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ITS NATURE AND MODE OF ORIGIN.

BY

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Read Oct. 5th, 1859.

Since the days of Ruysch, Albinus, and Morgagni, cases have been from time to time related, in which hydatid-like bodies have been discharged from the uterus. The resemblance between these bodies and hydatid cysts formed in other parts of the body, was sufficient to induce the older observers to consider the two identical. Later inquiries have proved to demonstration that these bodies discharged from the uterus are not true hydatids, but that they are the product of conception, and have indeed nothing in common with true hydatids, further than a slight external resemblance. Cruveilhier, by his minute description and accurate delineation of a specimen of the affection in an early stage, first conclusively demonstrated its non-hydatid character; and he expressed the belief that the hydatid-like cysts were the result of a transformation of the blood-vessels of the placenta,[1] thereby, as he himself confesses, confirming the conjectures or imperfectly defined opinions of some of the older observers.

Since the time of Cruveilhier's observations, much has been said and written on the interesting question, as to the nature and mode of origin of these hydatid-like bodies, and

[1] "Ces vesicules ou kystes sont le résultat de la transformation, non des vaisseaux lymphatiques, ainsi que le disent Bidloo et autres, mais bien des vaisseaux sanguins du placenta." ('Anat. Path.,' liv. i, pl. 1 and 2.)

yet the subject cannot be said to be exhausted. Cases presenting facts useful in the determination of the question are few and far between; the early stage of the affection generally escapes observation; and it is when the affection is in this stage alone, that inquiries can be made calculated to afford conclusive results.

In fact, it must be admitted that at present, very essential points in reference to the nature and mode of origin of the affection in question, remain still *sub judice*, or at least that they are still undecided in the mind of the profession at large. For a proof of the truth of this statement, it is sufficient to refer to the observations on the subject in the latest edition of Dr. Taylor's well-known work on 'Medical Jurisprudence.'

Considering the many important practical and medico-legal questions which require, for a solution, an accurate acquaintance with the whole history of the formation of the so-called hydatid mole, it will not, perhaps, be considered altogether superfluous or unnecessary that an attempt be made to reduce the series of facts relating to this subject, and already on record, into something like a system; and to give a more general view of the matter than has hitherto been presented. It will then be apparent, that several interesting questions respecting the circumstances attending the origin of this condition, have either not been touched upon at all, or in a manner altogether insufficient, unsatisfactory, and inconclusive.

Some time since, a very interesting and perfect specimen of the vesicular or hydatidiform mole having come into my possession, I was led to study the subject more particularly than would otherwise have been the case, and an attentive consideration of this specimen, and of several others which I have had opportunities for inspecting, has led me to form certain conclusions respecting the origin and history of this curious pathological product at variance with those of previous writers on the subject. These conclusions, together with the facts by which they appear to be substantiated, I now purpose to lay before the Society.

The specimen just alluded to, and which, together with certain drawings, is now exhibited, was obtained under the following circumstances :

A lady, æt. 24, and who had been delivered by myself of her first child seven months previously, requested my services early on the morning of September 10th, 1858. She had been suckling her child, which was healthy and well nourished, up to the date just mentioned, and had noticed that, for the last six weeks, the quantity of milk secreted was increased. No menstrual discharge or anything resembling it had been seen by her, until six days before I was sent for. She had not experienced morning sickness, but constipation and a certain fulness of the lower part of the abdomen had been present for some weeks. She had not the slightest idea that she was pregnant; but one of her female friends had told her that if she was not then pregnant she soon would be—judging, it would appear, from some change in her countenance and manner. Six days before I was sent for, a slight sanguineous discharge commenced, considered to be returning menstruation. This discharge continued for about four days and then ceased; it was unaccompanied by pain. On the morning of my visit, having just suckled her child, she experienced a sudden recurrence of the vaginal hæmorrhage, and pains resembling those of labour were felt at intervals of a quarter of an hour. The discharge of blood was not considerable. Two hours after, I first saw her and made an examination. After removing what appeared to be a small coagulum of blood, the size of a nut, from the vagina, a soft mass was felt hanging out of the os uteri. This mass was easily extracted, and consisted of an entire ovum, the decidua uterina being unbroken, except at its lower part. The hæmorrhage which followed was very trifling, and the patient recovered without inconvenience. Twelve months subsequently she was delivered of a second child.

Judging from the external appearance of the ovum (Plate IV, fig. 1), it seemed to be two months old, perhaps a little more. The membranes of the ovum were almost

entire, the mass having been expelled complete; and, a slight laceration only excepted, just as it had lain in the uterus.

When laid flat, the mass expelled measured, vertically, two inches and three quarters; transversely, two inches; it was half an inch thick. It was of a triangular shape, and presented three openings, the two superior of which corresponded with the commencement of the Fallopian tubes, and were one eighth of an inch in diameter: the lower opening corresponded with the cervical canal of the uterus, was irregular in shape, and from it a laceration of the external covering of the ovum, evidently produced during expulsion, extended upwards for one inch. The external covering of the ovum, viz., the decidua uterina, thus extended over the whole of its surface, the lower part excepted, and formed a sac, shut everywhere but at the three openings indicated. This external envelope presented the usual well-known characters of the decidua uterina. Inferiorly, blood had been effused into its substance and the membrane was in this position much thickened. Over a space of an oval shape, and occupying part of the upper and the chief part of the anterior (or posterior) surface of the ovum, the external surface was elevated above the general level, and a distinct groove bounded this—the decidua serotina. Here the decidua was firmer, more dense, but irregular as regarded thickness, and tolerably large blood-vessels of a serpentine form dipped into it at intervals; these were filled with blood. A little tension of this part of the ovum easily produced crevices in the decidua serotina, through which became visible little cyst-like bodies, to be more particularly described hereafter. In places these extended quite to the surface.

The *decidual cavity* was open below and above by the three openings previously described. From above and behind (or from before), and covered by the decidua reflexa, projected into it the ovum, an oval-shaped bag with fluid contents. The latter projected downwards in a nipple-shaped form a little beyond, and to the outside of, the decidua uterina. The

internal surface of the decidua uterina presented the characteristic velvety appearance; the decidua reflexa opposed to it was denser and firmer than it. The nipple-shaped projection, covered by the decidua reflexa, was hard, dense, and thickened; and on cutting into, it showed a fibrous texture, an appearance probably due to altered blood.

On cutting through the decidua reflexa it was found pretty firmly adherent to the chorion membrane, a few small and delicate processes appearing between; the chorion and the amnion were adherent; and, arriving at the interior of the amnionic sac, which was one inch and a half long, and of an oval shape, it was found to contain a serous fluid only. No trace of the embryo or of the umbilical cord could be discovered, although the walls of the cavity were to all appearance quite intact. A section, carried quite through the upper part of the ovum, and involving therefore the decidua serotina, as well as the decidua reflexa, showed that the villi of the chorion, over more than half its surface, and corresponding in extent with that of the serotinal decidua in contact with it, had undergone the hydatidiform degeneration (see Plate IV, fig. 1, *e*). The space between the surface of the chorion membrane and the external surface of the decidua serotina was generally one third of an inch. This space was occupied by transformed chorion villi extending from the chorion nearly, and in places quite, to the surface of the decidua serotina.

The general arrangement of these villi was as follows: delicate, transparent, apparently tubular processes, passed from the chorion to the decidua, in their passage becoming dilated more or less abruptly, into rounded, oval, transparent, cyst-like bodies. The processes or villi divided irregularly in their passage towards the serotinal decidua, each division presenting the cyst-like enlargements; and the final termination of each branch at the decidua was marked by a rather larger cyst-like body than usual, (as shown in the magnified representation (Plate IV, fig. 2, *b*). The decidua formed little recesses, into which these globular terminations of the chorion villi were embedded. The villi thus presented the

appearance of tubes irregularly and abruptly enlarged at intervals, or that of a mass of small bladders closely packed together. From the enlargements, and from the trunk of the villus, between the enlargements, little bud-like processes were seen, by the aid of the microscope, to extend outwards on every side; and, for the most part, these bud-like processes were enlarged in a pyriform manner at their free termination. While most of the cyst-like bodies presented a hyaline or transparent aspect, there were others quite opaque and dense.

Examined by the microscope (see Plate V) the surface of the hydatidiform enlargements were seen to be covered by cells, which were widest apart where the dilatation was greatest. The intervening stalks or pedicles also presented cells of the same character, but much more closely set together and smaller. The little bud-like processes (Plate V, *b*, *b*, *b*) were similarly but more closely still beset with cells. The membrane on which these cells were visible was transparent, and presented minute specks, apparently oil-globules. The cells over the enlarged portion of the villi were for the most part transparent. When cut across, the cyst-like enlargements subsided and a fluid escaped, but this fluid could not be forced into the pedicles by pressure. The cyst-like bodies shown in Plate V, measured from one sixteenth or even less to one sixth of an inch in diameter. Their interior was delicately fibrous. The more opaque rounded bodies before alluded to appeared to be vesicles which had undergone a more advanced form of degeneration.

The actual description now given varies in no essential points from the descriptions of the early stage of the disease which are to be found in the works of Cruveilhier, Mettenheimer, Gierse, Wedl and others. It was necessary, however, to give the details respecting this specimen fully, in order that what remains to be said may be duly appreciated.

An attentive examination of the specimen in question and of the drawings made therefrom, will be quite sufficient to

show that the difference between the enlargements, the cyst-like bodies described—and the so-called hydatids which are expelled from the uterus, at a later period of pregnancy, is merely one of degree. We may completely and entirely dismiss the whole theory of the hydatid character of these bodies, although it will be necessary to say a word or two respecting the possibility of the occurrence of true hydatids in the uterus in another part of this paper. It is quite evident that these cyst-like enlargements originate in the villi of the chorion, and in this view all good recent authorities concur. The question to be resolved is—*What is the nature and cause of the change in the chorion villi which results in the production of these hydatidiform bodies?*—and on these points we find a diversity of opinion.

The cyst-like appearance of the bodies in question, has induced some very good observers to consider the change as one consisting essentially in the formation of cysts—cysts originating in certain transformations of the chorion villi or parts thereof. Mettenheimer,[1] who has given a very accurate description and delineation of the affection, enters into a long discussion with the view of showing that this is the case, and his opinions are quoted and endorsed by Mr. Paget. Mr. Paget says, "The whole process may therefore be probably thus described: certain of the cells in the proper villi of the chorion, deviating from their cell-form, and increasing disproportionately in size, form cysts, which remain connected by the gradually elongated and hypertrophied tissue of the villi;" and then, quoting Mettenheimer, "'on the outer surface of the new-formed cysts, each of which would as it were repeat the chorion and surpass its powers, a new vegetation of villi sprouts out, of the same structure as the proper villi of the chorion. In these begins again a similar development of cysts, and so on, *ad infinitum*.'" "No instance," says Mr. Paget, "could afford a better confirmation of the production of cysts by the enormous growth of elementary cells, or a better type

[1] "Mikroskopische Untersuchung einer Hydatidenmole." Von Dr. C. Mettenheimer, Müller's 'Archiv,' 1850, p. 417.

of the capacity of cysts thus formed to produce structures resembling those in the abnormities of which themselves originated."[1]

Another opinion, advanced by Gierse[2] is, that the change consists in hypertrophy of the natural structures found in the chorion villi, with secondary œdema. Gierse's description of the appearances observed is accurate; and, as will be presently seen, his interpretation of those appearances is more in accordance with my own than Mettenheimer's.

The cyst theory of Mettenheimer and Paget I am induced to dissent from altogether, after a careful consideration of the subject. That view is disproved by the actual appearance of the specimen now exhibited, and by considerations derived from a knowledge of the normal anatomy of the chorion villi. The healthy chorion villi, examined at an early period, consist of processes branching out and dividing like the branches of a tree. These processes are furnished, as long since pointed out by Velpeau, with clavate terminal enlargements; they consist of a homogeneous, transparent membrane, on the surface of which are seen nucleated cells in close apposition one with the other. The processes do not appear to be hollow; when cut into, they present a network of cellular tissue. The appearances of the normal villi, as thus described, are well seen in the drawings of another specimen of abortion which are now exhibited (See Plate VI). If the two drawings be compared—that in which the villi are healthy, and the one in which the villi are transformed into hydatidiform masses—it will be at once apparent that we have before us precisely the same structures in the two cases. The enlargements appear to be due to some transformation, altogether irrespective of the nucleated epithelium-cells which cover the surface. In the altered villi, we see the cells over the enlarged portions separated from one another, the natural result of a distension of the portion of the villus beneath; and the enlargement is due

[1] 'Lectures on Surgical Pathology,' vol. i, p. 64.

[2] "Ueber die Krankheiten des Eies und der Placenta." Von Dr. Gierse. 'Verhandl. der Gesellschaft für Geburtshülfe,' in Berlin, 1847, p. 126.

evidently, not to cyst-formation originating in the superficial cells, but to distension of the interior of the villus beneath the cells by a serous fluid. This, indeed, is Gierse's view of this part of the question. Respecting the cells themselves it does appear that they are changed, but this change consists simply in a very slight distension of their interior by serous fluid.

Another phase of the transformation is depicted in Wedl's 'Pathological Histology,' where the surfaces of the villi are beset with fatty molecules, this is apparently an advanced condition of the same degenerative process witnessed in the specimen before described.

With respect to the identity of the hydatidiform enlargements with the chorionic processes, the evidence appears to be perfectly conclusive, the facts stated also are strongly against the cell theory maintained by Mettenheimer. The conclusion which must be formed is then that in the hydatidiform mole we have not a new formation, but simply an alteration and degeneration of previously existing structures.

We have next to inquire, *What are the circumstances which determine the pathological alteration now under discussion?* The conclusions drawn by all writers who have advanced an opinion on the subject, appear to me to be erroneous. It has been universally supposed that the transformation is the starting point of the affection, that it is the disease of the chorion which is the cause,—the death of the embryo, the effect. Thus, Dr. Barnes, the latest English writer on the subject, considers that the disease consists in a perverted development or involution of the proper structures of the organ; and after describing the budding out which normally occurs in the chorion villi, states that, "under the influence of a perverted developmental force these buds, instead of growing into villi may dilate into true vesicles or hydatidiform cysts."[1] Gierse's theory is that, in consequence of some circumstance hindering the formation of the placenta, the remaining chorion

[1] 'Brit. and For. Med.-Chir. Rev.,' Jan., 1855, pp. 168, 169.

villi become hypertrophied and œdematous. The view of the question which I have been led to take, and which is opposed to those just alluded to, is, that the changes in the chorion villi which result in the production of the hydatidiform mole, are secondary to, and a consequence, not a cause, of the death of the embryo. On this view of the case, the vesicular transformation observed is nothing more than a degeneration of structures arrested in their development, this arrest of development taking place simultaneously with the death of the embryo.

If we examine the state of the villi during the second month of fœtal life, we find that at that time their vital activity is very great, they are engaged in supplying nourishment and means of growth to the embryo. During the same period also, a portion of these villi become transformed and developed into the fœtal placenta, while the remainder disappear. The vitality of the fœtus seems to be the circumstance which determines the further development of the placental villi; and the development of the fœtus and of the placental chorion villi proceed *pari passu*. There are no facts showing that the embryo being dead, the chorion villi can become subsequently developed into blood-vessels, as is the case when the life of the embryo persists.

But the death of the embryo does not necessarily determine the cessation of *vitality* in the chorion villi; in order that this may be the case, it is necessary that a separation be effected between the uterus and the decidua. As long as the decidua remains connected with the uterus, the chorion villi will continue to enjoy a certain degree of vitality, but the embryo having ceased to live this vitality is bereft of developmental power, and the chorion villi though they may actually grow and increase in size, retain the essential structure which they possessed, when the death of the embryo took place. Accordingly, if the death of the embryo occur very early, and before the appropriation of certain of the villi to form the fœtal placenta has commenced, the ovum may continue to grow, and may remain in the cavity of the uterus; and in such a case the whole of the chorionic mem-

brane would give rise to hydatidiform villi. If, on the other hand, the death of the embryo be postponed until the formation of the fœtal placenta has commenced, the hydatidiform degeneration will be necessarily limited to the part of the chorion which is in contact with the decidua serotina. In the specimen exhibited and described the affection is thus limited.

In the specimen exhibited, the size of the hydatidiform cysts is very inconsiderable. In the more generally known specimens these vesicular bodies have attained a much larger size. Thus some are described as of the size of a currant, some as large as grapes or even gooseberries, and it does not appear that the limitation as to the size is anything more than accidental. They continue to grow, as long as the uterus is tolerant of their presence, by virtue of absorption from that part of the decidua which remains still connected organically with the uterus. This portion of the decidua continuing to be supplied with blood, will continue to supply nourishment to the chorion processes, and so contribute to the increase of the size of the hydatidiform cysts.

After the chorion villi have attained a certain degree of development, they are no longer capable of undergoing the hydatidiform degeneration. Regular blood-vessels having taken the place of these processes, the conditions necessary for the production of these peculiar vesicular enlargements no longer exist. The period within which the hydatidiform degeneration may occur, does not probably extend beyond the middle or end of the third month at farthest; and if the fœtus perishes subsequently to this time, the hydatidiform degeneration will not be met with.

When the degenerated chorion villi remain for some months in the uterus, the whole is seldom expelled *en masse;* and the apparent absence in some cases of the membrane from which the chorion villi depend has created in the minds of some observers doubts as to the non-hydatidiform nature of the cyst-like bodies. It must be remembered that this membrane is of very limited extent, and may be easily torn or rendered less evident in the process of extraction;

in the specimens, however, which I have examined, traces of it were always present.

The *history of the embryo,* in connection with the origin of hydatidiform chorion villi has been only incidentally referred to. In the larger number of cases, careful examination of the diseased mass expelled from the uterus discovers no trace whatever of a fœtus, but in some few cases a fœtus is discovered. When, in cases of hydatidiform degeneration of the chorion villi a fœtus is found, it is always very small; the largest of which I have found an account is represented in Dr. Granville's 'Graphic Illustrations of Abortion,' and this one measured about an inch and three quarters in length. In the majority of cases its size is much less considerable. The evidence obtainable on this point then goes to show, that in cases of hydatidiform degeneration of the chorion, the embryo perishes at a very early period, so early as to leave no tangible traces of its existence behind, or that it does not survive a period which may be fixed at or near the end of the third month. In my own case above related, no embryo was discovered. The fact that the fœtus when found to be present in cases of hydatidiform degeneration is always small, furnishes in my opinion an argument in favour of the theory which I have advocated, viz., that the chorion villi become altered subsequently to the death of the fœtus. If the fœtus perishes *subsequently* to the time during which alone, according to the theory in question, the villi can be changed into vesicular-looking bodies, it accords with experience that no hydatidiform appearances will be observed.

A case has very recently been recorded by Mr. Michael, 'Beale's Archives,' iv, 320, in which the "so-called hydatids of the placenta were developed on the membranes at some distance from that organ.

"The placenta and membranes," says Mr. Michael, "were normal, with the exception that at about three and a half inches from the placenta, there existed a patch of hydatid-like bodies about the size of the palm of the hand. The vesicles had the usual characters of the so-called hyda-

tids, and varied in size from a hemp seed to a nut. The development of these bodies is probably to be accounted for on the supposition, that a few of the villous processes which, at an early period of development, completely cover every part of the chorion, had remained in this situation, and had been developed into the bodies above described."

The case of Mr. Michael shows that one or two of the chorion villi alone may exhibit the hydatidiform change, the placenta being well formed. The circumstance, however, in no way affects the explanation offered by myself. I interpret Mr. Michael's case as follows:—the patch of "hydatid-like bodies" were chorion villi, which from some cause or other did not become involved, as did the other chorion villi, in the formation of the placenta, and retaining to a certain extent their connection with the decidua, were to all intents and purposes in the same position, as regards their development, as if the embryo had perished. It must also be recollected that even after the middle of pregnancy, the dwarfed chorion villi may be detected, if properly looked for, on the surface of the ovum away from the placenta. One or two of these might readily "grow" a little, by absorption from the uterus.

Whether, then, we consider the minute anatomy of specimens of the hydatidiform degeneration, the condition of the embryo when associated with it, or the circumstances under which the change occurs, we find that all known facts are perfectly in harmony with the conclusions now submitted in reference to this subject.

It is difficult to say what is the cause of the death of the embryo, in these cases of hydatidiform degeneration of the chorion; but it may not be uninteresting to inquire briefly into the nature of the circumstances which may be supposed to attend on, or conduce to this result.

Supposing the ovum to be healthy, and abortion to occur, the cause of the abortion is generally contraction of the uterus on its contents, and this may of course be produced in a variety of ways. The death of the fœtus in cases of

hydatidiform degeneration is caused, as I have been led to believe, by contraction of the uterus of a less violent, but of a more sustained character, during the early weeks of pregnancy; the degree of contraction being insufficient to produce such a complete separation of the ovum from the uterus as to lead to its immediate expulsion, but quite strong enough to reduce materially the supply of blood sent to the maternal membranes, through which the fœtus is nourished. The first result which would occur under such circumstances, would be the death of the fœtus; and the second, supposing the ovum still to maintain its connection with the uterus,—the degeneration of the chorion villi above described. This explanation has suggested itself in consequence of a consideration of the facts of the case related above. It will be recollected that the patient, who was delivered of the specimen now exhibited, was suckling at the time the abortion occurred, not being aware of her pregnant condition. From the first, then, the well-known influence of mammary irritation in producing contraction of the uterus, was in operation; and it may be conjectured, with much plausibility, that the repeated contractions which doubtless took place during suckling, produced the result described, and in the manner which has been suggested. The influence of lactation in producing abortion has been adverted to by more than one observer. Dr. Barnes, in an able paper published in the 'Lancet' for 1852, brought together some facts which bear on this interesting question. Dr. Barnes found that, in a number of cases of abortion, into the particulars of which he had inquired, abortion occurred in 17 per cent. of cases of conception during lactation, and in only 10 per cent. of cases in which conception occurred independently of lactation, thus showing that abortion is peculiarly liable to occur in women who are suckling. Respecting those cases, then, in which abortion is due to the influence of lactation, it appears to me highly probable that the abortion is brought about in consequence of the interference with the nutrition of the embryo caused by contraction of the uterus. If, the embryo having ceased

to exist, the ovum is not thrown off, the hydatidiform degeneration is the natural result.

Lactation is only one of a number of possible causes of the death of the embryo. The development of the embryo may be arrested from a variety of causes which cannot be enlarged upon in this place.

The *symptomatology* of cases of so-called hydatid pregnancy, so far as the mother is concerned, has received much attention at the hands of several writers, Dr. Montgomery in particular, and I have nothing new to offer on this subject. In a large number of cases the uterus retains its contents until the fifth or sixth month, and watery, alternating with slightly-sanguineous discharges, are previously observed. The deficient or irregular mammary sympathies, and the rapid increase in the size of the uterus, are the more prominent of the symptoms present in such cases. The hydatidiform mass may be retained in the uterus, and continue to grow for eight, nine, or ten, months, and in very extreme cases even longer.

An important practical question has been more than once raised. *Can a portion of retained placenta take on the hydatidiform change?* If the view I have taken of the history of the formation of the hydatidiform mole be correct, this question is to be answered as follows:—The placenta belonging to a mature fœtus cannot, if healthy at the period of the birth of the child, become the seat of the hydatidiform change, the chorion villi having long since disappeared and become converted into blood-vessels. The only circumstances under which hydatidiform bodies might be subsequently expelled from the uterus, and give rise to the supposition that they arose from degeneration of a retained placenta, are, as I believe, the following:—Firstly, in cases of double conception, when one embryo having perished at an early period, the membranes thereto belonging have undergone the hydatidiform degeneration and are not expelled from the uterus together with the normal placenta. In illustration of this position a case may be referred to which was published in the 'Lancet,' for 1846, vol. i, p. 430, in which

a hydatidiform mass (in bulk about three pints) was expelled *together with* a normal placenta. In this case it is most probable that there was a double conception, and if the remains of the diseased ovum had not been expelled *with* the normal placenta, but some weeks or months subsequently, the case would have come under the above category. A *second* possible case is that a portion of the chorion villi may become separated organically from the fœtus at an early period and undergo the hydatidiform degeneration, whilst the remainder grow and nourish the fœtus up to the full time, as in the case related by Mr. Michael before alluded to. If the diseased portion were retained in the uterus, the supposition before alluded to might arise.

One other question only remains to be discussed: Can true hydatids be expelled from the uterus? and if so, how are they to be distinguished from the vesicular bodies which owe their origin to the degeneration of the chorion villi?

There can be no question but that the cases related of expulsion of the true hydatids from the uterus are, with the exception of one or two cases (and these are not altogether free from doubt), in reality cases of hydatidiform degeneration simply. Still, it would appear that the possibility of an expulsion of true hydatids from the uterine cavity must be admitted. When so expelled they, doubtless, originate in the substance of the uterus, and subsequently burst into the cavity of that organ.

A case which I had an opportunity of observing in St. Mary's Hospital, about a year ago, presented some data which may be usefully and appropriately mentioned in connection with this question. A young unmarried woman died with excessive enlargement of the abdomen, and on examination it proved that the peritoneal cavity was beset with true hydatid cysts which had originated primarily in the liver. These hydatid cysts were found attached to the uterus anteriorly as well as posteriorly, to the ovaries, to the walls of the pelvis, in fact, few portions of the peritoneal

surface were without them. Had life been prolonged the bursting of some of these cysts into the uterus, or into the vagina, was almost inevitable; and then the phenomenon would have been presented of a young unmarried woman discharging true hydatids from the generative passages.

With reference to the other part of the question, How are the true hydatids to be distinguished from the degenerated and enlarged chorion vesicles? it must be answered, that a careful examination of the bodies expelled, by the naked eye and by the aid of the microscope, should be sufficient in every case to set the matter completely at rest. In the case of true hydatids, we find cysts enclosed one within the other, in the case of hydatidiform vesicles we find round or oval bladder-like bodies attached one to the other, somewhat after the manner of a string of beads, with slender peduncles or intervening connecting portions. Moreover, the well-known hooklets of the hydatids are usually found when the cysts are really of hydatid origin.

DESCRIPTION OF PLATES IV, V, AND VI, ILLUSTRATING THE ABOVE PAPER.

PLATE IV.

Fig. 1. Hydatidiform ovum, natural size.

a, *a*. Decidua uterina.

b. Decidua serotina.

c. Decidua reflexa.

d. Amnionic cavity.

e. Hydatidiform chorion villi.

Fig. 2. Sectional view (from the above specimen) of chorion membrane, hydatidiform chorion villi, and decidua serotina. (Magnified seven diameters.)

a. Chorion membrane.

b. Hydatidiform chorion villi.

c. Decidua serotina.

PLATE V.

Portion of hydatidiform chorion villus. (Magnified 350 diameters.)

a. Dilated portion of villus.

b, *b*, *b*. Bud-like pedunculated processes of villi.

PLATE VI.

Drawings from an ovum of about five weeks; chorion structures apparently normal. Introduced for the purpose of comparison.

Fig. 1. One of the chorion villi, magnified seven diameters.

Fig. 2. A portion of fig. 1, more highly magnified, showing the cells on the surface of the villus.

Plate IV

Fig 1

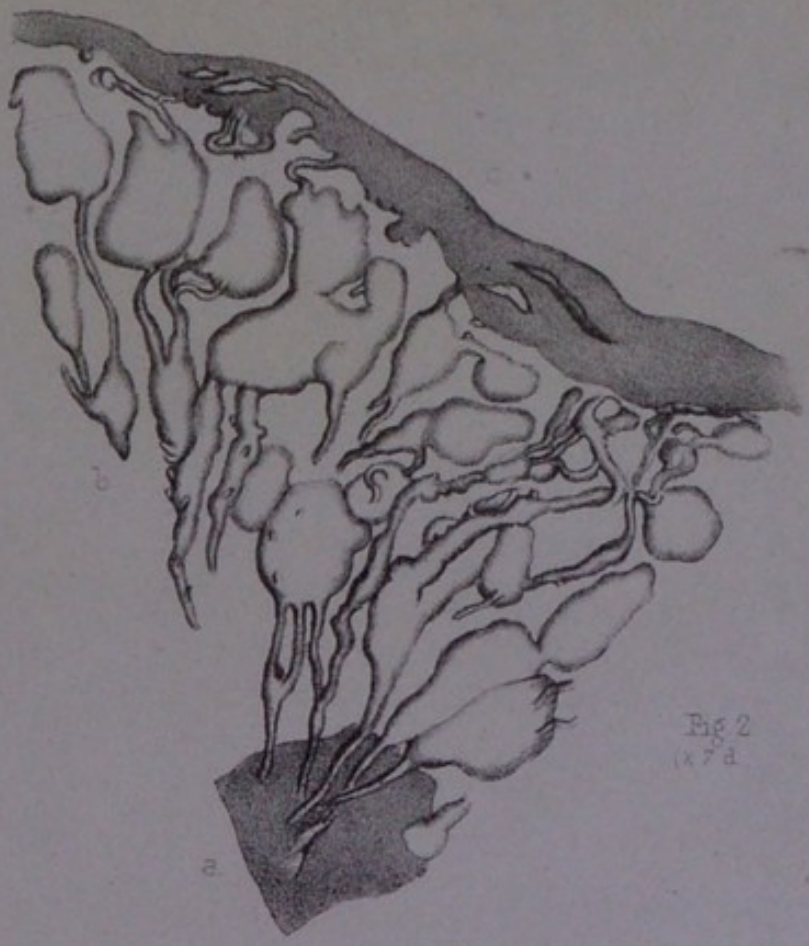
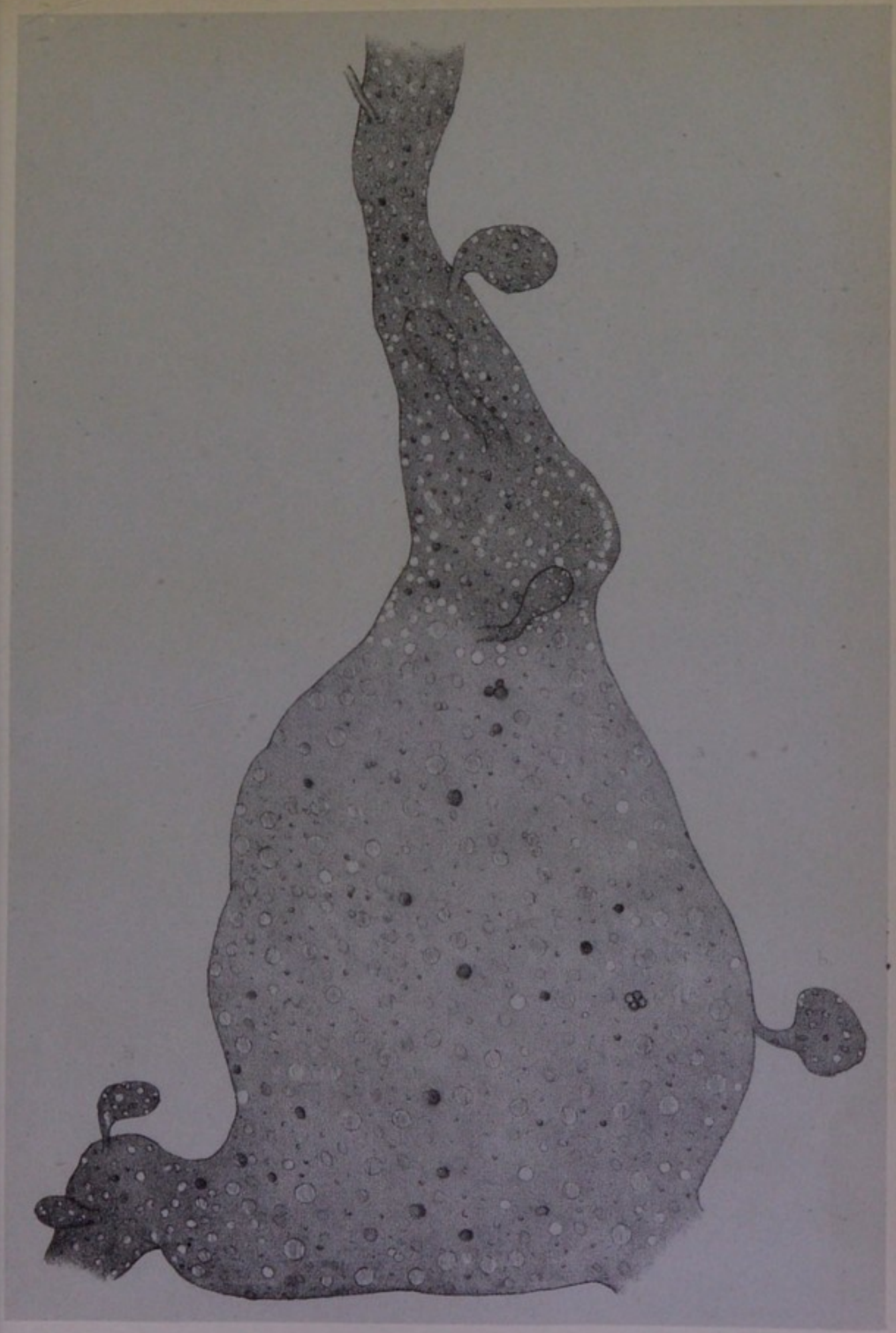


Fig 2
(x 7 d

Cyp. Clérevaux del. et lith.

W West imp.

Plate V



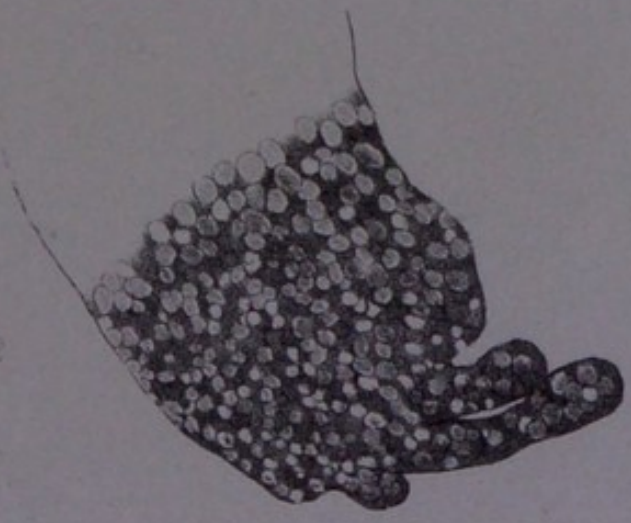
Cyp. Clérevaux del. et lith.

W.West imp.

Plate VI

Fig 1

Fig 2



Cyp. Clérevaux del. et lith.

W.West imp.