

Observations on the term of utero-gestation : with a view of correcting the opinions generally entertained in respect to protacted gestation, etc / by Charles Clay.

Contributors

Clay, Charles, 1801-1893.

Publication/Creation

London : Henry Renshaw, 1855.

Persistent URL

<https://wellcomecollection.org/works/bakefq4q>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

20

OBSERVATIONS

ON THE TERM OF

UTERO-GESTATION.

WITH A VIEW OF CORRECTING THE OPINIONS GENERALLY
ENTERTAINED IN RESPECT TO

PROTRACTED GESTATION, ETC.

By CHARLES CLAY, M.D.

MANCHESTER;

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON
MEMBER OF THE ROYAL COLLEGE OF SURGEONS;
AUTHOR OF "PERITONEAL SECTIONS FOR DISEASED OVARIA;" "RESULTS OF OVARIOTOMY,"
LATE EDITOR OF "BRITISH RECORD OF OBSTETRIC MEDICINE AND SURGERY,"
AND "ENCYCLOPEDIA OBSTETRICA," ETC. ETC.

LONDON:
HENRY RENSHAW, 356, STRAND.

1855.

Preparing for the Press, and will be shortly published,

BY THE SAME AUTHOR,

O V A R I O T O M Y.

THE RESULT OF SEVENTY OPERATIONS FOR THE
EXTIRPATION OF OVARIAN TUMOURS:

WITH OTHER REMARKABLE CASES SELECTED FROM THE AUTHOR'S PRACTICE.

Also,

THE COMPLETE HAND-BOOK OF OBSTETRIC
SURGERY ;

OR,

SHORT RULES OF PRACTICE IN EVERY EMERGENCY,

FROM THE SIMPLEST TO THE MOST FORMIDABLE OPERATIONS
IN OBSTETRIC SURGERY.

TO

THOMAS RADFORD, M.D., F.R.C.P.F.

CONSULTING PHYSICIAN TO ST. MARY'S LYING-IN HOSPITAL,
MANCHESTER ;

LATE LECTURER ON MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN ;

AUTHOR OF THE "ESSAYS ON MIDWIFERY ;"

ETC. ETC.

THIS SMALL PUBLICATION IS MOST RESPECTFULLY

Inscribed,

AS A MARK OF THE SINCERE REGARD AND WARM ATTACHMENT OF

THE AUTHOR

TO ONE WHO STANDS SO DESERVEDLY HIGH

IN THE ESTIMATION OF HIS MEDICAL COTEMPORARIES, FOR HIS STERLING

PROFESSIONAL ABILITIES AND GENERAL WORTH.



Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

OBSERVATIONS
ON
THE TERM OF UTERO-GESTATION,

WITH A VIEW OF CORRECTING THE OPINIONS GENERALLY
ENTERTAINED ON THE SUBJECT OF
PROTRACTED GESTATION.

THE following remarks have already been made the subject of a short paper communicated to the *Record of Obstetric Medicine* about four years ago.

The additional matter I am now enabled to offer, and the opportunities which have since occurred for making some slight alterations, corrections, and additions, coupled with the great importance of the question will, I trust, be a sufficient excuse for its present appearance.

The object I have principally in view, is to elicit information from my medical brethren, on a point of great interest, and high importance in medical philosophy, by suggesting a new path for investigation, which will require a larger field of experience to confirm than I possibly can (as an individual) command, so far as to claim the credit of substituting standard axioms for those which have long been considered as established on this subject.

I have for many years been pursuing a series of inquiries *as to the term of utero-gestation*, in order if possible to arrive at some definite conclusion respecting it; and if possible also to ascertain *the laws* by which this period is governed.

Hitherto this subject has been exposed to the most conflicting opinions, scarcely any two authors agreeing upon it; nor is it likely that anything approaching unanimity can

prevail until some clue is discovered as to the natural laws by which this period is regulated, and which has apparently so far escaped the notice of physiologists.

The difficulty of obtaining direct evidence respecting correct periods of utero-gestation must be apparent to all, *on account of the delicate nature of the inquiry, particularly in respect to the human species*, and will always militate against the accumulation of a large number of facts necessary to the establishment of an important law in nature; still there are on record such facts which cannot for a moment be doubted, and when these, with other general observations, are supported by facts resulting from inquiries and experiments on the animal kingdom, though lower in the scale of creation than man, I conceive that it is possible to promulgate a new law, approaching much nearer to the standard of truth and probability, than any hitherto admitted.

Having in my possession a considerable amount of evidence extending over the last thirty years of practical experience, which fully bears out my opinions, I believe I am justified in offering these proofs to public consideration, not by giving a very minute detail of each case, whether occurring to myself or others, for that would be too tedious at present. But I shall content myself with a general statement of facts, omitting nothing which will be necessary to throw light on the inquiry.

The main principles I wish to establish by this investigation are, *First, to prove* that the term of utero-gestation is a question entirely regulated by the ages of the individuals concerned in the act, and if this be allowed, *Secondly, to show* the value and importance of such a law medically as well as legally.

With regard to the first proposition, I have to advance cases in my own practice, and others where, when the circumstances of the cases *have been in every other respect analogous, the terms of utero-gestation have agreed.*

In my own practice I have had *four cases* of completed gestation before the fifteenth year of age was attained. *Seven* before the completion of the sixteenth year. Three cases

of pregnancy well defined in the fifty-second year. Two cases equally well defined, one at twenty-five, the other at thirty-five years of age.

Upon these sixteen cases of my own, supported by one case of pregnancy at twelve and a half years by T. Smith, Esq., of Coventry, *three cases* from Dr. Rigby, with some others from various sources, I found the principles I am about to advance.

Those cases only where pregnancy resulted from a single act of coition, the date of which act is known, as in cases of rape, seduction, or some other circumstances equally confirmative, will be admitted as having any weight in the question before us.

The particulars of the first eleven cases—namely, of completion of pregnancy before the fifteenth or sixteenth year, are too disgusting to enlarge upon; some of them being the subjects of legal proceedings. The following general facts were observed. *Five* completed gestation in 267 or 268 days. *In two*, there existed some suspicion, that more than one act had been committed, though a very short interval had elapsed, yet sufficient to destroy the value as correct evidence. The remaining four presented longer terms of gestation than I had expected as attached to their ages; this discrepancy at first somewhat puzzled me, but was subsequently made clear, as I shall explain, after I have gone through the other cases.

In middle life I have two cases; one, the wife of a travelling tradesman, often three and four months from home at a time. On the occasion quoted, he had been absent three months; then returned for one day and night. The wife had ceased to menstruate the day but one previous to his return; their ages respectively, his twenty-six, hers twenty-five. The husband left home the day after; the child was born on the 274th day from this visit.

The other case was the wife of a man suspected of being connected with some violent proceedings in a turn-out, and was obliged to abscond for some months. The wife was menstruating a little at the time of his departure; in fact,

was on the point of ceasing, when he had connexion with her once ; the child was born on the 278th day from that time. Husband's age thirty-two ; the wife thirty-five.

In the decline of life I have also three cases ; all being in the fifty-second year. In one case, through family disturbances, a temporary separation took place ; four months afterwards, a solitary stolen interview occurred, which was not repeated for some months after. The child was born on the 290th day after the stolen interview. The age of the wife was fifty-two, the husband forty-eight years.

The second case was one of compulsory absence in search of hatting employment, in other words, in the popular phrase of the locality, *a tramp*. He returned home, and stayed two days ; and finding his trade at home still very bad, he set off once more, and was absent from seventeen to eighteen weeks. The age of the wife was fifty-two, husband forty-six. This child was also born on the 290th day, dating from the first of the two days he visited his home. Both these last cases had had large families previously.

Third case, equally well defined, went to the 291st day.

Before I proceed to arrange these materials, I must allude to the case of Mr. Smith, of Coventry, where gestation was fully completed at twelve and a-half years of age. This single case bids fair to upset all our previous definitions of capability of conception in early years. I will not enter into all the particulars of this very disgusting case. It will be found fully reported in a letter to myself published in the *B. Record*, page 360, vol. i. It is sufficient for my purpose to observe that the rape first occurred in November, 1847, and was repeated four times ; but as she menstruated at the end of November, it is presumed that conception had not then taken place. The intervals were about a week, this brings the case to the end of the first week in December ; she further speaks of two connexions preceding the December menstrual period. In all probability, conception might occur from the 20th to 25th. If the 20th, as she was delivered on the 16th of September following, would only make 270 days. If from the

25th, only 264 days. As it is impossible to arrive at correct conclusions respecting the conception in this case, it must only be valued on its general bearings. Two things must not be lost sight of in this case. 1st. She began menstruation a little before her tenth year. 2ndly. The age of her uncle (the seducer), was forty-seven years; a fact I shall direct your attention to hereafter. The birth and baptism of this girl are well authenticated.

In all these cases, *one prominent* fact is fully and undeniably illustrated—viz., *that the younger the parties concerned, the shorter the term of utero-gestation; and, vice versá, as age increases, the term of gestation is proportionably lengthened.*

What further proofs have we to support these views? In the *Buffalo Med. Jour.*, U. S., some well defined cases are advanced; the results are—

At 17 years	270 days.
19 „	272 „
30 „	276 „
44 „	284 „

In this table the ages of the males, however, are not stated; which, as I shall show hereafter, is of great consequence in this question; but mark the progressive length of gestation with the ages. In the same journal are experiments on 621 cows. Results thus:—

50 calved between 260 and 270 days.	
556 „ „ 270 „ 280 „	
14 „ „ 280 „ 286 „	
1 „ „ 290 „	

It is very remarkable that so striking a resemblance of periods exists between the cow and the human being; but it is still more remarkable that all in the above table that came within 270 days were heifers on their first calf, and all that exceeded that period were cows of more than one calf, and some old cows, with large bellies, went to the extreme periods.

In this table there is no statement of the age of the male, though it is well known there is seldom much difference in this respect in domestic animals. It is only human beings that indulge in the unnatural disparities of age.

SIMON WINTER gives the following on mares.

8 foaled at	340 days.
3 " 	342 "
3 " 	343 "
1 " 	346 "

This table gives no ages, and is only of value to show that the term varies; but fails to prove from what cause, this variation is but slight, probably arising from trifling differences as to age.

The same may be said of the following from Brugnone.

Results of 55 mares.

Days.		Days.		Days.	
1 . . .	273	1 . . .	339	1 . . .	348
1 . . .	307	3 . . .	340	2 . . .	351
2 . . .	330	1 . . .	341	2 . . .	352
2 . . .	333	3 . . .	342	1 . . .	353
2 . . .	334	2 . . .	344	1 . . .	356
2 . . .	335	3 . . .	345	1 . . .	357
4 . . .	336	4 . . .	346	1 . . .	369
2 . . .	337	4 . . .	347	1 . . .	389
2 . . .	338				

Thus exhibiting a difference of two months and a half between shortest and longest period.

Tessier found in 200 mares a difference of 83 days.

In the *Journal d'Economie rurale Belge*, in a large table of experiments, a difference of 97 days was found.

M. Grille in 114 mares found a difference of 93 days.

Lord Spencer in 764 cows found the shortest gestative period 220 days, the mean average 285 days, *youngest* having shortest term, and the *old ones* the longest term.

In 65 sows—

2	. . . . .	104th day.
10	. . . . .	110th „ to 115th.
23	. . . . .	115th „ to 120th.
27	. . . . .	120th „ to 125th.
2	. . . . .	126th „
1	. . . . .	127th „

A difference in this short term of no less than 23 days, the oldest animals taking the longest term.

In 154 rabbits—

1	. . . . .	27th day.
7	. . . . .	28th „ to 29th.
53	. . . . .	30th „
61	. . . . .	31st „
29	. . . . .	32nd „ to 34th.

Showing a difference of 7 days in this very short period of gestation.

DR. MERRIMAN'S *Table of 114 mature births, dated from the last day of menstruation.*

3 in . . .	37 weeks.	10 in . . .	43 weeks.
13 „ . . .	38 „	4 „ . . .	44 „
14 „ . . .	39 „	1 „ . . .	303 days.
33 „ . . .	40 „	1 „ . . .	305 „
22 „ . . .	41 „	2 „ . . .	306 „
15 „ . . .	42 „		

This table is valueless, as there is a week of latitude more or less in each case, and the ages of parents are not mentioned. Some days of error may have arisen as to the exact time of conception. It is impossible all these cases should be impregnated on the same day following menstruation.

“These statements,” says Dr. Meigs, “show that gestation is by no means a fixed term in any genera.” And again, “the nature of the womb, as well as that of the child, is such as to render it impossible that the laws that govern the contractility of the one, or the rate of development of the other, should

operate in all cases in equal times. The womb of one individual, as well as the foetus within it, may be ready for the act of parturition earlier or later, *according to the force of a variety of causes to the operation of which they are liable.*"

Now we admit that all these facts show beyond doubt that the term of utero-gestation varies as to length, but we are not to conclude from these facts that there is not a fixed term for cases strictly analogous to each other as to age and circumstances. Had these tables I have been quoting given the ages of both parents, extensive and valuable information might have been elicited in support of my views, *as it is* I must rely on more limited evidence, in expectation that time will unravel this question with greater certainty.

If we place in juxtaposition the few cases that I have been able to collect from my own practice, as well as those published on which full reliance can be placed, scarcely more than twenty, yet they exhibit one great truth, namely, that as age progresses, the term of gestation is proportionably lengthened.

At 12½ years	264 days.
15 "	267 "
15 to 15½ "	267 "
16 to 17 "	270 "
19 "	272 "
25 "	274 "
30 "	276 "
35 "	278 "
44 "	284 "
52 "	290 "

Here is a difference of a month in the length of the longest compared with the shortest period ; but what is of the highest value in this table is, that it shows a cause, or at least an apparent cause for it, in the progressive age of the individual.

Few as these cases are, they are sufficient to throw a new light on this subject.

I will now produce evidence confirmative of this fact from other sources. I have already shown in the table 621 cows,

that all those whose term was under 270 days were young ones, chiefly heifers of the first calf; that those over that period were middle-aged cows of more than one calf; and those of 290 days were old large-bellied cows. This speaks largely in favour of length of term, regulated by age; and I believe there is not an intelligent cattle breeder but is well aware that the older domestic animals, horse, cow, pigs, sheep, rabbits, dogs, hens, &c., go longer in their gestative periods than the younger ones of the same species. It is a matter on which there is no two of a different opinion. The old stallion, bull, boar, &c., is avoided, as well as the old female of the species; not only because the progeny is not likely to be promising, but because they are termed slow, or long in breeding, and often attended with failures. It would be as well if man would be as alive to his own interests in respect to his own species; but as I have before stated, no animal indulges so much in disparities.

Dr. Meigs says, "It would seem that the most common observations and proofs are incapable of expelling from the public mind, opinions that have long been established, upon whatever foundation, however unsubstantial. There is hardly any one who does not know that the term of incubation of the barn-door fowl is uncertain; and that, though it ordinarily lasts twenty-one days, the chick is found to escape from its shell on the twentieth, or to linger in it, sometimes to the twenty-second or twenty-third day. Similar facts (as regards the gestation of our domestic quadrupeds) are abundant, and sufficient to demonstrate the latitudinarian character of what is called term."

With all due deference to so high an authority, and in answer to this very positive doctrine, allow me to state that some years ago I witnessed a curious experiment in reference to this subject, on the eggs of domestic fowls. The eggs of hens can easily be distinguished; *that is*, poult eggs can be selected from those of hens of three or more years old. A certain number of poult eggs were placed under a young hen, and an equal number of older hen eggs under an old hen. The

result was, that every chick had escaped its shell from under the young hen at least twenty-four hours, some thirty-six, sooner than those of the old hen. This difference is even more remarkable in the short period of incubation than that already pointed out in tables before alluded to.

From these circumstances, I think it is pretty evident that the duration of the gestative period is far more definite than has hitherto been supposed *as to the length of term*, and I am even bold enough to assert, that where the circumstances are equal, the result is very nearly the same; in other words, that there is a definite term for different ages, *a law of nature*, unchangeable, as all the beautiful laws of nature undoubtedly are; and regulated by that beautiful simplicity and regularity which characterise all the physiology of conception, and of which our appreciation is so very limited, indeed, I may say, about which we know so little comparatively.

If this be the case (*and the presumptive evidence is strongly in its favour*), a large portion of the assertions with which our works on medical jurisprudence abound, may be rejected as untenable. Indeed, the wide discrepancies and conflicting opinions of authors, ought long ago to have led to the conclusion that their fundamental principles were based on fallacies; but it is to be feared we are too much in the habit of seeking for solutions of disputed questions amidst the intricacies and difficulties of anatomical science, in preference to being satisfied with explanations evident to all who will duly observe the undeviating and simple proofs presented to us by nature herself.

Although it is clear that the consideration of these facts leads us to a far more correct view of the question, still it is evident that there are some difficulties to be surmounted, and if these are not fairly met, the conclusion I have come to respecting a definite term according to age, will be wanting in uniformity. It is, therefore, quite necessary that I should state that whilst I maintain that utero-gestation is definite and regulated by age, *that age* is not to be calculated by that of the mother alone, but by the combined ages of both parents. In this view, I have been supported by the following facts:—Four

of the eleven cases mentioned in the early part of this paper had a longer period of gestation than had been assigned to them, by my calculations based on the age of the *mother alone*. But what was the fact? In every one of these four cases the male parent was considerably *older* than the female impregnated; two of the men being married and fathers of four or five children each. In other cases, I observed the same irregularity, but always attached to couples in which a disparity as to age existed.

When I considered these circumstances, and compared them carefully with the recorded experiments on other animals, with the many well-grounded observations of experienced persons, it appeared to me not only reasonable, but positively necessary, in arriving at correct conclusions, to take into the calculation the age of both parents, and by instituting a number of inquiries, I found that by striking a mean between the two ages concerned, I was enabled to draw still more correct conclusions. To illustrate this point of my argument plainly, I will place it in figures. Suppose a female of 20 to cohabit with a male of 30, I expect a result equal to an age of 25. Although this still approaches nearer to correctness than any former experiments, I speedily discovered that there still existed rather more variety than I expected, which I supposed to arise from the well-known fact that a female arrives earlier at maturity than the male; therefore, by making a slight allowance for this in striking the mean, I came as near correctness as I could wish. Thus, by taking the same figures, a female at 20 and a male at 30, I do not fix upon 25, as stated just now, but 24; and *vice versá*, a female at 30 and a male of 20, the result would be, not 25 or 24, but 26. By adopting this simple plan, I was enabled to arrive at a mode of calculating the probable duration of a gestative term, as nearly correct as may be.

Notwithstanding all this, it will require a long series of well-conducted inquiries, by many persons, before the full truth of these positions can be fully substantiated; and it is also probable that some modifications may be found to be necessary before an established rule can be founded. Still I

think the evidence already adduced is quite sufficient to prove that gestation is regulated by the age of the parents, although the exact number of days or hours may not as yet be rightly fixed. It is evident, therefore, that gestation is lengthened beyond the mean of two ages where the female was the senior, and below the mean if the female was the junior. In the case of Mr. Smith, of Coventry, of the girl delivered of a mature birth at the age of twelve and a-half years, the length does not appear much shorter than the number of days attached to fifteen and a-half years ; the reason is obvious, the seducer in this case was forty-seven years of age. The difficulty of arriving at the point of conception within five or six days, in this case, prevents any just conclusion being drawn from it. But I appeal, in confidence, to the other cases ; supported, as they are, by the experiments on animals, where the ages are referred to. These facts are generally admitted, *except* by medical men, in reference to the human being. But why should it be different here ? If there is a law of this kind, it is not likely mankind would be made an exception. Is it not infinitely more reasonable than the *thirty-nine weeks plus one day* of Dr. Blundell, and others (founded on the day of the annunciation and birth of Our Saviour) ? which, in that case, might be perfectly correct ; but as applied to all ages and circumstances indiscriminately, is manifestly wrong. Every careful observer knows it to be so—every work on obstetrics, every work on medical jurisprudence, as well as the experience of every practical medical man, proves it a fallacy ; else the question could not be in its present unsettled position. So many periods of gestation could not exist if there was one for all, and that one would have been discovered long ago. In lieu of that we have, according to Dr. Ryan—

Dr. Ryan	272 days.
Dr. Blundell	274 „
A variety of Authors	280 „
Ditto ditto	283 „
Prussian code	302 „
Napoleon code	300 „

Rigby gives three cases of rape, &c., at 260 days.

264 „

276 „

Meigs 280 „

There are no doubt many well-authenticated cases on record, proving the term of utero-gestation may be extended a few days from one extreme of gestative life to the opposite, or a few hours in individuals under similar circumstances. But I boldly deny that the gestative period ever did extend to months, or even weeks, beyond the term natural to the age of the parents, where the fœtus and mother are normal in all their bearings. Indeed, I very much question if it could be extended to more than a few hours beyond the point fixed by ages.

Table of cases of pregnancy from single coitus.

	Case.	Days.		Case.	Days.
Desormeaux	1 . . .	287	Clay	1 . . .	274
Girdwood	1 . . .	274	„	1 . . .	278
Montgomery	1 . . .	280	„	3 . . .	290
Rigby	1 . . .	260	Reid	1 . . .	263
„	1 . . .	264	„	1 . . .	264
„	1 . . .	276	„	1 . . .	265
Lockwood	1 . . .	270	„	2 . . .	266
„	1 . . .	272	„	2 . . .	271
„	1 . . .	276	„	1 . . .	272
„	1 . . .	284	„	1 . . .	273
Lee	1 . . .	287	„	6 . . .	274
Deweese	1 . . .	286	„	2 . . .	275
Beatty	1 . . .	291	„	3 . . .	276
Skey	1 . . .	293	„	1 . . .	278
M ^c Ilvain	1 . . .	293	„	2 . . .	280
Ashwell	1 . . .	300	„	1 . . .	287
Clay	5 . . .	267	„	1 . . .	293

These 51 cases fully confirm my views, one case only extending to 300 days, the average of the whole being only 274 days, whilst in opposition to these authorities,

Asdrubali gives one loosely proved case 386 days, Meigs gives one loosely proved case 420 days.

Observe in this table also, that many of the cases are considerably below the usually accepted term of 280 days, and why? Because the greater part (if not nearly the whole) are of young persons, therefore of a shorter period of gestation according to their ages.

Dr. REID'S *additional table of 500 cases, dated from last appearance of menstrua.*

Cases.	Weeks.	Days.	Cases.	Weeks.	Days.
23 . .	37 . .	259	63 . .	42 . .	294
48 . .	38 . .	266	28 . .	43 . .	301
81 . .	39 . .	273	8 . .	44 . .	308
131 . .	40 . .	280	6 . .	45 . .	315
112 . .	41 . .	287			

Total days of all cases, 140,972; 500 cases averaging 281 to 282 days.

Here, again, we have no protracted cases, for supposing every one became pregnant the day after menstruation ceased, the longest cases were 315 days, the shortest 259; and the average of the whole 281 to 2 days. And as an uncertainty exists as to the exact day of impregnation, very many of these may be reduced 7 to 10 days, so that the average truly must be within 280, perhaps 278 days.

Dr. Murphy, 182 cases, reckoning from the last appearance of menstruation, and consequently liable to a few days' error, shows an average of 282 days.

I also as confidently assert, that where the dates of conception and delivery can be indisputably obtained, with the true age of the two concerned, that any two females similarly circumstanced, cohabiting with males of similar ages, the term of utero-gestation would be equal or nearly so.

The more I have inquired into this circumstance, the more I am convinced of the truth; nevertheless, I do not expect that this can be received as a well-defined law, until a larger number of facts are accumulated to confirm it.

The variety of opinion relative to the term of utero-gestation is in itself a proof of its fallacy. I do not deny that each term spoken of might be perfectly correct, as applied to individual cases, but equally incorrect if applied generally—namely, as a given number of days to all ages.

Such uncertain statements will always result, whilst the mode of ascertaining information rests on an uncertainty; and what can be more uncertain than to calculate from the last appearance of menstruation? Circumstances of equal difficulty attend the point of quickening. Some modern authors, even of considerable celebrity, still maintain the possibility of a thirteen and even fourteen months' gestative period. Dr. Meigs, in the belief of the possibility of long protracted gestation, gives two cases, *one* from the writings of Professor Asdrubali. The female *supposed herself pregnant*, March 1st, 1795. Her husband died on the 22nd of the same month, and being a noble family an heir was desirable, and she began to assume that she was pregnant from March 1st. Although the husband's relatives denied it, she quickened, *according to her statement, at the fourth month*. At the ninth, pains again occurred, but she was not delivered till the 29th of April in the following year, or a gestative period of 425 days. I have only to remark in this case, that it will not stand scrutiny; at the beginning of the ninth month she had a slight discharge and pains (in fact quickened), and if this date is fixed upon as the quickening, then we have the natural term of 273 days of gestation, which, in spite of all arguments, seems to be the truth of the case.

The next case of Ann Gideon. *Supposed herself pregnant* in July 1839, whilst suckling her last child (not very probable). A physician, thinking it might be so, ordered the child weaned, but she did not wean till September. On the 20th of November she considered herself quickened; but on the 10th of April, 1840, smart pains and discharge ensued, but no labour. She was confined on the 13th of September, 1840, or 420 days after she *supposed herself pregnant* in July, the year previous. Dr. Meigs seems to *think* she had the appearance of

candour, and *really thought herself* pregnant in July, 1839. There is a curious coincidence in this case with the last, if the suppositious evidence is done away with, and we consider the pains of the 10th of April, 1840, *as the real quickening* at four months; then from that to the 13th of September following, would just make a probable natural period of pregnancy of 278 or 279 days, which I must confess seems to be the most likely view of the case.

To show how easily such a case might be assumed contrary to the fact, I will suppose a case under the most common circumstances likely to happen. Suppose a female in the habit of menstruating at the beginning of each month, and for the sake of facility I will suppose she is menstruating on the first two or three days in January. Now this female, from a thousand and one likely causes, takes a severe cold on the eve of the month preceding the menstruation that should occur in February, and the marked interference is so far influential as to put aside the usual appearance for that month: she gradually, however, recovers, but the law of periodicity, though interfered with, *is not altered*; and no appearance is likely to occur till March. But immediately preceding the March period the female is recovered, and is impregnated. Now what is the result? This person calculates from the last appearance of menstruation; she is perhaps also supported in this view by her nurse and medical man; and as she is delivered at the end of November or beginning of December, which would only be thirty-nine weeks plus one day from the March period; yet reckoning from the last appearance in January, it would show a result of 333 days, or forty-seven weeks and four days. Here is apparently a twelvemonth's pregnancy within three days, according to this mode of calculation.

But this is not all; it is very likely, and probably very often happens, that a morbid interference will extend over more than one menstrual period. Suppose the case above to have been obstructed in the March period as well as the February, and subsequently been impregnated before the April period, here is an apparent gestation of thirteen months.

I feel persuaded a great number of the cases of protracted gestation published are cases of this description.

I shall, however, be met with this remark. This uncertainty will not occur if the parties reckon from quickening. To this I answer from thirty years' experience, which includes above 7000 cases of midwifery, and innumerable opportunities of witnessing the diseases (and I may add the vagaries) of females, I can safely say, and that without the slightest hesitation, that I could quote a hundred cases of my own, where the quickening has been noted down in the most positive manner, and yet no pregnancy existed; nay I have frequently in my life been called to cases, apparently in active labour, where there was no pregnancy.

The hope to be pregnant has often, very often, led astray the female mind, and with it, often the mind of the nurse and medical practitioner. I do not advance these facts with a view of deteriorating the opinions of the medical profession. There are often great difficulties to encounter; I have been deceived myself, and can readily suppose others might also be so.

Aristotle, in strong terms, declares those infants said to be born after an eleven months' gestation to be unworthy of credit. *Harvey* declares protracted gestations as rare accidents, and that the law would be right to deny legitimacy to those born after ten months' gestation. "There are many (says Harvey) crafty, fraudulent women, for lucre, or fear of punishment, or other causes, will swear they are with child; many others are easily deceived. Sometimes the most approved signs of ingravidation have not only deluded silly women, but experienced midwives, and skilful physicians."

But in the endeavours to establish, or rather to unravel the law of nature, we are steadily to reject all such loose information, and be guided only by cases of seduction, rape, or well ascertained casual single connexions. Where the dates of conception (from one contact) and delivery are indisputable, coupled with the ages of both parties, then our conclusions will be liable to no objection. Few as they may be, they will

be conclusive as far as they extend, and though our ascent to the summit of Mount Knowledge may be slow and difficult, yet as we advance, the way will be made secure, and there will be no fear of retrograding.

I have shown in the foregoing remarks that a slight difference is observable where the date of conception and delivery is indisputably settled *in consequence of age*; but that without age being taken into consideration at all, the conclusions are far more reasonable, and tend to show a defined limit; and that if age be included, the gestative period is so nearly defined, that a few hours more or less will determine the point.

Lastly, I may add, that every case published where the points I insist upon in these remarks are well made out, they all, without exception, disprove protracted gestation; and, as far as they extend, prove a fixed period for different ages, beyond which, there appears no disposition to enlarge to any thing like the latitude hitherto generally supposed.

Much has been said, and written, on the time most favourable to conception. Most authors agree *that* immediately after the ceasing of the menstrual discharge to be the most fortunate, whilst the period just preceding the expected appearance is the worst. It is not to be inferred from this, that it usually occurs the first day after such appearance. It will be more just to say the first week after menstruation, stands pre-eminently before any other time for favouring conception; thus, if pregnancy does not arise from a single contact, and the time of that known, there is a space of seven or eight days to rest a supposition upon; and therefore the gestative period may be subject to a little variation on that account.

Before I conclude, I beg to offer a few remarks by way of suggestion, for the extension of inquiry on this important subject. It will be desirable, in all cases, to be recorded, whether in favour or against the propositions here laid down, to secure the following data:—

- 1st. Date of conception arising from single contact.
- 2nd. Date of parturition commencing.

3rd. Age of mother.

4th. Age of father.

5th. In statements of age, where the female is the younger, it must be fixed at the year *below* the mean of the two combined.

6th. Where the female is the older, the age must be fixed a year *above* the mean of the two combined.

It is evident from these, that the only cases that can be relied on for evidence on this point, are those of rape, peculiar cases of seduction, and cases of married life where, after long absence, a single visit has been made, and pregnancy resulted. It follows, therefore, the cases will be necessarily few, and difficult of selection.

In the lower orders of animals, from which valuable evidence may be derived, some little caution will be required in collecting evidence.

For instance, the capability of conception is much earlier, and the prospective value of life much shorter, in domestic animals than in man. Therefore, the calculations must be regulated differently.

It will, therefore, be better to consider the ages of the parents by months and not by years. Presuming this, then, in striking the mean of two ages, I would suggest, that where the female is the younger, so many months or weeks *below the mean*; or, where the female is the older, so many months or weeks *above* the mean.

On this principle I would suggest, as approaching near to the truth, but, of course, liable to some little correction, the following. In striking the average, allow to the

Mare	8 months, more or less.
Cow	6 " "
Sow	4 " "
Sheep	4 " "
Bitch	3 " "
Doe Rabbit	1 " "

With respect to the date of conception and delivery, these

in domestic animals can easily be obtained to the hour as well as the age. Thus affording us many opportunities towards settling this question.

And I presume, if evidence can be obtained from such sources of an indisputable character, it is only reasonable to suppose that an analogous law exists in man. The few cases quoted lead to this belief; and I shall be happy to receive any assistance from my colleagues, whether it be in support of my views, or in exposing their fallacy; as truth is the object I have in view in offering these remarks.

NOTE.

I.

I have frequently made inquiries of experienced practitioners as to the point of dating conception from the last appearance of menstruation, and have, with scarcely an exception, received for reply, that it is very difficult to decide which of the circumstances, *that, or quickening*, ought to have the preference, *both being extremely fallacious*; and that if any preference at all is to be given, it should be to the menstrual appearance, but reckoning within seven days from the last appearance of the menstrual discharge.

II.

There exists not a doubt on my mind that quickening is also regulated by the same law as the duration of gestation,—*that is*, in proportion to the shortening of the utero-gestative period by age, so much earlier or later occurs the period called quickening. I have scarcely ever asked a female, who has had frequent births previously, but have received an answer that she quickened long after the fourth month; indeed, nearly at the fifth month.