Some practical and scientific uses of palpation and auscultation during labour.

The pregnant uterus is a sac, and the shape of this sac is determined by its contents, viz. the liquor amnii, foetus, and placenta. So accurately may it be thus moulded on its contents, that a frozen section of the cadaver by Brunn and Waldayer has shown the impression on the uterine wall of as small a structure as a foetal leg. ["Selected Papers", p. 43. Barry Hunt.]

The abdominal varieties are in like manner moulded in the contents of the abdomen. Thus the peristaltic movements of the intestinal coils may be seen on inspection in cases of obstruction, the outlines of large malignant and other tumours may be visible, and in the
pregnant woman elevations and depressions caused by movements of the foetus, impart to the abdominal tumour an ever-varying contour.

These two coverings, the uterine and the abdominal, may be in a contracted or in a relaxed condition. In both states they are equally accurately modelled on their contents, but in the contracted state the coverings to a great extent determine the relative position of the contents. In the uncontracted state the coverings are flaccid and soft and mouldable, and their contour is then determined by the contents. This fact makes Palpation a practical means of investigation.

In literature much more attention is given to Auscultation than to Palpation, but
the former without the latter gives inadequate information.

In connection with Labour it is in the early stages that palpation is especially of value, as by it, combined with auscultation, the presentation may be determined when the os is still too small to admit the finger.

The customary positioning of the pregnant woman is of importance in palpation and auscultation. She should lie on her back with the knees drawn up and the head and shoulders on a pillow. It is a help too if she breathe through her mouth. The hands of the examiner must be warm, applied flat to the abdomen, and manipulation must be gentle.
Palpation of Dorsal-anterior Position.

Only the hands parts of the fetus can be discovered, as the head, back, coccyx, and sometimes the limbs. In all cases palpation should be begun by placing the hands lengthwise on the abdomen with the fingers tips just above the pubes. By pressing gently downwards and backwards, the presence or absence of the head in the pelvis can be determined. In many cases the enucleation of part of the head cranium can be distinctly mapped; in others merely the tips of the fingers about against some solid resisting body; but in only a few cases of head presentation is this firm phase of palpation negative. These last are cases in which labour has already advanced well into the second
stage. The movement of flexion that aids this descent of the head tends, in occipito-anterior cases, to make palpation of the head more difficult.

It is at the beginning of labour that the position of the head is most easily determined in this way. As labour advances and the head descends, the head must necessarily become less and less distinct, until it is finally beyond reach of suprapubic palpation. But in a number of cases, even in primiparae, in the first stage, the head can be very indistinctly felt in this way. If an examination per vaginam be then made it will be discovered that the head, covered by the cervix, is low down in the pelvis, while the os is high up and far back, and may
admit only the point of a finger. Thus the distinctiveness with which the head can be palpated behind the pubic arch is no certain indication of the stage to which labour has progressed. But it is an indication of something much more valuable, viz. the size of the foetal head relative to the pelvic brim.

Very little practice is needed to diagnose the head by suprapubic palpation. The firmness corresponding to the child's neck, where there is no resistance, followed by the hard structure deeper down, even though this hard structure be felt by only the tip of one finger, is quite sufficient evidence. And this evidence becomes a very real quantity when once a breech case is similarly palpated. Here the conical shape
of the sacrum is felt dipping into the pelvis. It is much narrower than the symphysis, and is not succeeded by a furrow and a hard resisting structure.

When the head happens to be not in the pelvis, it can always in my experience be very easily palpated elsewhere, as in the epigastric, or in one or other iliac region. In these Breeds and Cross Births the detection of the foetal head by Palpation is one of the simplest of palpable phenomena.

The Back, Sacrum, and Sines have next to be discovered.

The Back is best palpated by placing one hand on each side of the uterine tumour and pressing each in alternately. While the back is the resistance of a solid body is felt.
In nearly every case of cross-anterior position the back can be thus detected. In the
Frank's left in left cross-
anterior (L.O.A. and L.S.A.A.),
in her right in right cross-

The Sacrum. In cross-
anterior position in which the
head presents the sacrum +
bottoms can be detected by
tracing the back upwards,
into the epigastrien region,
and I find that in L.O.A.
and R.O.A. the sacrum occ-
cupies the right or left side
of the Frank's median line
indiscriminately. When we
consider the mobility and
the often obliquety of the
utens, and the constant
movements of the foetal limbs
and the probable bending and
 unbending of the foetal back,
the inconstancy of relation-
ship of the sacrum and the
mother's median line is readily
explained.

We must recollect too that
the impregnated uterus is
movable as a whole within
the abdomen both in an anterior
posterior and in a lateral di-
rection. Hence no part of the
uterus has a definite and
precise relation to any of the
anatomical landmarks in the
mother's abdominal wall. As
the fixed point about which
toe anterior-posterior and later-
al movements occur is situ-
ated around the neck of the
cervix, movement of the fun-
dus is greater than that of
any other part. Hence the fetal
sacrum within the fundus
has an inconstant relationship
to the middle line of the
mother's epigastrium.

As regards the limbs their
position is usually to be determined by a method of exclusion. They can seldom be felt individually apart from sudden movements of them. There is no hard part here; no head, no back, no cerebrum; but it is a part of the uterine tumour, and it is soft and into it the fingers can be pressed deeply. Either nothing is to be felt at all, or, at the best, one, a hard nodule, suggesting, but merely, suggesting, a knee, an elbow, or an ankle. At times, however, a foot with its heel seems to be certainly grasped.

Thus, in a normal L. O. A., the head can be palpated in the pelvis unless the second stage be far advanced; the back can be felt in the left side of the meiaria line of the
uterine tumour. This leads up to the Ischiopagus which may be on the right or left side of the Involution Amnion. The right side of the uterine tumour contains the limbs. It is root and described as a pseudocapsule or Pulpy tissue in the absence of large solid structures.

The same remarks apply to cases of R.O.A. if right be substituted for left, and vice versa.

In the vast majority of cases these relationships hold good, and can be made out. But they are not invariable. In both L.O.A. and R.O.A. internal rotation brings the cephalic structure into the conjugate of the bony, and the foetus back in their normal and regards the uterine tumour and probably also in regard
the mother's abdomen. In this position it needs very little
deviation of the uterus from
the central line, or very little
rotation of the child's body
about its neck (its head be-
ing now fixed in the pelvis)
to displace the back from
the central line. But even
before internal rotation is
quite complete the above-
described (normal) relationship
may not hold. Thus I have
notes of two cases of L.O.A.
in which, the head being feel-
pable in the pelvis, the back
was to the right of the mes-
ial line of the mother's ab-
domen, and the depressible
part of the uterus correspond-
ing to the line, could be felt
high up on the left. In
both cases, too auscultation
detected the heart sounds more
distinctly on the right side.
Care of Mr. J. B. Galashiel.
Enjoined 21 March 1891
than on the left, though not more than an inch beyond the median line. In both cases, the condition was probably temporary, but I had not an opportunity of establishing this fact. One was the case of a thin, peney long, necked foetus with spina bifida. In this case the head was fixed in the pelvis in the L.O.A. position, as determined by external examination, and internal rotation was nearly completed. But the back and sacrum could both be distinctly palpated on the right side, the limbs on the left and high up, and the heart-beat was best heard a little to the right of the middle line. It is probable that some movement of the foetus subsequent to a uterine contraction caused rotation of the body upon the
Case of Mrs. K., Redhead, Clowenford.

Confined 21 May, 1891
head at the neck—a condition of very temporary duration.

The other case was that of a woman with a remarkably "Pendulum Belly," and when she lay on her back the uterine tumour was set obliquely in the right, making the foetus occupy the right hypochondrial region rather than the epigastrium. During a "pain" the uterus budged forward very markedly. The abnormal (or unusual) condition above referred to obtained on Palpation and Auscultation, while the presentation was L.O.A., as discovered by vesical examination and external rotation of the head gave L.O.A. (by Restitution).

There two exceptions to the general rule, however, detract very little from the trustworthiness of the informa-
thin to be derived from Palpatin and Auscultation, because in both cases labour was so far advanced as to admit of exact diagnosis of the presentation by vaginal examination, and Palpatin and Auscultation have their chief value in responding the determination of the presentation in the early part of the first stage. The trustworthiness of this information I shall refer to later.

**Palpatin of Dorsal, posterior Position.**

In dorsal, posterior cases, Palpatin gives very definite information. The head is still to be felt in the pelvis, but it is impossible to know whether the fingers impinge on the occipitae or mental region. Palpatin higher up at once notes the absence of back and sacrum. The hands can be deeply indrawn into the
uterine tumour, and all in soft and dough-like, except that here and there a hand
small nodule can be felt, which may be knee, elbow, or heel. By palpation alone,
therefore, dorsal posterior positions can be unmistakably diagnosed.

Palpation should now be carefully applied to the mother's flanks, and in most cases,
y P.O.P. the back will be felt on the right side, while palpation on the left flank
is negative and thus confirmative.

My experience of P.O.P. cases
is insufficient to warrant any definite statement. But the evidence in other positions
is so constant and unerring that one is entitled to infer what analogy would predict.
Auscultation.

What I have to say on this subject will best come in here.

The point of greatest intensity of the foetal cardiac beat is the second aorta. The area of distribution of this beat is of secondary importance. The point of maximum intensity indicates the position of the 4th or 5th dorsal vertebra of the foetus.

These heart sounds are most distinctly heard when the back of the foetus is anterior, and in such cases the sounds are conducted up and down the spine. When the child's chest and abdomen are anterior the sounds are usually much less distinct. This is due to the position of glistening of the foetus and to the fact that there are interposed between the heart and the stethoscope two bad conductors.
By Dr. P. Cappai.
of sound, viz. the foetal limbs and the liquor amnii.

When the child's chest is auscultated post partum, the heart sounds are then heard only in the precordium. Auscultation of the back is then quite negative. The expansion of the lungs has quite changed the conditions.

It is extremely unusual to fail to discover and hear distinctly the foetal heart beats. If auscultation be hurriedly performed they may easily be missed, but if carefully conducted the sounds of a living child's heart will be heard. This refers to all presentations and to conditions of hydramnios and feeble heart beats. This point must be insisted on as it is of importance — inability to detect the foetal heart beats.
Case of Mrs. R.C., Montrose.
Contracted Oct. 25, 1893.
after careful auscultation it became obvious. I have had occasion more than once to be thankful for relying upon this dictum. In one case—that of a Primipara with persistent R.O.P.—I was able before resorting to forceps to warn the friends that the child was already dead. There was no other sign of expulsion or death, and no apparent cause for it except that labor began by rupture of the membranes. It was only after auscultating two or three times very carefully that I felt justified in telling the friends that I expected the child would be still-born. My fears proved correct, and the forceps were free from any charge of destruction.

Of 130 cases carefully auscultated I have 6 times been
unable to detect the heart. 


dr. playfair , in his "science and practice of mid- 
wifery " ( sixth edition ; vol. i. , page 162 ) says that dr. anderson 
y. glasgow , failed to detect 
the heart - sounds in 12 
cases out of 180 , and in each 
the child was stillborn .

it sometimes happens that 
the first attempt to hear 
the heart - beat is fruitless .

this is rare , but if it hap- 
pens a second attempt should 
be made after a few pains , 
and in every case in which 
the child is alive it will 
be heard .

point of maximum intensity of 
the foetal cardiac beat .

the literature on this 
subject is incomplete and un-
satisfactory. In L.D.A. Presenta-
tion the second is best heard
in the left side below the
level of the umbilicus. This
has always been my experience
with the two exceptions (pro-
bably of only temporary dura-
tion) which I have referred
to in connection with Pal-
pation. (Page 12.) But to say,
with Dr. Playfair, "midway
between the umbilicus and
left iliac spine" is too sum-
mery a statement to include
all the facts.

The precise position varies,
not only in different cases of
labour, but also at different
times in the same case. If
the foetal head be large in
comparison with the pelvis
rim and have not engaged
the point of maximum in-
tensity, will be very little below
the level of the umbilicus, and
Berry Hart's "Selected Papers": Chap. 18.

"Nature and Cause of the Movement of Internal Rotation."
in some cases it will be as high. The distance to the left of the umbilicus varies very considerably — from one to three or four inches. This is at the beginning of labor. As labor progresses and the head descends the point of maximum intensity approaches gradually toward the promontory ligament. When the occiput reaches the "sacral segment" and is thereby made to rotate to the front (internal rotation) the point of maximum intensity retreats from its lateral position and ultimately assumes a central and it is not an unusual circumstance, when the second stage is well advanced, to find the point of maximum intensity immediately above the symphysis pubis. When this is the case we diagnose that internal rotation has o-
eurred and that labour is well advanced.

But if the head be small in comparison with the pelvic brim, and the head be sunk in the pelvis (although labour is not yet begun) the point of maximum intensity will be much nearer the centre of the part; bipartite ligaments than the umbilicus. Here too, as labour progresses, this point descends, and internal rotation likewise comes a sliding of it from a lateral to a central position. The downward movement and the lateral movement occur simultaneously, the downward movement being the more pronounced at first, the lateral at the end.

The same remark applies precisely to R.O.A., right and left being interchanged, but I have met with no case of
R.O.A. in which the sounds were not best heard in the right side.

In normal anterior cases the heart sounds are not so readily heard as the sounds already given and they are more diffused. It is more difficult to find a point of maximum intensity. In R.O.A., however, the heart sounds are always best heard in the right side and almost always below the level of the umbilicus. But it is quite common to hear them best altogether away from the usual (occipito-anterior) area, viz. in the mother's right flank. The reason is that the child's back is here opposed to the mother's abdominal wall. In other cases, they are heard all up the right side of the uterine tumour and across the front lms down; and
in the case of P. O. P. I have noted—"heart best heard above umbilicus and to its right. Very distinct above, very faint below, and also to left of umbilicus."

Dr. Playfair says, in Vol. I. of his work, page 122, "in head presentation, the fetal heart can usually be heard below the umbilicus, and in breech cases above it." If this refers to the point of maximum intensity it is correct as far as head cases are concerned, but I cannot endorse in the statement about breech cases. My notes, however, contain records of only three cases in which amnioncetesis was carefully performed. In a case of L. I.a. the exam. were best heard in the left side and a little below the level of the umbilicus, not an unusual place
for them to be heard in the first stage of L.D.A. when
the head is still bobbing at the brim. In another case
of L.L.A. (the second of twins) the heart was best
heard on the level of the umbilicus and to the left
eyet; while in a case of R.L.A. P. there seemed to be
no point of maximum intensity, the sound being well
heard from a point midway between the umbilicus, and
right iliac spine upward and to the left, crossing
belows the umbilicus to yet
to its left side, and thence
upward for an inch. This
line of sound was apparently following the line of
the foetal body.
But as in head presentation
so in breech cases the
point of maximum intensity,
varies according to
1. The absolute size of the foetus;
2. Its size relative to the pelvis of the mother;
3. The stage of labour;
and these causes of variation refer to each position of the breech.

The information to be derived from palpation and auscultation is thus by no means insignificant. By them the position and the size of the foetus are determined. The interpretation of the palpable and auscultatory phenomena, as above indicated, is reliable; and D.O.A. can be diagnosed with a positiveness, almost absolute without any vaginal examination, as can also the other head-positions, breech cases and cross-births. There means
of investigation, however, are
only auxiliaries to vaginal
examination and are incom-
plete in themselves, as they
cannot decide the question
of complex presentation, as
head and arm, prolapsed
funic, placenta praevia, etc.

Conditions which interfere
with Palpation and Auscultation

The conditions which interfere
with the proper conduct of
Palpation and Auscultation are
surprisingly few. As regards
Auscultation we may say
that the heart-beat of a liv-
ing foetus can always be
heard, and that its point of
maximum intensity can al-
ways be fairly accurately as-
certained if there is time
to search for them. Ultrasound
the one element necessary.
Uterine sounds are
best, marked hydramnios do not cause failure.

Palpation is not always so easy of accomplishment. After a uterine contraction the fetum can usually be felt to be moving, moving bodily, en masse, as if it were settling down again to resume the pre-contraction attitude which was disturbed by the contraction. The contracted uterus, as was said, determines the relative position of the contents; while in its relaxed state the contents determine its contents. If contraction therefore occur very rapidly, palpation becomes impossible.

In cases of marked hydramnios too palpation is usually quite negative till the membranes rupture, when if evanes hydramnios can no
longer be said to exist.

The Placenta may interfere with the proper Palpa-
tion of the foetal back. In some L. O. A. cases — in which
the head is palpable in the pelvis, and the sacrum high
up in the epigastrium, and
in which Auscultation de-
tects the heart-beat on the
left below the umbilicus —
there is difficulty in pal-
pating the back. Certainly,
it is not to be felt on the
right side, but a hard part
is indistinctly felt about the
umbilical level in the left.
This indistinctness is sometime,
carried by the interpretation
of the Placenta. Such cases
may be mistaken for dorso-
proterin position.

Primipara cases, firm-
ness of the abdominal wall,
excessive diapnoe 8 bat is tren
...constituenes, flatulence, etc., make palpation less easy of performance, but in all such cases the phenomena of palpation are undeniably present and interpretable, and are usually interpretable to a degree of accuracy that is surprising. So much so indeed that a diagnosis can be depended on when it cannot be made per vaginam.

We are therefore borne to look upon palpation and auscultation as valuable auxiliaries to diagnosis in labor cases, and in the earliest stages of all presentations. Vaginal examination is the auxiliary to palpation and auscultation, as far as the position of the fetus in utero is concerned.
It will be well now to give examples of some of the practical uses of Palpation and Auscultation.

**Early Diagnosis of the Presentation.**

A simple vaginal examination does not settle this in the earliest stages of labour—not even in normal head presentation. And as it is every accoucheur's duty to arrive at a diagnosis as early as possible in every case entrusted to his charge, it becomes his duty to gain this information by Palpation and Auscultation. Besides, the relief it gives to the accoucheur's mind to know exactly what kind of a case he is dealing with, it prepares him for any eventualities that may occur. In fact in favour of Palpation and Auscultation at this stage all recommendations in favour of early diagnosis can
be legitimately brought forward.

In example of their use:

It is often impossible to tell by vaginal examination alone in the early stage of labor
an R.O.P. from an L.O.C. We wait on indefinitely, and make
at the timber of the case. Many
hours after a vaginal exam-
ination discovers the fact that
the position is R.O.P. and
persistent; and the tidium
of the case is explained. How,
if Palpation and Auscultation
had been practised at the
beginning the R.O.P. would
have been discovered at that
time. The prognosis to the
friend would have been guar-
ded, delay would be antici-
pated, and in many cases
this early knowledge would
alone of itself, assistance by
abdominal palpation and
digital pressure on the head
during a pain in converting the R.O.P. into R.O.A.

Some ladies are very sensitive about vaginal examination, even at term. But they will readily permit palpation and auscultation. I was called to give chloroform to a lady by the doctor in attendance, who had spent a day and a night with her and had never been able to make a satisfactory vaginal examination on account of her sensitiveness. In my arrival she was half anaesthetised. I completed the anaesthetics while the treeps were being sterilized and oiled. A proper examination was now made, and, the lower blade being ready for insertion, it was discovered that the presentation was that of the breech. The hand placed in the abdominal tis-
more readily detected the head
in the epigastrium region.

Had Palpation been practised
in this case even an awkward,
though harmless, position would
not have been experienced.

**Twins.** The presence of
twins in the uterus cannot
be diagnosed by vaginal exam-
ination, but by Palpation and
Auscultation it may. There are
two reliable signs. One is the
detection by Palpation of two
foetal heads. The other is the
discovery by Auscultation of two
foetal heart-beat, heard in dif-
f erent areas and differing from
each other in rapidity. These
are two very conclusive signs,
but by no means usually to be
discovered. In a case which
I palpated and auscultated
the head was in the pelvis, only
dims were feet over the tumour
completely, and the heart beat was best heard on the right side below the umbilicus. R.O.P. was diagnosed, and the child was born R.O.P. But another patient was present, and Palpation and Auscultation revealed precisely similar results. This child was also born R.O.P.—both being persistent.

But more definite information in this branch of the subject is needed, and it is only by the routine practice of Palpation and Auscultation in all cases, so that no case of twin-labour shall escape Palpation and Auscultation, that this information can be acquired.

Obstetric Manipulative Operations.

If we can interpret the common palpable phenomena of normal presentation, we shall the more readily understand
Case of Mrs. R. H. Furniture.

Inscribed 31 October, 1893
and appreciate the signs of the case.

Thus a breech or shoulder case will be at once recognized as something immovable by placing the hand in the abdomen, and very little manipulation will serve to establish a diagnosis, whereas in the early stage of such cases a vaginal examination gives information which is always indefinite.

It is in the cases presentations too, as shoulder cases and Placenta Praevia, that the obstetric operation that is essentially manipulative comes into play. I refer to Bipolar version. A knowledge of the phenomena of Palpation make this procedure, which is all too little in vogue, simpler and easier of execution.

So with the rectification of any mal-position. In a case
in which Palpation, Auscultation, and Vaginal examination — conducted between pains — lead to the diagnosis of L.O.A.

Vaginal examination — conducted during a pain — diagnosed the presentation of the right shoulder. When the pain was passing off, the palpating hand detected the head in the left iliac region, and when it had quite passed off it was felt to slip down again into the pelvis. This alternation of presentations occurred three or four times, with successive pains. Such a condition by Palpation alone can be rectified. The inter-entac-
tion presentation may be retained. Suprapubic pressure on the head and pressure of the fundus uteri to the mother's left side may accomplish this, and save the necessity,
In concealed haemorrhage we have another invaluable use of Pulsatina. An actual case will exemplify this.

Mrs. J. B. was confined for the 14th time on March 22nd, 1892. On the previous morning at 4.0 a.m. she was suddenly awakened as one of her daughters had fainted or was in a fit. She rose hurriedly to attend to her, but as the fainting soon passed off she returned to bed and slept. Throughout the day she felt sickly and had occasional false pains. She felt more than usually exhausted. At night this feeling of exhaustion passed off and she
I slept till 4 a.m.

At 7 a.m. I saw her. She was very pale and restless, and complained of "never having felt like this before." She also said that the pains never properly ceased, and pointed to the right side of the abdomen as the most painful part.

The pallor at once attracted my attention, as I knew him she looked in health. Her pulse was about 100 and slightly irregular. It was small and weak. These facts, combined with restlessness, at once suggested hemorrhage.

On vaginal examination I found the uterine nearly fully dilated and very dilatable, and the presentation L.O.A. There was no placenta praevia, there had been no hemorrhage and there was none, and no blood on the examining finger.
I next palpated the abdomen. Nothing definite was found. The foetal parts could be made out, as between the contractings, which were coming very rapidly, the uterus remained unusually hard—never indeed thoroughly relaxed. But on the right side a localised area attracted attention. It suggested the foetal head at first. But on more careful palpation it was found to be a part of the uterus itself in a state of tonic contraction. The whole uterus was tender to the touch, but this part was especially so.

The locus of the haemorrhage was more apparent. It was beneath the placenta and retained in situ by the still adherent membranes.

An careful auscultation
no foetal heart could be heard.

The diagnosis—thanks to Palpatin and Auscultation—was then complete. She was suffering from concealed haemorrhage and the foetus was dead.

After a few more pains, a healthy full child was born, but dead as anticipated. The uterus relaxed, but almost immediately, contracted again, and by gentle suprapubic pressure the placenta was detached, accompanied by large dark clots and fluid blood. All else went well.

The rude awakening of the previous night was probably the exciting cause of the haemorrhage. The patient would set in the peripheral circulatimin reflexly by stimulating or inhibiting the vaso-motor centre.
in the medulla. The supply of blood by the curving arteries of the uterus to the maternal placenta would be deranged. In such a condition absolute rest is the best treatment. Hence when in bed she was free from pain and slept. But when up and about she had a sickly feeling and suffered from false pains. These were probably caused by engorgement, rupturing of some small vessels, and formation of clots beneath the placenta. By night she was exhausted. The recumbent posture in bed again gave temporary relief, and she slept; only, however, to awaken early in a restless uneasy state and with labour began.

The haemorrhage had separated enough of the placenta to cut off the fetal circula-
tim. Hence its cleatly. And after its birth the placenta, being already detached, was easily removed with the clotted and fluid blood that had been retained.

In concealed haemorrhage Palpatim in time of great value as a means of diagnosis. In normal conditions Palpatim between the uterine extraction causes no pain, nor is any part of the uterus extracted. But, in concealed haemorrhage the whole uterine tumor is more or less tender to the touch, and in a localized area may be found a part of the uterus which is hard and in a state of true extraction. This part is the seat of subjective pain and gives objective tenderness. The diagnosis is a different problem in their complete.
Palpatin when using Forceps.

We may distinguish two varieties of Prolapson: one, complete and partial. It is complete when the cord presents before the head; it is partial when a loop of it lies in the side of the head and is in danger of being whipped by the forceps. If this whipping should happen the diagnosis is made by Palpatin. The next case shows this.

Mrs. B., aged 32, Primipara, was confined on January 15th, 1892. The presentation was R.O.P. and long rotation occurred readily. The occiput was anhydror and projected forwards, seriously narrowing the pelvic outlet. I gave nature, as the pains were strong, the chance of overcoming the obstacle. The head
removed very markedly and the caput succedaneum became visible. But progress ceased here, and after frequent fruitless endeavours to bend back the coccyx I resorted to the use of forceps.

In auscultation the heart was found beating naturally just above the symphysis.

There was no difficulty in applying the forceps. When a pain came I made traction. When the pain and traction ceased my left hand in the abdomen felt violent movements of the foetus. The sharp tip of the coccyx was deeply indenting the foetal head, and I imagined this to be the cause of the struggling, as no doubt a foetus can experience pain in utero. With the next pain I made no traction, and there was no struggling. With the
succeeding pain I made gentle traction, and struggling, as felt by my hand in the abdomen, recurred. Before the next pain set in I antecutated and found the heart still beating naturally. I was greatly puzzled, as the question of pain to a foetus was for the first time before me. The possibility of Prolapse Jennis, not discovered in pre-natal examination, did seem to me, and I made as careful an examination as possible, but unfortunately (as I was pre-engorged there was no prolapsus) without removing the foeces. All seemed to be right, and I decided to hasten delivery by traction hoping to get a living child. It was not till after two or seven pains that the eweepse gave way, and the child was soon
born. I kept the forceps in situ purposely till the head was fully born, and I found then that the upper blade was compressing about an inch of the loop of the umbilical cord against the foetal head. My error at once glared upon me. The child's heart was beating feebly, but an hour's endeavours to resuscitate it proved unavailing. It needed a minute's searching to heal up the rent in the patient's vesica pelvis.

I record this unfortunate case as it points out a valuable use of Palpatinum and shows that Auscultation in the circumstances was deceptive. After the cesarium a tract in a forceps case the abdomen should be palpated, as by this means a very real but hidden danger may be discovered. This
otherwise this danger can be diagnosed I do not know, and I feel sure that by no other means can it be diagnosed as early. Without palpation in such a case traction will be applied with each pain in blinque ignorance of the danger and with immense risk to the life of the child. Violent movements, as felt by the palpating hand, call for immediate removal of the forceps, a thorough examination, and their re-applications if nothing contraindicating their use be discovered.

There are two points which auscultation alone can decide.

1. Is the foetus alive?

Palpation may detect movement — hence life. But absence of movement does not indicate death.
Care of Mr. I. A. Galanakis.

Engraved 27 May, 1891
Statistics clearly show that we are safe to say that the foetus is dead if the foetal heart beat cannot be heard after three or twice careful auscultation. The value of this information has already been exemplified.

II. Do Foetal Cardiac Murmurs exist? If they do they do not remain in foetal partum. It is rare for the beat to be replaced by a murmur, but if it is the murmur cannot be heard in auscultating the child's chest after birth.

In example: in a case of marked Hydramnios the foetal beat was a sort blowing murmur, and it was heard quite apart from the uterine snuffle. When the membrane ruptured and many points of liquor amnii...
escaped auscultation was again performed. The same murmur was now heard, in the same area, but much more distinctly. It seemed to lie very clear on auscultation that the heart beat itself was irregular, and that it was not something superimposed to a normal tick-tack. After the birth of the child auscultation of its chest revealed nothing abnormal. The placenta was adherent and had to be removed manually.

A few remaining phenomena are more purely of scientific interest.

Change of Presentation.

To decide whether pains are real or false it is the routine practice to find if there is tension in the membranes during a pain. This
usually decide the question. But if Palpatin and Auscultation be practiced the presentation will also be determined. In most cases in which the presentation has been thus determined during the persistence of false pains it is found in the midst of labour that the presentation is still the same. It is common to find an L.O.A. or an R.O.P. remaining so for several weeks. But the presentation is also apt to change from time to time. Several cases of which I have noted exemplifying this. Such cases are rather of interest than of practical value as we do not yet know what inferences to draw from the facts.

Case 1. Mrs. A. C., aged 32, was delivered of her third child on May 17, 1891. She had false pains in the previous day. By Palpatin
the head was then discovered to lie in the pelvis, the back on the right side, and the postaxial limbs on the left. Auscultation detected the heart-beat best on the right side below the level of the umbilicus. The presentation was R.O.A. Vaginal examination could only say "head," and "labour must begin.

She was ordered to remove her very heavy clothing, which were fastened round her waist, and to remain in bed.

She was free the whole night from pain and next evening labour began. The head was still palpable in the pelvis, but the back was now on the left and the limbs on the right.

By auscultation the point of maximum intensity was found in the left below the level of the umbilicus. The presentation was L.O.A. This was em-
formed by vaginal examination at the subsequent event.

Case 2. In this case the false pains ceased for one, six hours before labour set in. Mrs. A. M., aged 31, fifth confinement, January 14, 1844.

The first examination made during the false pains showed L.O.A., as the head was palpable in the pelvis, the back in the left and anterior, and the limbs in the right side of the uterine tumour. The heart beats were heard only in the left and below the level of the umbilicus.

When examined during labour twelve hours later no back in sacrum could be felt but only the limbs, and these all across the front of the most depressible uterus. The head could be detected in the pelvis. The child was evi-
dents, lying in the cross-pelvic position. By auscultation the heart beat was heard right arms below the umbilicus, and with equal distinctness in both sides. This alone must decide L.O.P. from R.O.P. A subsequent examination, however, did. By cephalic the presentation was confirmed to be R.O.P. The child was small but healthy, and the mother's pelvis roomy. The presentation is more apt to change when the foetus is small.

**Changes at the Fundus Uteri.**

If the hand be put over the fundus uteri before the birth of the head it will be found that the fundus is in nearly the same place as it was at the beginning of labor. But the head has de-
ascended several inches, and a
similar descent of the fundus
might be expected. The fund-
us does descend as a matter
of fact, but its descent is far
from equal in amount to
that of the postac head.

And, further, when the
head is actually born the
descent of the fundus is
still hardly perceptible. The
descent in fact is remark-
able for its small amount.

The hand over the fundus
is able to perceive the cause
of this. The hand caecum
and the buttocks, which ori-
ginally occupied the fundus,
have descended pari passu
with the head as they are ne-
cessity, must, and have re-
sceded from the fundus; the
parts within the fundus are
now small, and the fundal
region is despressible in a
manner reminding one of that part of the uterus which in the early stage contained the limbs. In addition to this the movement of the limbs is often very evident.

There is thus a change in the contents of the femur. The limbs have taken the place of the sacrum and buttocks. This must be caused by extension of the hitherto flexed lower extremities.

When the head is passing the perineum this straightening of the foetus is frequently very palpable. It is at this moment that the most rapid descent of the head occurs, and the compensatory extension of the lower limb is very evident.

The fundus thus does not descend during labour in the same proportion as does
the head of the fœtus, but is
prevented from doing so by the
involving of that flexion that
is characteristic of the fœtus
in utero.

This assumption of the
extended position of the lower
limbs must be gradual, as
with each slow movement
descent of the head a cor-
responding involving of flex-
ion of the legs will occur and
retain the fœtus at a nearly
at the same level. But
when the head finally rounds
the perineum and is born
there suddenly occurs a great
descent of the head, and the
hand over the fœtus now
feels a correspondingly sudden
increase of extension of the lower
limbs.

The change at the fœtus
during a normal S.O.A. case
of labour, as detected by Palpa-
tim may thus be summarized:—

At the beginning of labour, the fundus is broad and is occupied by the head can-
crum and the buttocks. Its summit reaches close to the
apex. After the head
is born, the fundus is more
pointed, as its transverse di-
crater is markedly decreased.
It contains the more or less
extended lower limbs, and it
is an area of less force than
formerly. The descent is not
proportional to the descent of
the head. The changes that
have occurred have been grad-
ual, unruptur, except at the
moment of the birth of the
head when the extension of the
limbs is sudden and can be
felt in palpation.

The pain that gives birth
to the shoulders and body and
thus occasion the final descent
of the foetus, now brings the fundus down to two or three inches from the symphysis pubis. This prior descent of the fundus can sometimes be followed by the palpating hand.

**Third Stage Phenomenon.**

I have occasionally observed a phenomenon in the third stage of labour which I think is worthy of note.

The uterus relaxes and contracts with a certain amount of regularity both as to time and extent. So this well-known fact I would add that I have occasionally noticed that the relaxation immediately preceding the expulsion of the placenta - or immediately preceding that contraction when on the first time the placenta can be manually expelled - occurs with
apparently greater ease in the
part of the uterus than pre-
vious relaxation, and it takes
place to a greater extent. The
uterus rises higher than hitherto at this relaxation.

I have perceived this
sufficiently often now to know
that very little suprapubic
pressure with the next con-
traction will expel the pla-
centa. It would seem that
either preceding or during
this last relaxation the
placenta has become detached,
and thus an obstacle to
uterine relaxation is re-
moved.

This is not a pheno-
menon to be observed in every
third stage, but it is ob-
servable sufficiently often to
make it worthy of remark.
I think too that if the
observation is correct and
can be verified, that it will 
turn a side-light on Dr. 
Berry Hart; theory of the 
mode of separation of the pla-
centa. This takes place, "ar-
ing to the disproportion between 
the part to be separated and 
the site of its attachment."
[See his "Selected Papers in Gyne-
ceology and Obstetrics"; Chapter
[xiii. p. 118.] While the pla-
centa remains attached there 
is a certain amount of resis-
tance to uterine relaxation; 
when it becomes detached 
this resistance is removed and 
relaxation occurs to a great 
extent than hitherto. If this 
should be more than usually 
excessive it is reasonable 
that by Palpation this ex-
cessive relaxation should be 
perceptible.

In any case it is a 
fact that a somewhat
larger relaxation succeeding several smaller ones generally indicates that the placenta is now detached and can be readily expelled.

I certainly find in actual practice that the customary quarter of an hour need not be waited for. This sign indicative of placental separation occurs earlier.

This fuller relaxation is quite unaccompanied by hemorrhage, and the phenomenon in question refers only to cases in which there is no fear of hemorrhage.

This thesis is entirely the work of my own remedied efforts.

Richard Wype
M.A. (1885); M.B. and C.M. (1889), Betti Roadley,
145 High Street, Merton.