few, with dark or
Allow complexion, to which unintentionally pregnant, had small breasts, small nipples, areolar scarcely distinguishable from the surrounding skin of brown sebaceous glands.

Dr. Simpson in December 1847 showed to the Obstetric Society of Edinburgh a woman in her 7th month, and in whom it would have been impossible to diagnose pregnancy from the appearance of the breast. There was no appearance of a single enlarged gland in the breast, which was not at all tender, and scarcely darker than the surrounding skin. He at the same time showed a drawing of the breast of a lady who had never been pregnant, but who was suffering from great uterine irritation. The areola was turgid and of a dark brown colour, the papillae numerous and much enlarged and the superficial veins very large and prominent.

This sign, if it is of any value at all, can only come in at a comparatively late date in pregnancy, viz., in the middle and latter months.

Dr. Grahame says, that if the hand is laid on the naked abdomen between the pubes and umbilicus, the foetus will sometimes be felt to stir; and he further states that the application of the hand dipped in cold water will effect the motion more readily.

But this is needlessly if others like himself have the "cold hand of a hypochondriac." But, as Dr. Simpson justly remarks, the mere application of cold to the abdomen will not cause foetal movements, it is only when the shape of the uterus is altered by pressure, that the foetus to take up a new position better adapted to its comfort, will execute certain preservation reflex movements.

When the motions of the child are somewhat obscure, but little reliance can be placed on them, as a sign of pregnancy, in "shudders of the abdominal muscles, & flutter of the bowels", may be felt by the
...mother, and the practitioners be mistaken for the movements of a child. Besides, some
women suppose the power of stimulating the
foetal movements, by the action of the ab-
nominal muscles. An example of the kind
is given by J. B. Bundell, and another by
S. Goos.
"When the child is very turbulent, and
its motions are, in consequence, both
frequent and violent, the desire becomes
so strongly marked, that without looking
further, it may be inferred that gestation
has commenced."

4. Quickening. Strictly speaking, it refers to
that moment of pregnancy when the foetus
becomes endowed with life. Though this is an
error, which the continued use of the term is
calculated to foster and prevailing among the
unlearned, yet to those who know that life
pertains to the elements of the future being,
while still microscopic, it is convenient as
shortly expressing a most commonly
experienced sensation.
The derivation given of quickening by J.
Deeper is correct, he says, "by quickening we are to understand the first perception the woman has of the child's muscular action," which, if it is the sole cause, as is most probable, of the peculiar sensations experienced by the mother would enable us to dispense with the sign of pregnancy, the motions of the foetus, and quickening. For it is a fact, not less important than singular, that these motions of the foetus may in many instances be felt by applying the hand to the abdomen, while the mother had no perception of them.

But Dr. Rhyten, and others, suppose "quickening the coincident with, or resulting from, the sudden ascent of the uterus out of the pelvic cavity." This view is opposed by Dr. Montgomery, by the following fact, that in a case he met with, the uterus could be distinctly felt in the abdomen, and the child within it, and yet the lady did not quicken for some time after.

The period of pregnancy at which this phenomena commonly occurs is between the 10th and the 25th week.

Dr. Hamilton states "that quickening takes..."
place at the end of four calendar months after conception." This nearly agree with the result of Montgomery's observation, that the greatest number of instances will be found to occur between the end of the 14th or 18th week after the last menstruation.

A number of circumstances, however, render this sign of little value, comparatively. In the first place there are numerous examples recorded of women, who have supposed, been and firmly believed that they had quickened, when no such thing had occurred.

Again, this occurrence is sometimes absent during the whole period of gestation; notwithstanding the subsequent birth of living and healthy children. Montgomery, Gough, Gardien, Bandelgeue & Lorent all mention having met with one or more instances of this nature.

More frequently, quickening is postponed. "There are some cases," says Johnson, "where the motions are not felt till near the end of the reckoning."

Bandelgeue mentions that some of his patients did not quicken until after the
It is unnecessary to dwell longer on the other signs included under the presumptive evidence of Pregnancy, such as, nausea & vomiting, salivation, enlargement & tenderness of the breasts, etc. We, therefore, pass on to the consideration of the Probable Evidence of Pregnancy.

These are obtained from "the altered condition of the uterus itself, which, increasing in size, ceases to be a pelvic organ, and rises into the abdomen, which in consequence becomes enlarged and prominent, and a corresponding change is effected in the state of the umbilicus; while at the same time certain alterations take place in the os, and cervix uteri, affecting their shape, texture, etc., which we can recognize by touch." *

1. Enlargement of the abdomen.

DeLee & Bums both state that this is one of the most equivocal of the signs of

* Montgomery's Evidence of Pregnancy.

p. 88, 89
Pregnancy. But Blundell, while he acknowledges that to the inexperienced it is a most uncertain sign, holds that the more expert accoucheur may often form a very just opinion as to whether the woman be pregnant or not. Montgomery is also of his opinion. And certainly in the generality of cases, the feel of a circumscribed tumour of an oval form, occupying the front of the abdomen, from the brim of the pelvis to the umbilicus, is a strong indication of the existence of pregnancy.

But in many cases where pregnancy is complicated, or stimulated, it is either impossible to recognize an enlarged uterus, from pathological effusions, tympanitic distension or deposition of fat in the abdominal parietes, or when the feet begin to say whether it be due to supposed mumps, or to contained nodules and hydatids.


A part of the cervix uteri both in the organic and in the female who has borne children, projects in a papillary form, from a quarter.
Shall an inch into the vaginal cavity.
In the uterus, the part is projecting is slightly "tapering, and conical in form," and feels remarkably firm. The outer month is of a transverse form, with well-defined and firm lips. Very often, the finger may sometimes be introduced to the depth of an eighth of an inch, at other times it gives to the finger, the mere sensation of a resistance.

Impregnation having been effected, the orifice is scaled up by an adhesive secretion.

As gestation advances, the cervix is more projecting, and at the same time, feels softer and more elastic, while the orifice now becomes circular.

At the three changes commence, and are in progress from after conception, they are not to be recognised with any satisfaction before the third month.

Kennedy says "there is really little change in the length of the neck, until after the 5th month, when it begins to shorten," it also swells out at its upper end, which is gradually becoming a part of the body of the
uterus. This dilatation proceeds steadily as the gestation advances, so that in the 6th, 7th, and 8th months, there is help and less projection of the neck of the uterus. And in the 9th month, it is almost obliterated. And now the uterus forms a convex roof to the vagina, instead of projecting into it.

It must, however, be borne in mind that these changes in the cervix and uterine fundus proceed always in this regular manner.

"in some, the neck is found as long in the 8th month, as it is in others, at the birth."

"Again, cases will occasionally be met with in the 7th and 8th months, and even in women in labour at the end of the 9th month, in which the neck of the uterus, may be found mobilised, and projecting a considerable way into the vagina.

Besides, there are other conditions of the uterus, besides pregnancy, by which the changes described may be produced, so as to assume almost exactly the characters of those that accompany the earlier periods of gestation."
We at last arrive at the proper subject of this dissertation, viz., the consideration of the microscopic, cellular, and auscultatory evidence of pregnancy. The microscopic evidence, depend on the existence of milk in the breasts, and urine in the urine; the auscultatory, on the sound of the fetal heart, and the placental circulation. The first we consider, as Probable evidence, and the latter as unequivocal evidence of the existence of pregnancy.

And, first, of Milk in the Breasts as a sign of Pregnancy.

The secretion of milk in the breasts is popularly esteemed as an infallible proof of pregnancy; but, among obstetricians, a variety of opinions have been held, as to the importance that should be attached to the secretion as a means of diagnosis.

Blunt tells us, that now and then, from a secretion of a fluid, serous, milky, or of mixed character, you may form a notion whether gestation be, or not be present. But you should not infer there is pregnancy, merely because there is a secretion of milk.
Montgomery, in like manner says, "we should attach great importance to the occurrence of milk in the breast, and if found in connection with other of the rational symptoms of pregnancy it ought to go a great way in confirming our belief of the existence of that condition, especially if occurring in a woman who had never borne a child or been pregnant before. But altogether it is a sign which we cannot expect in general to make available as a guide in forming our opinion in a doubtful case."

Churchill again speaks more strongly, he pronounces it "an evidence scarcely of any value at all."

Those on the other hand who speak in its favor are few, and I know only of one, Rev. D. Pettie, who has strongly advocated its importance. It is his decided opinion "that it is a sign which will never be found in regard to those who are pregnant for the first time, or in regard to those who are not pregnant at all... and that in general it is more certain in its information as a corroborative evidence of..."
evidence of pregnancy than the popular area. And, again, he says, "that compared with any of the ordinarily recognized signs for distinguishing a first pregnancy from a simple suppression of the menopause, before any "birth in the urine or hypogastric region can be distinguished by the eye or hand, or before the ear can observe the unmistakable "sound of placental or foetal circulation, there will be found, I think, far fewer exceptions to the milk test."

To decide, therefore, for ourselves as to the value of the test, let us inquire into the nature of the secreting structure, and the circumstances which influence or call forth its secretion.

We do not go far wrong when we state that there are no two other organs in the economy so connected by the mysterious sympathetic union, as the uterus and the mammae. Then the one suffers, the other suffers with it. Then the vital action are from any circumstance excited in the one, it is the same with the other. And there are but few exceptions (for exceptions
there must be) to this general law.

But while this sympathetic connection is so strongly noticeable, it is, at the same time, harmonic. That is, they change as the one is commensurate with the action in the other; the vital actions in the one do not hang on, while in the other, they are proceeding slowly, but they are not, so hand in hand. So that in the early years of life, while the uterus remains undeveloped, the mammae are equally so, they present at this time no difference, from the same structure in the male; but as soon as the period of womanhood arrives, and the menstrual flow is established, the mammary gland enlarges; it becomes greatly evoluted, so that some of the lactiferous tubes may be injected.

Then, again, when menstruation occurs, and the uterus is consequence enlarged, though but steadily, the mammary glands are correspondingly affected, they enlarge, and become extremely sensible; while pregnancy advances, the uterus, and the other generative organs are being prepared.
For the safe expulsion of the foetus, in the manner the mammae grow and become in every way fitted for its subsequent nourishment.

The change in the mammae which is effected by this wisely ordered sympathetic union in the development of the secreting apparatus, if being a general rule, that no organ in the economy can maintain its honour without its being called into action.

Now, since it is evident that there is this developing change in the structure of the secreting apparatus from the very first, there must be also a secretion from it which, at the beginning has but little of the characteristics (though undoubtedly some) of the true secretion, but it attains more and more of the full development, according to the progressive changes in the uterus etc.

The period of pregnancy at which this test is of most value is at the end of the second, or the beginning of the third month. At this time, it must be remembered, that the fluid does not trickle from the nipples, as it frequently does in the last
Mouth of pregnancy, "but the fluid must be "brought; and the method of obtaining it, under "doubtful circumstances, is to keep the finger "and the thumb firmly on the mammaery "gland, a little beyond the margin of the "areola, and then draw them to the point "of the nipple with a stripping and enveloping "movement. This repeated three or four "times, will certainly bring fluid of ample "quantity."

To ascertain the true nature of this secretion (which merely a drop will suffice) it must "be submitted to microscopic examination. "For a little moisture from the teataceous "glands of the areola, which is sometimes "produced during these efforts may be mistaken "for a lactic secretion."

A drop of this opalescent fluid, if truly a "lactic secretion, will exhibit under the "microscope, the characteristic milk globules "agglomerated in masses, ranging in size "from molecular spots to pretty large globules, "mixed with these groups will be preserved "an abundance of large air globules and "colostic granules, as in the green milk
of recent parturition.
We are, therefore, inclined to hold, with but few exceptions, that if a fluid can be
exposed from the breast of one who had never previously been pregnant, leaving all
the microscopic characters stated above, while there was no morbid state in the
system likely to cause excitation of the mammary glands, that this test is almost
infallible.

Dr. reddic gives in his admirable com-

munication to the "Monthly Journal of
August 1848, two instances, where he
was enabled by this simple test to pronounce
on the existence of pregnancy. "the one, was
an unmarried young woman who attempted
to conceal her pregnancy; and the other,
"a young unmarried lady, who was not
aware of her own condition; and whose
"station in life, education, and previous
"good conduct, was a protection against
"an early suspicion of her case. Both
"were convicted by the milk test, when
"the ordinary signs excited only a vague
"suspicion; both soon confessed them.
transport; and both were, on the strength of the opinion given, immediately placed in the bands of lawful wedlock.

However, it is only in a first pregnancy that the milk test can be applied with any confidence. For when a woman has once suckled the fluid is apt to linger in the breast a considerable time after weaning, and the mammary tubes continue performing a partial function.

It may be obtained with but few exceptions from three to six months after pregnancy. Reddie mentions that it was present in one case, that fell under his notice after the lapse of two years.

I found, in his edition of Deming, mention on the authority of Professor Post, that "a lady of this city (New York) was, almost fourteen years ago, delivered of a healthy child; since that time her breasts have regularly secreted milk in great abundance, so that, to use her own language, she could at all times, easily perform the office of nurse. She has uniformly enjoyed good health, is now about thirty-five..."
year of age, and has never proved pregnant a second time, nor had any return after "menses".

But it is undoubtedly that the secretion of milk may arise independently of menstruation, for it has been witnessed in the most unexceptional "virgin", in the superannuated female, and even in the male sex.

Constant irritation of the breast by sucking would solicit the secretion in known to cause its establishment. Perhaps the most remarkable case of this nature recorded, as occurring in the female sex is that of the little girl at Blencow, only eight years of age, who suckled her brother in the space of a month. She was produced by Bunkelberry before the Royal Academy of Surgery on the 16th of October 1783, where she milked her breasts in the presence of the members. The secretion was caused neither by the repeated application of an infant which her mother was suckling at the same time.

A most interesting account is given by Bunkel at his journey to the Polar regions
A young Chippewyan had separated from the rest of his band in the pursuit of trapping beaver, when his wife who was his sole companion, and in her first pregnancy, was seized with the pains of labour. She died on the third day after giving birth to a boy. The husband was inconsolable, and bowed in his anguish never to take another woman to wife. But his grief was soon in some degree absorbed in anxiety for the fate of his infant son. To preserve its life he deigned to the office of nurse to deprecat in the eyes of a Chippewyan as partaking of the duties of a woman. He cuddled it in soft furs, fed it with broth made from the flesh of the deer, and to still its cries, applied it to his breast. The force of the powerful impulsion by which he was actuated produced the same effect in his case, as it had done in some others which are recorded; a flow of milk actually took place from his breast, and he succeeded in "nursing his child."
Professor Hall of the University of Maryland exhibited the obstetrical case in the year 1827, a coloured man 55 years of age, who had large, soft and formed mammae, rather more conical than those of the female, with perfect and large nipples. This man had officiated as wet nurse for several years in the family of his mistress, and he represented, that the secretion of milk was induced by applying the child to the breast, during the night. The genital organs were fully developed.

But, again, the secretion may be established independent of direct stimulation of the mammae, by an indirect sympathetic irritation caused by muscular change in the uterus. Thus, when the uterus becomes distended with any false conception or hydatid accumulation, even in those who were never pregnant, but were exclusively in those who have already borne children, the mammary secretion is sometimes established.

In bringing my remarks on this subject to a conclusion, I would remark, as
I did believe, that in a first pregnancy, when the system is free from every verified condition that the presence of the milk in the breasts is an infallible indication of pregnancy, with the few exceptions where the deception by irritation of the mammae may be obtained. In subsequent pregnancies, it is not the relief upon which in the Pregnancy, simulated or complicated, it is an indication of no value whatever.

2. Kistina
No satisfactory case has been recorded by those who have devoted attention to the pathology of the urine, in which the true lactee secretion has been found in the urine. "All the "cases of milk-like secretion where no gland "has existed, are instances of phosphatic, "prudent, or fatty, urine."

But it is undoubtedly, that some of the con- "stituents of milk maybe met with in the "secretion of the kidneys, by a kind of "vicarious action of those organs."

This peculiarity in the urine of pregnant women, has long been a matter of popular
belief, and so far back as the year 1486
Sammarde mention, with great accuracy
the changes in the urine of pregnancy. Which
this day maybe obtained.
Up to about the sixth month, according to
this writer, "the urine is clear, and of a
pale citrine colour, with a cloud on its
surface; and about the middle of the fluid,
a deposit like carded wool, but as pregnancy
advances toward its close, the urine become
"turbid, and turbid when stirred."
In recent times, Mr. Kenehe demonstrated
that the urine of pregnant women contained
a peculiar substance, which he called keetin.
and the following is the description he gives
of it: "By allowing the urine of pregnant
women, as of nurses, to stand for some time,
in thirty or forty hours a deposit takes place
of white, flaky, inhomogenous, gummos matter
being the calceum, or peculiar substance of
the milk formed in the breasts during
"gestation. The precipitation is more
"readily procured by adding a few drops
of alcohol to the urine."
Mr. attention was paid, however, to this
Observations, till Mr. Hancock published his own researches in the *Lancet* Francaise. In this country, Dr. Godwin Bird was the first to take up the inquiry, and the result of this investigation appeared in the Guy's Hospital reports in 1840. Since then, it has attracted attention in America, and in 1842 Dr. Kane of Philadelphia experimented upon its nature. I laid the results of this research before the Profession in the American Journal of Medical Science.

Let us now keep from the history and inquire into the Period of Formation, its Appearance, both during, and after the complete formation of Nictine.

The urine of pregnancy undergoes but little change within the first 36 hours—the first appearance is in the form of a cotton-like cloud; this, however, is not an uniform phenomenon, according to Dr. Kane, of the succeeding changes, and it may be seen when there is no pregnancy to account for. In lapse of time, the "cotton-like cloud" becomes resolved into a number of minute
opaque bodies, which rise to the surface forming a far-like scum. The time at which the pellicle begins to form varies considerably. At the end of 36 hours, Shaw has seen it well marked, and again he has seen it make its first appearance a little after the 8th day. At first it is hardly discernible, but about the 5th day it is fully developed. It now presents a continuous stream of an opalescent white, or creamy appearance with a slight tinge of yellow, which gradually becomes deeper and more decided. Then fully formed a number of crystalline shining points appear which are not merely confused with the "fatty" scum of cooled broth. This appearance remains permanent for three or four days, the scum then becomes turbid, the crust cracks, a minute flocculi detach themselves from it, and sink to the bottom of the vessel; this action continues till the whole pellicle disappears.

S. Golding Bird states, as one of the characteristics of breast milk that it has a cedars odour; this is indeed well marked.
in some instances, however it is not always detected where, in other instances it
failed in many instances in perceiving the
dahlia I have detected it in only 7 cases some of the flakes appear
thickened were without it and in two
presenting it the flakes were very thin
and not well developed.

For the Phaeton & Perry were unable to
receive the odorous odors in 27 cases of
the three they possessed.
Microscopic examination. To procure
the odorous in microscopic observation Bird
advocates that a slice of glass should be plunged
perpendicularly into the fluid, and then
withdrawing it horizontally, allow in a nearly
horizontal position, an equal layer of the
substance is discerned which appears
glistening with a lustre like spermatozoon:
Then placed under the microscope, and
examined with an object glass, of a quarter
of an inch focal length, it appears to consist
of an amorphous matter composed of minute
spike points, mingled with which may be
there be seen patches of tinctorially regular
globular bodies, and embedded in this
myriad of triangular pieces of triple phosphate.
These crystals give the peculiar shining
appearance to the pellicle, and under the mi-
croscope from their distinctness, form a very
interesting object.

S. Simon of Bertoni in describing the micro-
scopic appearance, states that the whole field of
vitalion is decorated with numerous vibrios
in active motion, and crystals of am-
mmoniacal magnesium phosphate. When the
pellicle becomes thicker, precisely similar
phenomena were observed, but the vibrios
were supplanted by a considerable number
of amoniaci.

When the pellicle which falls to the bottom
of the vessel is examined microscopically, it
presents the same appearance as the fall
formed pellicle that has, excepting that the
crystals are much more numerous, and all
the annual matter present is entirely
composed of amorphous granules, all trace
of anything like a regular structure
being lost.
Of the action of reagents upon Kieselguhr.

The addition of acetic acid to a portion of the gelatine, caused opacity of the material, the crystal undergoes a rapid solution, and a lustrous deposit is left, which exhibits to close microscopic scrutiny, after having been washed and dried, exhibits not trace of crystalline matter.

It seems to conclude, from his experiments, that the animal matter consists partly of an etheolene compound. In an addition of a hydrated potash or the filtered solution, a comparatively slight turbidity ensued, like macerating the gelatine in a dilute solution of potash, and calcining the filtered solution with acetic acid, heating and adding ferrocyanide of potash. After a liberal addition, a more decided turbidity ensued.

S. L. L. M. Manus' investigation, on the other hand, proves that the other constituent of the animal matter is a butyric acid fat. In means of either the acid always turns from this film a considerable quantity of acid fat, which joined a soap with potash.
And then, on the addition of sulphuric acid, developed a well-marked odour of nitric acid.

Again, the addition of some strong liquid ammonia causes the entire solution of the amniotic matter, and after being washed with water, nothing can be seen in it to the microscope in the district and imperfect crystals of triple phosphate.

Morgan, then, he concluded that urea is a mixture of fatty acids, fats, phosphates of magnesia, and a proteid compound very similar to casein.

Theory of its formation. It is probable that during pregnancy casein is formed by the direct conversion of the albumen of the blood. The retention of the imperfectly formed secretion in the blood is attended with injurious consequences. So that we may conclude the presence of casein in the urine is due to a vicious action performed by the kidneys, before the peculiar principle is separated along with the other constituents of the milk from the
Mammee.

We next come to consider the question, whether kristine is always formed during pregnancy, and whether it is never seen in the home from pregnant females.

Dr. Simin says, "I have examined the urine during the 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, and 17th months of pregnancy, but have not invariably detected kristine."

And mention that out of 90 women of pregnant women examined by him, three did not present the urine, but like pellic.

But a case occurred to Mr. Melvin, where no kristine formed, though the existence of pregnancy was undoubted.

It is remarkable, however, that in all these exceptions, the secretions from whom the urine was produced, were all secreting under some morbid condition at the time. Thus, in the case mentioned by Mr. Melvin the female was secreting under some cystic condition at the time. Then, in the case mentioned by Mr. Melvin the female was secreting under some cystic condition at the time. And in these cases, all these were affected with inflammatory fever, etc.
...companying dense cataract. —
In all these cases, as soon as the disease
had subdued the characteristic krestine
appeared in the urine.
I am inclined to think that in these
instances, if any occur, where there is no
mortal condition to account for its absence,
it must be accounted for by the establish-
ment of the mammary secretion, from
some unusual cause.
Again, it is stated that this peculiar
substance is sometimes seen in the urine
of those who are not pregnant. Muller
relates two instances of this sort, in one
case there was considerable hypertrophy
of the uterus; in the other, no affection
of the generative organs could be detected.
Dr. Kane states that a krestine-like
membrane may also appear in the urine of
females with uterine, ovarian, metastatic,
abcess, vesical cataract, &c. However,
this in these instances, there is a
considerable resemblance to the true
krestine of pregnancy, it is generally
acknowledged that it differs from it, both
in the manner of formation, and its destruction. The structure of the case, alluded to, does not appear to quickly settle on the surface of the urine as Kiesite does, and also, instead of disappearing, as it is found to do in the course of a few days, it (the former) goes on increasing in thickness, and ultimately becomes converted into a mass of amorphous, "Every urine," says Sumin, "left to itself, forms a pellicle now or else resembling that of Kiesite. If formed soon after the urine is discharged, it consists of earthy phosphate, which, from the urine being alkaline, are, in the most part precipitated, but whence from a delicate film on the surface. When this is the case, the pellicle is very thin or readily broke off the bottom. Under the microscope, crystals of ammonium magnesium phosphate, and an amorphous matter very similar to Kiesite, but consisting of phosphate of urine are observed; this likewise differs from Kiesite in being white in free acid. The pellicle of fat on the surface of urine
May sometimes be mistaken for keratin, fibers of this nature are very thin and usually transparent, and under the microscope reveal the presence of numerous, fat globules. The membrane formed on the surface of urine 6 or 8 days after emulsion usually consists of a species of mucous; under the microscope there may be seen numerous filaments matted together and interwoven with fibers.

"Once observed a pellicle on the surface of a man's urine three days after emulsion, which both in chemical and microscopical character presented the closest analogy to keratin."

The next question which engage our attention are the following. How soon in the course of pregnancy may keratin be formed? and during how long a period may it continue? From all that he knew of the nature of keratin, and the relation which exists between its formation and the existence of pregnancy, it would seem probable, that as soon as gestation has fairly commenced
one may expect to find it in the same. Accordingly, Kleybotte has reported that he detected intestine in the uterus on the fifth day after conception—J. Bird mentions that the uterus of a hamster, she considered herself, was at the end of the 2nd month after pregnancy, yielded a well-marked fetich—

The amount of its formation will be, in accordance with the advance of pregnancy, and especially with the change occurring in the placenta.

J. Kane says he rarely observed it during the first weeks of pregnancy, and he most commonly noticed it during the 7th, 8th, and 9th month, and at the period of delivery. But that it may occur prior to these periods is undoubted, as appears from some of the cases given by J. Bird, and one which occurred to myself, where the fetich was well formed in the 6th month.

In regard to the period during which intestine may be formed, J. Kane mentions that it occurs during the second lactation.
especially when the secretion of milk is at all check'd. Accordingly, he found it in 92 and 9/4 cases examined during lactation.

P. Bird again states that either it is extremely probable that the breast feels while maybe met with in the renal secretion of inure. Whilst suckling, yet he never met with an instance of this kind. And he gives the following interesting case of being afflicted whilst yet being present during lactation:

"Oct 26, 1839. I was consulted by Mr. D--

"On the third month of intra utero gestation,

"In the case of her child, a boy fifteen months old, whom notwithstanding her pregnancy, she was then suckling. This little patient had a severe attack of puerperal following measles from which he was recovering, when, a few days before I was called in, from imprudent exposure to cold, he contracted bronchitis, and when I saw him, he was evidently dying:

"His face was pale, lips blue, and extremities cold; he had however..."
Different strength to take the breast. As it was evident that the child would in all probability expire in a few hours, I was anxious to ascertain whether the interior of the mother contained any of the supposed calcom matter, and if not, how long after the death of the boy it would appear.

Some other cause was, accordingly, waited, and after the first interment, it continued "no particular change; intra-faecal decomposition then entered, and it was thrown away. She continued to suckle her child until within a few hours after its death, which took place forty-eight hours after my first visit; and on the following day, I procured another specimen of the mother's urine; this, after two days' repose, had a thin calcom pellicle on its surface. In the course of a week a third specimen was procured, and this in three days became covered with a complete creamy layer, evoking a strong cheese-like odor."
In the urine of pregnancy as a sign of pregnancy—

as with the other signs which we have discussed,

so with this, there has been a variety, and a

contrariety of opinion expressed, as to its

value as a diagnostic of pregnancy—

Some maintaining the urine. The

pathognomonic

diagnostic of pregnancy. Others expressing

a conviction of its utter worthlessness.

The following is the conclusion to which S.

Montgomery comes. "In some instances, no

opinion can be formed as to whether the

peculiar deposit existed or not, on account

of the deep color, and turbid condition of the

urine, and again, "there are such a

host of accidental circumstances, capable of

altering the condition of the urine, as may

be make us very cautious indeed how we

attribute & attach credit to a symptom so

equivocal.

S. Carpenter says "that the presence of

absence of bile in the urine may

merely be regarded as a valuable

diagnostic sign."

S. Reddie thinks "that the presence of
"Kreisrine is a very important index of pregnancy" and C. Golden, in his opinion, that as a test for the existence of pregnancy, the formation of Kreisrine will be an extremely valuable corroborative indication.

We have already stated that in certain moist conditions the urine presents a pellicle very similar in appearance to the true Kreisrine formation of pregnancy, but that this formation may be distinguished from that of pregnancy, by noticing their mode of formation, and disappearance - the microscopical character, and the action reper upon them.

We are therefore inclined to hold that Kreisrine, properly so called, is a formation quite peculiar to pregnancy, and characteristic of that state. And that when formed, the urine of suspected pregnancy it may be taken as an unequivocal indication of the existence of that condition. But as we have before said, Kreisrine may not be formed though pregnancy is undoubted - in these cases, it would appear, its absence
is the accounted for, by the presence of certain inflammatory affections, which, though they exist, prevent its formation — or the departure of their morbid state, however, the pelvis again forms in the uterus.

Dr. Anchon examined the uterus of 25 pregnant females, and he found uterine in every case — 17 were between the 4th and 9th month, and 8 were between the 1th and 9th month. And if had not shrunked, they considered themselves a labouring under some trace of the womb, and the remaining from patients who had been under treatment for such complaints; one in April, another in March, a third in December, and the fourth in June. The least centrifuged urine. In Pretended uterine affections — In many other cases, had the existence of pregnancy been suspected, although in many one the fact was placed beyond doubt.

S. B. Bird in his manner noticed pregnancy in two females, who presented themselves, and treated for amenorrhea. In both the formation of the pelvis was well marked.
There was a servant girl 18 years of age, whom I did strongly suspect the pregnant, from the condition of her ankles, but she was so much annoyed by his question that she certainly to attend.

"The other was a stout, tall, unmarried woman, a servant, aged 33, who came under my care Nov 7, 1839. Suffering from cough, apparently depending on disturbed digestive functions, and relaxed bowels. She had not menstruated since the preceding May, and attributed the appearance of the clitoris to estrus to old. She had morning sickness, and the veins of her lower extremities were prominent. On examining the clitoris, no evident enlargement of the uterus could be observed, in consequence of the pelvis being loaded with fat. And on looking at the breasts, the nipples were found surrounded by large purplish brown areola. At being charged with pregnancy, she strenuously denied it; but admitted, having been the mother of an illegitimate child eleven years previously. She
declared that she had preserved absolute
chastity since that period, and never entered
at my (as she termed them) project
inspections. I suspected her
affirmation, and suspected it in a lightly
covered glass cylinder: in two days a
dense reticule of jelly-like matter formed:
this increased in thickness during three
days, and then evolved so powerful an
odour, putrid and sickly, that I was
necessitated to throw it away. One
day later this woman was delivered
of a male child.

The test then, as it is, is to suckle an
infant in case of pregnancy, it is also one that
can be made independent of the female, d
without exciting the suspicion; and on the
other hand, in case of suspected pregnancy,
is enabled in the opinion of many authors
afflicting the delivery of the female.

James. A. C. Hutchinson