

Is Parthenogenesis in the Human Species a Scientific Possibility?

by Joseph Clements, M.D.

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In this brief discussion it is not proposed to seek to evidence a specific instance of human parthenogenesis, the proposition is limited to the *possibility* of such a case. True, it has its bearing upon a supposed instance—the virgin birth of Jesus—and if evidence of such a possibility may be forthcoming it will remove a fundamental article of religious faith from a miraculous to a scientific basis. Yet it is important at the outset to note the distinction made between demonstration of a specific instance and evidence of scientific possibility only.

In itself, it is a purely scientific question and is to be so attacked here.

The discussion of parthenogenesis involves the general consideration of the reproductive function and the brief survey only possible here may, nevertheless, afford a sufficiently comprehensive and correct view of the specific form of reproduction giving interest in this study.

Reproduction, given a first organism, is in interest of species or race production and perpetuation, and also of the evolution of higher forms of organisms. The latter point—the evolution of progressive forms of living things—must be dismissed from further mention as irrelevant to the present proposition.

Race preservation is coincident with the coming into entity of the race, and reproduction is first, for the individual, and then for the species.

This distinction is important to note as bearing upon the question to be answered, and as guiding the direction of the argument to be constructed.

The two forms of reproduction are the primitive asexual and the later sexual. The simple method of asexual reproduction by fissure or cell-division, each half the counterpart of the other, was and is the prevailing method in the earliest and lowest grades of organisms, with variations in “budding” and “sporation,” coming on and up to the more complex reproductive function—the sexual.

In organisms more complexly elaborate in their organic structure there are the two sexes with special organs and functions. Sexual reproduction is achieved in the union or coalescence of two cells, an ovum and spermatozoon. In some unicellular organisms there are both male and female germ-bioplasm, a sort of hermaphrodism, and evolution moves toward the perfected sexual function.

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The essential quality or character of normal or perfected sexual reproduction is the blending of equal (hereditary) parts of the male and female nuclei (Haeckel).

In certain organisms above the grade where sexual reproduction has been evolved and established, a parthenogenesis is found, not as a modification of the earlier asexual reproduction in evolution progress toward the advanced or sexual form, but where the dual sexual function is in vogue; and because of environmental conditions the male part of the function is dropped or dispensed with, either having become unnecessary in those particular instances, or the purely essential part of the function being otherwise affected. This only is parthenogenesis pure and simple. Most forms of hermaphroditism are but modifications of both functions, more or less in combination.

This pure parthenogenesis obtains in some classes of organisms (not merely individuals) in the histona, some platodes and higher articulates, the organisms so produced being, to a large degree, normal.

Still, the parthenogenetic has nowhere been established as the permanent form of reproduction; in a sense, or practically, it runs out. There is some inherent defect and impotency—an illustration of which we have in the hybrid, the mule, although not an identical case.

In this instance of reproduction the male qualities of the horse are substituted by those of the ass, but these not being the equivalent, in all particulars, of those of the horse, reproduction—the function tampered with—stops with the mule. For the product of the mule the imperfect substitute—function of the ass is all sufficient. But for the preservation and continuance of the race it fails, it is incompetent; the mule is unfertile, and the ass and horse are the parents in every instance of reproduction.

So that the male function in reproduction is first and foremost for the impartation of the male properties in interest of race perpetuation. The imperfect male characters of the ass are fully competent in reproduction of a mule, as perfect an animal, as such, as either parent, and superior to either in some respects, but incompetent in the function of reproduction.

In parthenogenesis the male characters are dispensed with¹, reproduction being achieved nevertheless, in those low grades of life, offering a problem in reproduction for solution.

In this primitive parthenogenesis the male qualities are not supplied by environmental conditions, so that the chief part of the male function—that in interest of race perpetuation—is absent, and not otherwise supplied. The reproductive functions being incomplete the incompetency must be in that part of the function essential to race preservation—the male characters giving this. This is already made evident in the fact that parthenogenesis is not an established

1 The male character is not really dispensed with. It is contained within the female organism and egg cells in a latent state, and becomes active only at the critical moment.—Ed.

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method of reproduction, the classes where it obtains not persisting in evolution progress.

Whatever explanation may be found of reproduction where the male characters are not furnished—that is, in the “normal” parthenogenesis—the mere impartation of male properties does not comprise the whole of the male function. As is well known, parthenogenesis has been recently illustrated and also attained in experiments of Professors Loeb and Mathews in the Chicago University. These experimental results evidence that the male function in reproduction is twofold: the conferring of the male characters in interest of race continuance in reproduction, and also a *catalysis* to the female function in development.²

Professor Loeb dispensed with the first and chief part of the male function and by artificial supply in a chemical solution of inorganic salts a chemical catalysis furnished the needed stimulus to the female part of the reproductive function, and the starfish eggs came to more or less mature development.³

In this, which is a true parthenogenesis, the property of the function essential to race preservation is lost, that is, in so far as the equivalent, in these low organisms, of the conferring of the male characters in each instance of reproduction is concerned. Whether this is equivalent to a total loss of the function of reproduction depends upon the character and potency of the female function in the specific individual evolution. That is to say, it depends upon whether the star-fish parthenogenetically evolved are themselves competent to reproduction, and to what extent.

It would seem that race perpetuation is *not* provided for in induced parthenogenesis; is it made possible in the female function alone⁴, that is, with a catalysis furnished, and if so, how far?⁵

In the artificially attained parthenogenesis the simple and, it may be designated, incidental stimulus to the female function is that which the use of the chemical solution secures. But the efficiency of the catalysis depends upon the

2 Catalysis is caused, not primarily by the male character as the spermatozoon, nor by the female function, but by a third factor which remains stable though it causes the union of the seed with the egg, the breaking down of each as such and the building up or changing according to the third or stable factor which is present.—Ed.

3 The salts furnished the physical positive element to contact the eggs, but the catalysis was caused by the presence of the third factor, which is not physical. The third factor and cause of catalysis is present in the initial stage in reproduction in all forms of life. The third factor is different in principle and kind in the human.—Ed.

4 Parthenogenesis is possible in the female animal alone. In the human, physical parthenogenesis is remotely possible in the male as well as the female body, as will be seen later on.—Ed.

5 The male character cannot be dispensed with in physical preservation of the race. It might be possible by chemical action to induce catalysis in the human female, but the issue would not be human because the factor and cause of catalysis in the ordinary sexual reproduction would be absent, and the bond between the ovum and the chemical element would be caused by the presence of a factor or species below the human.—Ed.

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nature and the potency of the female function when deprived of the greatest part of the normally supplied male function. Or, in other words, is the property of reproduction still intact in the star-fish parthenogenetically attained? And, if so, for how long may it be retained?

A study of the female function of reproduction in its entirety will indicate the relevancy and importance of these questions; and as the proposition before us is as to human parthenogenesis we advance to the consideration of the human reproductive function, and especially the female part of it.

The product of normal sexual human reproduction is offspring bearing the characters of both parents. Both kinds of characters are always found in the offspring and these give balance to the organism so produced. If we had an offspring with only the female characters of heredity—supposing it possible—the organism might be complete, as such, yet deficient in some of the properties of the normal organism. Evidence of the reasonableness of the supposition is seen in the parthenogenetic star-fish. But, as we have seen, there would be deficiency and in competency in some particulars and properties, and in view of the mule's incompetency in procreation it is suggested that the deficiency would be in the reproductive, which is the function tampered with in any parthenogenesis. So that in addition to the balance of character, the male function in impartation of male characteristics includes also this property of virility, which in a parthenogenesis would be absent, save and inasmuch as the female reproductive function may possess it in potentiality by heredity (a matter to be reached farther on).

The two fundamental functions of life—nutrition and reproduction—are the basic functions in all grades of organisms from the lowest up, with modifications as evolution proceeds and rises. Properties in possibilities and also in limitations obtaining in the advanced organisms are not operative in the lower and primitive species of life, and the converse is true, within certain bounds.

The function of reproduction of the hybrid in the higher grade, the mule, being meddled with, reproduction promptly stops, but in hybridism low down in the scale of life this limitation is not in force, at least not to the same degree, hybrids being markedly fertile—to be borne in mind in estimating the character and power of the female function in human reproduction.

Professor Ernst Haeckel, a high authority in this branch of science, says: "The ovary of a mature maid contains about 70,000 ova, each one of which might be developed into a human being under favorable circumstances." The favorable circumstances are said to be "meeting with a male spermium after liberation of one of these ova from the ovary."

Of course much has to be taken into consideration in interpretation of the statements of Professor Haeckel above.

From the fact of parthenogenesis in star-fish, even, it is fair to assume that the female ovum, aside from the addition of male characters, is competent to development into a human being, though the properties in interest of race per-

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petuation may be deficient in the specific instance. This is evident as a fact in the star-fish parthenogenesis, why it would not be in its equivalent in the human must be shown.

Now—dispensing with the need of the male characters in interest of race preservation, as in induced parthenogenesis—all that would be necessary to development of the female ovum into a human being is the incidental catalysis to the female function represented and supplied by the chemical catalysis in the star-fish parthenogene.⁶ A more detailed consideration of the human female function in reproduction may support the position here taken.

This mature ovum of a mature maid, which is capable of development into a human being, has all the characters of the maiden organism. In these are comprised the hereditary characters of both her parents, with those of their ancestors in past evolution grades.⁷ There is no lack of male qualities in the hereditary endowment of the maiden herself, or in that which she has to bequeath, and in the event of a parthenogenesis, dispensing with the usual addition of the paternal properties in this instance, it does not seem that there would be a serious break in the male continuity of heredity threatening the potency of the immediate reproductive phenomenon.

The maiden ovarium like a hive of bees (70,000 strong) has proceeded so far as to produce and mature these ova in such abundance. Besides, the maiden function provides a suitable lining membrane or interior covering specially for

6 (a). The human is the exception “in the mammalian group” because it possesses a factor quite removed from the others. In others of the mammalian group, desire is the principle which controls and specifies the factor, which determines the kind. In the human, the principle of mind is the additional factor by which it is possible to change the order of reproduction. (b). There is no physical equivalent for the chemical catalysis in the star-fish parthenogenesis, at least not in the present sexual organism, but there is an equivalent catalysis which may result in what might be called a psychical parthenogenesis.—Ed.

7 This comes very near the truth. It is possible for the human organism to develop both seed and egg, though the ordinary human can develop and elaborate but one of the two. Each organism has both functions; one is operative and dominant, the other is suppressed or potential. This is true even anatomically. It is possible to develop a race of human beings with both functions active. Not unfrequently beings are born with both male and female organs, who are known as hermaphrodites. These are unfortunates, because they are neither suited to the physical requirements of either sex, nor have they mental faculties and powers which should accompany the normal and fully developed hermaphrodite with both functions active. In the human male and female bodies there are two germs, positive and negative. The positive male germ does not leave either organism during life. It is the female negative germ of each which contacts the other. In the male body the negative germ develops and acts in the capacity of the spermatozoon; in the female body the negative germ develops and acts as the ovum.

For the birth of a normal human being, besides the male and female germs, a third presence is necessary. This third presence is an invisible germ which is not furnished by either of the sexes. This third germ is furnished by the future human being, which is to incarnate. This third invisible germ binds the seed and the egg and is the cause of catalysis.—Ed.

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the reception of the ovum—a complex venous supply being prearranged—and for its nourishment and development. Moreover, some of these ova are liberated, expelled from the ovary and passed down tubes provided for that purpose, and on into the womb before settling as the “germinal spot;” and all this without aid of the male function in any particular, unless demurrer be raised to the last point—the passage of the ovum alone into the uterus.

Extra-uterine and tubal pregnancies evidence that the spermatozoon itself travels up to the fallopian tube and there meets the ovum. Research in the matter seems to indicate this may be the usual method; but further evidence is needed to prove that in no instance the ovum of itself passes into the uterus and in proximity to the site where the germinal spot is formed before meeting the spermium. But at the most—this being proven—it only extends and increases the power and importance of the incident catalysis of the male function, giving impetus to the ovum to emerge from the tube and enter the uterus and settle upon the prepared site; the demurrer interposes no physical or chemical impossibility to the female phenomenon assumed.

The second stage of the reproductive function once entered upon—the maiden ovum having clung to the uterine wall—is as purely and wholly of the female as was the first part, not ignoring the point in the demurrer recognized above.

The reproductive function is accomplished in two stages. The part already delineated, the first stage, is, as we have seen, wholly of the female, save in the confer of the male characters in interest of race preservation, with the incidental catalysis to the female function. Having for a specific instance dispensed with the need of the male qualities, as warranted by the starfish parthenogenesis, all that is needed in inauguration of the second stage of this is the impetus to the ovum to cling to the germinal site, or at most to emerge from the lower end of the fallopian tube prior to this. This accomplished, by whatever means, the whole of the female reproductive energies are at once turned to and expended upon the remaining stage of the developmental function. No liberation of ova or preparation of uterine placental site is needed or effected—quiescence here prevails, the potencies reproductive being in demand elsewhere.

Before coming to the final point in the argument the query as to the possibility of parthenogenesis in higher organisms—mammals—those between the very low-grade organisms where it obtains normally and in star-fish, and the highest of all mammals, the human, a few words only will indicate the answer to be negative. The farther the advance from the asexual method of reproduction the more pronounced is the sexual both in organs and function. Reproduction becomes more and more complex, the joint cooperation of organs and the dualism of the function making the dispensing with the full complement of the male function more difficult, as well as the supply of the catalysis, as in the simpler grades of life, the equivalent for the male catalysis in the function being simple and more feasible of counterfeiting or substitution. In the higher grades it is more complex

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and more difficult and it would seem scientifically impossible. So that below man to the lowest mammalian organism an efficient catalysis for even this incidental part of the male function would seem to be impossible.

This leaves us the final question: May the human be the exception to this principle in the mammalian group of sexual reproductive organisms? And with this the query: What would be in the human reproductive phenomenon an equivalent for the chemical catalysis in the star-fish parthenogenesis?⁸

The human being is the highest organic evolution; the functions here have attained their most perfect development. And while it is readily apparent that no environmental conditions could arise to make unnecessary the male part of the reproductive function—as in the very low grades of life—it is equally improbable, if not impossible, that any external artificial achievement of catalysis to the female function offers promise of success. If such a catalysis is possible it must be an autocatalysis—a catalysis achieved by the organism itself, by cooperative action of some other of its own function or functions. Failing in this, a human

8 In the present organic development of the race, neither sex is competent to develop both seed and ovum in the same organism so as to result in the birth of a normal human being, because that side of the nature which is latent has no means of developing and elaborating the seed or egg which is latent: therefore a physical parthenogenetic or virgin birth is not possible under present conditions. It is possible, however, that a powerful psychological influence may bring about a catalysis, but such catalysis would not result in physical birth.

The adult human organism matures its negative germ as seed or egg, according as it is male or female. These seeds or eggs are evolved and depend from the nervous system like fruit from a tree. When ripe they are precipitated through the ordinary channels into the world, to be lost like seeds in barren soil or to result in human birth. This is the ordinary course. It may be changed through a powerful psychological influence. When the human germ is matured it is possible for the mind to so act on it as to produce a complete catalysis, but this auto-catalysis, instead of changing it from one physical condition to another, changes it from the physical into the psychic state. That is to say, the physical germ is raised to a higher power, as water may be converted into steam; like in a mathematical progression, it is raised to the second power. It is then a psychic ovum in the psychic nature of the human. It has lost none of its reproductive characteristics. In this psychic state the psychic ovum is capable of being matured and of beginning a process similar to impregnation and foetal development. The development here, however, is of a psychological nature, and instead of the womb being used for the entrance, impregnation and development of this psychic ovum, another part of the body performs that function. This part is the head. The development of the ordinary physical germ is had through the organs of reproduction, but when it is changed from the physical to the psychic state it is no longer connected with these organs. The psychical ovum passes upwards from the lower part of the spine into the spinal cord, and thence into the interior of the brain where it is met by the positive male germ heretofore mentioned. Then, by an intense aspiration and exaltation of mind they are stimulated and they are fructified by an influx from above, from one's divine Self. Then begins a psychological process and development resulting in the birth of a distinct and complete intelligent being apart from the body. This being is not physical. It is psychical, luminous.—Ed.

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parthenogenesis must be considered as impossible—physically and chemically impossible.

In the human organism the psychological are the highest functions. In progressive evolution of living things from the first unicellular germ up to man the physical functions have advanced in multiplicity and multiplexity, and the progress has been steadily from the simple to the complex, from the physical and material to the potential and the psychical. Each step and grade in evolution in the individual organism, and their differentiation into species and genus, has been more and more to the *functional* and the *psychic*. At the bottom of organic life, simple tissue formation and tissue motions effect the simple functions of nutrition and cell division—there is no “psychic” life of micro-organisms properly considered—i.e., psychic of the higher kind.

Advancing, tissues are grouped and form organs, and from “organless organisms” the scale rises to the development of organisms having congeries of organs, in which activities of tissues, and functions of organs, and groups of organic functions take on progressive multiplicity and complexity.

It is probable that life has existed on the earth somewhere from twenty to a hundred millions of years, during which these differentiations in living organisms have been achieving, and progressively in the directions indicated above—in the evolution or achievement of multiplexity of functions. So that in the higher organisms there are functions which are the product or outcome of *functions*. The ostensible of the earliest function—nutrition—is the immediate result of simple cell or tissue movements. Organic life has, necessarily, a physical basis, and the physical activities *immediately* effect the basic functions. In the multiplicity in congeries of organic functions of the higher organisms the more complex (which are the later evolved) functions are farther removed from the basic which are achieved immediately by tissue and organ movements—some of the higher functions being less immediately dependent upon the material activities than the earlier and more basic functions. These congeries of functions in their multiplexity, and in virtue of their complexity, effect the higher functions—the psychical and intellectual. That is to say, the mind functions are the highest of organic functions; they are effected and only possible of achievement as the outcome of the cycling groups of functions bringing into entity the multiplexity and complexly achieved human egoism.

It is inconceivable, therefore, that there could be psychological phenomena, properly so termed, in the organisms very low down, their functions being too simple and few to make it possible. Psychological phenomena have basis in individual consciousness and will, and functions competent to so complex a phenomenon are necessarily of a multiplex and complexly evolved character and quality, and the “psychic life of microorganisms” and the “psychology of lower organisms,” are misleading, unless these metaphysical distinctions which obtain are marked.

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In the human organism, as nowhere below, in so far as facts evidence, the physical functions and material activities are influenced by the psychism and will of the ego. As already seen, in man function predominates—potency over materiality—and in the highest organisms where function reigns psychism comes into entity and the intellectual becomes the distinguishing characteristic. The potency of life is the active agency in all organic phenomena, and, in the human organism, the psychic or mind potentiality is the predominant force—of course, within certain limitations. Consequently, the physical functions which are the product of the material activities are powerfully influenced by the mental emotions. A certain man can stop his own cardiac pulsations, and after an incredibly long time permit their resumption. A sudden fright has turned the hair grey in a night, and thus the function and process of years' continuance have been achieved in an hour, psychologically. There are the “psychoses,” diseases of a pronounced psychological etiology and character, indicating the large subserviency of the physical to the mental. Especially is the reproductive function closely related to and influenced by the psychological. Woman's “consent” is very largely and in many the sole condition of response to the male in the initiatory of the function under consideration, and the psychological is very markedly influential in the after stages of the embryological development, with questions in sex determination at present rife in scientific circles.

Bringing the argument to a focus a congeries of points are presented for consideration.

The reproductive phenomenon in its entire achievement is almost wholly of the female. The male function in the whole process of reproduction in regard to its chief features (nine-tenths of its potentiality) may be dispensed with, as seen and illustrated in the recently achieved parthenogenesis in star-fish, leaving but the incidental catalysis to the female function as necessary to the reproduction. A catalysis the product of external environment—as seen in the so termed normal parthenogenesis in the very low forms of life—is dismissed as practically impossible in all mammalian groups, and the only remaining question is as to the possibility of an auto-catalysis in the human species.

Given all the facts and provisions for reproduction as elaborated in the preceding pages; dispensing with nine-tenths of the male function, *the impartation of male characters in interest of race perpetuation*, as we may in a solitary and specific instance—*a la* star-fish parthenogenesis; recognizing the potency of the psychological as the highest potentiality in the human organism, is it not more than possible that at the opportune moment, when the necessary and normal conditions already defined were attained, when the ripe ovum, competent to development into a human being, and in the comparative near proximity to the site prepared for its fixation, that fixation as the “germinal spot” being the only necessary condition for the entering upon the second stage of the female reproductive developmental process; is it not more than possible that a powerful psychological

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influence (like the emotion of joy or grief, which suddenly blinds or kills) should be a competent catalysis? Why would it not be possible? What would be physically or chemically needed that is not here provided for and competent.

Certainly it could only be with any probability in a rare instance, when all the fortuitous environmental conditions were both ripe and rife—just as the “spontaneous” evolution of life is believed to have been possible as a focusing of the differentiated cosmic potencies when all the external conditions of temperature, liquid water on our planet, with its central position cosmically, were attained, and issued in a germ of life, a focusing of cosmic potentiality into a microcosm. These facts disarm the objection that if a human parthenogenesis were possible, and once a fact, there would surely or likely be other instances of the phenomenon. The rarity of the conjugation of the necessary and favorable conditions externally would be matched by the necessary specificity of qualifications’ required in the person herself, the possible subject of this rare and unique phenomenon. Such a maiden would need to be of a high psychological development; of a markedly reflective and introspective habit and power of mind; of a vivid and realistic imagination; withal keenly susceptible to auto-suggestion and quick in response to such psychological influences, and intensive in their use and exercise subjectively. Given these factors and conditions—and all are common characteristics, though not commonly combined in one personality, it may be—given, therefore, these factors and environmental conditions calling out the exercise of the psychological function which is to be the potency in the catalysis parthenogenetic, and the facts and the exactions of science interpose no physical or chemical barriers proving such a psycho-parthenogenesis to be impossible, and a human virgin birth, therefore, is a scientific possibility.⁹

9 A virgin birth is possible, but not a birth through the ordinary human sex function, as briefly outlined in the last footnote. In order, however, for human parthenogenesis or virgin birth to be possible the human must become virgin; that is to say, clean, pure, chaste—not only in body, but in thought. This can only be done through a long course of intelligent work in the healthy control of the body with its physical appetites, passions and desires, and in the development, discipline and cultivation of the mind toward the highest ideals and aspirations. After one has trained a healthy body and healthy mind, he is said to be virgin, in a state of purity. Then it is possible for an auto-catalysis to take place within that body as before shown. This would be an immaculate conception, or the germ of life fructified without physical contact. It is quite possible that such might have been the birth of Jesus. If this is allowed we may understand why the birth and life of Jesus is not recorded in history, because a being so immaculately conceived and born would not be a physical but a psycho-spiritual being.

A body which is born of woman by the ordinary sex function and process must die, unless another law be discovered by which it may be saved from death. A being who is conceived and born through a process higher than the ordinary is not subject to the laws which govern the physical. One who is so born saves the personality through whom he is born from death which the personality must suffer if left alone. Only by such immaculate conception and virgin birth may man be saved from death and become actually and literally immortal.—Ed.