

REVIEWS.

ART. IX.—*Human Ovulation and Menstruation.* (Beiträge zur Lehre von der Menstruation und Befruchtung.) Prof. Dr. Th. L. W. BISCHOFF. In Henle and Pfeufer's Zeitschrift für rationelle Medicin, IV. (N. S.) Hft. i. pp. 129–175. 1853.

THIS recent contribution to Human Generation, by one who stands prominent as an investigator of that difficult department of physiology, and whose researches have contributed so largely to its elucidation, is well worthy of an attentive consideration. We improve the opportunity for some extended remarks on this subject, in the shape of a somewhat discursive review.

Human physiology has always laboured under the disadvantage that its students have been inclined to isolate man from the rest of zoological creation, as much in his physical as in his moral capacities and relations. There seems to have been a tacit assumption pervading all their inquiries that the human species, in virtue of its high prerogative morally, is likewise removed, as to the laws governing its physiological conditions, from the rest of mammalia. It is true that the influences of artificial modes of life, as introduced by advancing civilization, have so masked the naturalness of many of his functions as to apparently favour this view; but viewed from a normal healthy point, man's physiological conditions hang upon the same general laws, in the strictest sense of the terms, as those of the great order to which he belongs. He has, it is true, degenerated so much physically that his pathology almost exceeds his physiology, and, therefore, there is so much the more need that we use as stand-points general principles, in our examination of the conditions of particular functions.

As might be supposed, in no department has this error been more prominent than in everything relating to the subject of human generation. Aside from the intrinsic difficulties of the subject itself, there is another reason why this construction should be put upon it: this is that, in civilized nations, no class of functions have been so perverted as those relating to reproduction. These perversions, these anomalies, combined with the fact that the nature of the case has obliged us to receive testimony, as to facts, from persons incompetent to observe, have very naturally led to the general opinion that, in as far as relates to this department, man stands aloof from the other mammalia. I refer here particularly to ovulation and impregnation.

Even from the days of Aristotle, the leading physiologists of every age have alluded to or even predicated the more or less complete uniformity of these functions in man with the animals beneath him; but a demonstration of this important point, based upon the careful observation of facts, belongs to very modern times.

Baer, Bischoff, and Pouchet take this merit almost wholly to themselves, although others have followed in their line of inquiry, and furnished valuable results.

Confining our attention to ovulation, menstruation, and impregnation, we may say that these more modern researches have shown that, in the human

female, the menstruation corresponds physiologically to the periodical heat or rutting time of other mammalia; that at each menstrual period, in the healthy state, an egg is discharged from the ovaries, received into the oviducts or Fallopian tubes, and there is ready for impregnation; that the evidence of this discharge of an ovum from the ovary, is the formation of a corpus luteum, so called, in the tissue of the ovary (I omit here any allusion to the relations of the *verum* and *spurium*); that impregnation, therefore, *should* in the normal state be possible only when coincident with these last-mentioned conditions, and impossible at intervening periods.

These are the prominent points, more or less distinctly made out by the difficult and oft-repeated experiments and observations of modern inquirers. That menstruation is not a function *sui generis* and peculiar to man, in its physiological signification, and that an egg is, in the normal state, discharged at every menstrual period—these two points stand well determined; but the others, the relations of the corpora lutea, and the possible period of impregnation, are far less satisfactorily positive; the first, from difference of opinion on the same data; the second, because the contingencies depending directly or indirectly upon the artificial mode of life of man form almost always a barrier to the truly normal discharge of the function.

The present paper of Bischoff is the more interesting and important, as bearing quite directly upon these last two points; and we will now analyze its contents.

This paper was based upon the observation of thirteen cases, which he had had the opportunity to examine during a period of many years. The examinations were made with the characteristic care of this investigator. After alluding to the difficulties attendant upon this class of observations, especially in the human species, such as those necessarily intrinsic to the nature of the case and subject; the usually great length of time after death that examinations can only be made; the difficulty of examining oviducts and ovaries, from partial decomposition; the liability of the egg to disappear, or not to be found, from its extreme tenuity, &c., he proceeds with the details of the cases, of which we give the following synopsis:—¹

OBSERVATION I. Person, æt. 20. Died during menstruation. Had borne a child in former years. Uterus was found filled with blood, and the ovaries contained numerous highly developed Graafian follicles, and several corpora lutea in different stages of retrogression; but one of these last appeared recent, and was filled with blood. No egg and no spermatie particles were anywhere found, upon the most careful search. The inner uterine surface presented some changes, having a velvety aspect, and a more or less development of the uterine glands.

OBSERVATION II. Person^c of unknown life, who had drowned herself. Right ovary contained a very large Graafian follicle, inclosing a distinct egg. No appearances of existing menstruation, but rather those indicating that it was about to occur, such as the villous development of the uterine surface.

OBSERVATION III. Person æt. 21, who had drowned herself. Had had no children. The period of menstruation had probably just passed. The left ovary contained a very distinct corpus luteum, and the right ovary a ruptured Graafian follicle filled with fresh blood; the walls of this last were already

¹ In consequence of the general manner with which we can here discuss this subject, we omit the numerous measurements of the size of the different parts of the internal genitalia, which Bischoff has given in many of his cases with the greatest care.

thickened, and the first stages of the formation of a corpus luteum indicated. Uterine surface somewhat changed, but no appearance of villi or developed glands. No egg found in the right oviduct, or in the uterus.

OBSERVATIONS IV. and V. The internal genitalia of two young persons received for examination. Death from acute disease during menstruation. The right ovary of each showed a freshly ruptured Graafian follicle, filled with a blood coagulum. Inner surface of uterus presented no marked development, no prominence of uterine glands, and no beginning of a decidual formation. The oviduct and uterus were searched in vain for an ovum, in both cases; neither were any spermatic particles found.

OBSERVATION VI. This case was related in *Müller's Arch.*, 1846, p. 111. The uterine surface presented a considerably far advanced formation of a decidua by the highly developed uterine glands; a recent corpus luteum had begun to be well formed, but, notwithstanding, no egg was found. Bischoff thinks that, three weeks having elapsed since the last menstruation which was coincident with a coitus, pregnancy had commenced.

OBSERVATION VII. Person æt. 19. Suicide by drowning, three weeks after marriage. Right ovary contained a recently ruptured Graafian follicle, inclosing a more or less altered coagulum. The inner surface of uterus was highly developed, vascular, velvety, and indicating the decidual formation; although, from progressing decomposition, the uterine glands were not distinct. No egg or spermatic particles found in oviduct or uterus.

OBSERVATION VIII. Person childless; æt. 19. Suicide by hanging. Eighteen days before death, menses, as usual, of four days' duration. Coitus coincident.

Right ovary contained a very large corpus luteum, and both ovaries had marks of old but spurious corpora lutea, also numerous Graafian follicles. Uterine mucous membrane considerably developed, and two to three lines in thickness; uterine glands also prominent. No egg found in oviduct or uterus; but close to the insertion of the right oviduct upon the uterus, there was a peculiar formation in the mucous membrane, composed of fusiform cells and granules, which resembled remarkably a nest. But in this Bischoff could find nothing resembling an egg; it may be, however, that this structure served as a lodging-place for the egg during its first development in the uterus.

OBSERVATION IX. Maiden, æt. 19. Died of acute disease two days after a menstruation of three days' duration. Right ovary contained a pretty large projecting Graafian follicle, which was still closed, but filled with coagulated blood. Both ovaries contained very small corpora lutea. Uterine mucous membrane presented no marked development; uterine glands not distinct. No egg was found in the oviduct or the uterus.

OBSERVATION X. Person æt. 20. Suicide by drowning. Menses known to have appeared ten days before death. Genitalia, and especially uterus, largely developed, and bore marks of a previous pregnancy. Right ovary contained a recently ruptured Graafian follicle, which, however, formed no projection on the ovary, but rather a dark red spot on its surface. Here, also, out of five irregular lobules, a fresh corpus luteum could be made out, filled with dark coagulated blood, and containing a cavity surrounded by a denticulated yellow mass.

Uterine surface changed, soft, velvety, and highly reddened. Uterine glands developed and quite distinct. No egg found in oviduct or uterus, and no spermatic particles.

The prominent development of the corpus luteum, and of the uterine mucous membrane, renders it highly probable that pregnancy, depending upon the last menstrual period, had commenced.

OBSERVATION XI. Person childless, young, but age unknown. Suicide by drowning. Imperfect menses ten days before death. Coitus coincident. Both ovaries contained the remains of many spurious corpora lutea, as also numerous transparent Graafian follicles. Right ovary contained a very large Graafian follicle *unopened*, but inclosing a brownish, chocolate-coloured matter, evidently altered blood. The walls of the follicle were not thickened, and there were no appearances of a forming corpus luteum. Uterus contained no blood, and its mucous membrane was scarcely changed. Here, also, no egg or spermatic particles were found after the most careful search.

In this case the imperfect menstruation, the want of development of uterine surface, the appearance of Graafian follicle, indicate that probably there was no real escape of an egg, but simply an effusion into the follicle.

OBSERVATION XII. Person childless, æt. 34. Death by epilepsy. Menses of several days' duration seven days before death. Both ovaries presented the marks of old corpora lutea; the right ovary contained a recent corpus luteum. The inner surface of the uterus was not smeared with blood, and the mucous membrane was feebly developed. No egg, as usual, was found after diligent search.

OBSERVATION XIII. Person æt. 34. Suicide by hanging. Menses four weeks, and coitus for several weeks, but lastly four days, before death. Right ovary showed a ruptured Graafian follicle containing no blood-coagulum, and whose walls were only corrugated, not thickened. Uterine surface villous, with glands developed, and the appearance of a decidual formation. As usual no egg, neither spermatic particles, could be found. The history of this case showed that the person was married, and, fourteen months before death, had borne her only child, which she had nursed until within three weeks, when milk failed. During lactation, menses had been regular. Here it is most probable that all the phenomena connected with menstruation were developed without pregnancy, rather than that this last had really taken place.

These thirteen cases I regard as of high value in physiology. Our theories have always been good enough, but there has been a want of well-observed facts on this subject, especially in our own species.

The results here obtained show that in the human female, at each menstruation, a Graafian follicle is ripened, swells, and usually bursts, discharging an egg, and forming a corpus luteum.¹ This is the grand physiological standpoint from which radiate many inquiries and queries. The first query is, is there a rupture of a follicle, with a discharge of an egg, at each menstruation, without exception?

Coste has stated his opinion that menstruation may occur without such rupture, but this statement seems to have been made more upon hypothesis

¹ It is not meant, of course, that this is the first time these doctrines have been put upon the substantial basis of observation, although the present cases are of great value in a confirmatory point of view. As early as 1842, Bischoff and Pouchet brought out these views in a more or less decisive manner, and since an occasional, though all the more precious contribution, has tended to a corroboration of these important doctrines. Among these last, see the excellent paper of Dalton, "On the Corpus Luteum of Menstruation and Pregnancy," a prize essay, in the *Trans. of the Amer. Med. Assoc.* vol. iv. 1851.

than observation.¹ Observation XI. shows that the *apparent* phenomena of menstruation, such as discharge of blood, &c., may be present without even the rupture of a matured Graafian follicle. When such is the case the female is sterile, although regular apparently in her menses. Bischoff remarks that perhaps the dysmenorrhœa may be due to such imperfect development. Bischoff thinks he has observed the same phenomena in the hog; the Graafian follicles seem well developed, but they do not burst, perhaps from an undue thickness of the walls, and blood is effused into their cavity.

The maturation of the egg in the ovary is the essential point in the whole process of menstruation; the menstrual secretion is secondary and resultant. Normally, these different processes all concur exactly, and then conception is possible if there is a coincident presence of spermatic particles. But if all are not concurrent, conception cannot follow; such prominently are, where the egg is matured properly and in due time, but the Graafian follicle does not burst and allow its escape; and where it is matured and discharged normally, but there being no corresponding uterine changes, it does not meet a fit nidus in the uterus, and is therefore lost. From these considerations it is evident that there may occur menstruation in a subject without fertility, but as the maturation and discharge of the egg is the leading inducing physiological process in this compound function, it (that is, this last) can never occur without a menstruation of *some kind*. Medical literature of this department contains numerous cases which, if we could credit, would support almost any theory or view connected with the phenomena of menstruation and conception. But few of these statements are worthy of any reliance, whether they apparently support or not the true physiological view of the case as founded upon observed facts—for upon the whole subject of sexual relation, especially when in a perverted state from physical disease, there seems to be with the patient a kind of moral obliquity which precludes a correct, truthful statement of his or her case, even where the physician or inquirer can see no possible reason for a suppression of the whole truth. This is indeed a most singular fact, but its truth will be attested to by many a medical man who has more than once had his well-grounded physiological views on a sexual subject completely unsettled by statements of patients whose veracity and singleness of mind (on other matters at least) had long been well known. We think it may be stated, therefore, that in everything pertaining to perverted sexual conditions, facts observed by one's own senses must hold the importance of being objective, while the statements of the individuals themselves must be received only as subjective.

Bischoff has related a case finely illustrative of this point, no less than of the sagacity of his mind and clearness of his knowledge on these subjects.

But we will proceed. There can be no doubt from the results of the preceding cases that, when a regular menstruation occurs in a healthy person, and of course preceded by a normal maturation and discharge of an egg, there is always a development of the uterine mucous surface, whether impregnation occurs or not. Thus, this would be the case in every well-developed healthy maiden. But this uterine development to receive the egg may be deficient from various causes, such as sickness, general weakness, local circumstances, &c. This leads to some interesting inquiries and suggestions.

Thus absent or defective formation of this uterine mucous membrane is most probably a frequent cause of sterility, especially if all the ordinary observable

¹ See Coste, *Hist. du Développement*, &c. i. p. 221, and Bischoff's notice thereof in Schmidt's *Jahrbuch*, lxi. p. 367, 1851.

conditions of menstruation are present. An egg is discharged normally, and may even be as regularly impregnated, but it meets no proper nidus in the uterus. Herein, also, Bischoff remarks, may perhaps he found the reason why so many women who have borne one or several children, suddenly cease to be fruitful, and remain so for many years, notwithstanding they continue to menstruate normally and there is no general apparent cause for this condition of things. In civilized life, and perhaps also in savage life where the conditions of generation are more or less normal, it is certain that the productiveness of the uterus ceases long before that of the ovaries. We may add that this is a topic of no small moment outside of the domain of scientific physiology. In the present high march of civilization—the continued introduction of artificial conditions of life—there is evidence of a sad degeneracy in this respect. Early marriages, before the uterine powers are fully matured; the confinement, art, and excesses of a city life, even with a well-developed, robust constitution; these may be mentioned as quite adequate to induce either a complete sterility at first, or at least after the first or second child.

But there is another point in this connection of considerable physiological interest; it is, that it is very probable that the *time* of this uterine development necessary for conception, varies in different females, so that some may conceive a longer, and others a shorter time after menstruation; perhaps also there is a like variation as to the coincidence of development between the egg and this uterine formation. The longest time this uterine development was observed after menstruation was eighteen days, as recorded in Observation VIII.¹ This point, however, has other relations, particularly the question of the *inclusive* possible period of impregnation in the female, which we propose to notice hereafter.

In regard to the so often discussed question of the value of the corpus luteum, and its relations to conception and pregnancy, Bischoff has some valuable remarks which we notice more especially as indicating his real matured views on this subject.²

Bischoff declares that his extended observations have led him to the opinion that there is a real distinction between the corpus luteum of simple menstruation and that of pregnancy; in other words, there are corpora lutea *vera* and *spuria*.³ But the differences are not due to primary physiological relations,

¹ Dalton (*loc. cit.* Observations V., VI.) has recorded two cases in which this decidual formation was observed, one fourteen, the other twenty-one days after menstruation. But it appears to have been subsiding, especially in the latter case.

² It is clear that Bischoff's views on this subject have not sometimes been correctly given, and we think it worth while to here allude to the matter. In a translation of one of Bischoff's writings there is the following passage: "Now, from all these observations, it is quite certain that the ova in mammalia, in the time of health, no coition taking place, are detached from the ovary, enter the tube and perish there; and that the corpora lutea are formed in the ovaries *just as though coition and fecundation had taken place.*" See "On the Maturation and Discharge of Ova, independent of Coition," Gilman's and Telkamp's *Translation*, New York, 1847, p. 45; quoted in Dalton, *loc. cit.* p. 14. This translation does not distinctly convey the idea meant by Bischoff. Bischoff means that a corpus luteum is always formed when an ovum is normally discharged, but does not refer to the question of true and false corpora lutea.

³ It may be well to allude here to the views of those who have more or less recently given attention to the subject. First may be mentioned Peuchet (*Théorie Positive de l'Ovulation Spontanée et de la fécondation des Mammifères et de l'espèce Humaine*, &c. &c. Paris 1847), who, basing his opinion upon theoretical grounds rather than upon direct observation, declares that the distinction between the true and false corpora lutea is unfounded. (See p. 185.)

This is also the view of Raciborski (*De la Puberté et de l'Age critique*, &c. Paris, 1844). But decidedly the work of the most importance in this connection, because

for these are the same in both cases; they depend rather upon secondary conditions. In the normal menstruation, necessary to conception, an egg is discharged as we have seen, and the corpus luteum which is *first* found is precisely the same, whether the egg be impregnated and pregnancy follow, or whether it passes away unaltered. So much for the primary process. But here the parallelism ceases. If conception does not occur, the turgescence of the ovary incident upon the maturation and discharge of the egg quickly subsides, and the opposite state follows. The retrograde changes, therefore, in such a corpus luteum are rapid, absorption is constantly going on, and by the time of the succeeding menstrual period, the remains of the ruptured Graafian follicle, with its effused blood, have been more or less removed, leaving behind only a few markings. This is the corpus luteum *spurium*.

On the other hand, if pregnancy does occur, the changes in the ovary above described are much less marked, the whole internal sexual apparatus being the seat of high vascular action. The consequence is, that the corpus luteum, in its full size, changes very slowly, and generally has diminished but little during the first month of pregnancy; and these alterations are so slow, that they often do not cease until after parturition. It will be readily perceived that a body thus formed will differ, in texture, compactness, colour, &c., from the former, which was subjected to the action of absorption. "But what," asks Bischoff, "is the diagnostic value of this distinction, well-marked as it is at the time?" During pregnancy it is, of course, of no worth; and, after parturition, when the marks on the uterus of pregnancy have disappeared, it is very difficult to decide, in any given case, between a true corpus luteum fast changing, or even more or less disappearing, and a spurious one, which has experienced the changes of two or three weeks after menstruation." He, therefore, concludes that, in really doubtful cases, the corpus luteum presents distinctions of no decisive practical value.

Bischoff here introduces another interesting point—the dependence of conception upon menstruation. We have already remarked that the periodic maturation and discharge of the egg is the primitive essential feature of the menstrual function in the human female. The menstrual flux is a secondary phenomenon; although, in the truly normal condition, there is an exact relation in all these parts of this function. The discharge of a sanguineous fluid would not, therefore, seem necessary for the process of conception to occur, provided all the other phenomena were present—such as a fit discharge of the egg, and a proper state of the uterine surface to receive and foster it. Pregnancy can and has occurred without menstruation,¹ that is, without the usual sanguineous discharge; but this is an abnormal state of things, and, as is well known, from

founded upon well-conducted observation, is the prize essay of Dalton, already referred to. "The object of this paper is," using the language of its author, "to show that this conclusion of Pouchet [such as we have mentioned] is entirely erroneous; that the corpus luteum of pregnancy is different from the corpus luteum of menstruation; and that it may, under ordinary circumstances, be readily recognized and distinguished from it.

Bischoff's view corresponds quite with that of Dalton, and the statements we have made in the text may be regarded as exponent of the views now entertained by most if not all recent inquirers.

For an excellent historical *résumé* of the subject of the corpus luteum, see Dalton, *loc. cit.*

¹ In these cases of the non-appearance of the usual menstrual discharge, it cannot for a moment be supposed that the ordinary decidual formation occurred nevertheless in the uterus; and it is most probable that there was a discharge of some kind *per vaginam*, indicating that these changes were taking place. For a list of the recorded instances of such pregnancies, see Pouchet, *loc. cit.* p. 290.

the earliest times, a regular complete menstruation has been deemed a requisite of fruitfulness. But the inverse of this may be safely asserted as unknown, that is, that pregnancy can occur without this maturation and discharge of the egg, more or less coincident with some form of menstruation. There are many circumstances which may tend to disturb the healthy relations of the menstrual function, leading to its premature and too frequent recurrence; such are, as is well known, change of climate, diet, and particularly sexual excitement. In these cases, although there may be changes and developments in the ovary, yet, in our opinion, they are all abnormal; thus, an egg may be prematurely ripened and discharged, or it may be matured but not discharged, the Graafian follicle being filled with blood. At least, the infertility of such individuals is well known. It would, then, seem pretty well determined that extraneous influences, such, particularly, as sexual excitement, cannot hasten the *normal* maturation and discharge of the egg, as has been supposed, and that all those conditions which superinduce some or all the apparent phenomena of too frequent menstruation lead to abnormal results or infertility.

The last point we shall here take up, in connection with this interesting paper, is the *time relations* of the menstrual period or the maturation and discharge of the egg, to impregnation in the human female.

In the first place, it should be stated that the result of experiment and reliable observation, so far, indicate that the egg is discharged from the ovary and received into the oviduct, not at the *commencement*, but at the *end* of the menstrual period, or rather when there has been prepared in the uterine cavity a nidus for the egg's reception. Another fact, of a collateral character, to be here stated, is, that observation shows that the impregnation takes place while the egg is passing the oviduct, and most probably at the uterine end of this last. In fact, Bisehoff says that, in all his observations upon mammalia, he knows of no instance where conception occurred after the egg had reached the uterus. From these data it may, therefore, be stated that the *inclusive* time of possible impregnation is that from the discharge of the egg from the ovary until it reaches the uterus; and that this period must be a longer or shorter one *after* the end of menstruation. But what is this period? Bisehoff thinks it is from ten to twelve days' duration, and, therefore, that, as a rule, impregnation is possible only during this interval. This would probably stand as a correct and reliable statement, could normal conditions of this function be always predicated. But, in the human female, who is most often in a somewhat abnormal state, subjected to the influences of art and luxury, &c., the possibilities of non-conception render the subject quite complex, open it to individual exceptions, and much impair the reliability of an application of the physiological rule. We will look to some of these possibilities. Thus, the egg may be delayed in its discharge from the ovary; or it may be discharged too soon, say during the menstrual flow. There are contingencies relating to its not meeting with the spermatic particles, and becoming fecundated. Other contingencies belong to what may be termed its not being properly nested after impregnation; these are, a tardiness of its passage through the oviduct, not reaching the uterus until the decidua has disappeared, or its normal passage through the oviduct, but reaching the uterus before the changes in the latter are fully complete; in other words, where there is a want of coincidence between the arrival of egg and uterine changes; or, finally, the egg having reached the uterus normally, it there meets no properly formed membrane or decidua, this last not being developed on account of weakness, sickness, &c. Last, but perhaps not least, in this category of contingencies, and which also will always serve to render the more unsettled the whole subject, are possible relations of the spermatic particles. They may remain unchanged, and still alive, in the

vagina, or rather in the uterus, a long time, ready to meet any possibilities relating to the egg that may occur during the intermenstrual period.

We need not enter upon further details of discussion of these contingencies and possibilities; most of them would be attended by non-conception, and that, too, often when all the general conditions would seem to favour the opposite state. Then, again, suppose that in the same individuals changes of life and habits have taken place, and then these abnormal conditions of want of coincidence between the action of all the parts are removed, conception may quickly occur just when it would have least been supposed; and this either after hitherto complete sterility, or an intervening unfruitfulness of perhaps only a few years. We would particularly insist upon these points as worthy of attention in connection with that most intricate and scarcely understood subject, *sterility*.

On the other hand, suppose conception is to take place—that is, the normal coincidences of ovarian, ovular, and uterine developments occur—yet there may be, as observation has already shown, individual peculiarities which affect and diversify the time relations of possible conception. Thus, the passage of the egg through the oviduct, and the formation of the decidua, may be rapid, and, therefore, impregnation possible only very shortly after menstruation. On the other hand, the inverse of this may be true, with a corresponding result.

In conclusion, therefore, we may say that, although physiology and well-authenticated observation concur to show that impregnation is most possible during the twelve days succeeding menstruation, yet individual idiosyncrasies, combined with contingencies due to abnormal relations of life, seriously affect and unsettle the subject as having any practical value.

Lastly, in this connection, we wish to advance a view which we have been disposed to entertain for some time. It is that, in the male of our species, there is a regular periodical sexual excitation, dependent upon constitutional relations alone, which corresponds to the monthly menstrual sexual excitement in the female. The ordinary conditions of life in our own sex, more or less constant occupation of the mind, the greater or less presence continually of outward sexual influences, these could well preclude the notice generally of any excess of sexual ardour at regular special periods during each month. But, in disease, where these conditions and influences are more or less removed, it might readily be noticed, especially in that class of chronic affections attended with some general febrile action, such as phthisis, &c. It was under such circumstances that our attention was first called to the subject; and since, repeated inquiries have tended to verify this view.

We would say, then, that there appears to be evidence that, in the human male, there is each month a period in which the sexual feeling and ardour is increased, and that, too, independent of external influences. This condition of the system here is attended, as in the female, with an exacerbation of the action of the whole vascular system, an increased physical or general animal feeling, and, finally, manifestations of plethora and excitement in the genitalia. No doubt there is at this period an increased formation of the spermatic particles; and the parts, becoming loaded with this secretion, if the natural mode of relief is not obtained, an emission, involuntary and generally at night, is the result; and this discharge is just as normal and necessary as that of any other overloaded organ or organs, and attended with a like relief.

In disease, this monthly excitement has appeared to us indicated by an exacerbation of those symptoms which relate directly to the vascular system. Thus, in phthisis, the fever will be more marked, the cough more troublesome, and the tightness about the chest increased, conditions corresponding precisely to those of the female under the same circumstances.

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