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DO MATERNAL IMPRESSIONS AFFECT THE FŒTUS IN UTERO?

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We live at a period that will be memorable in the world's history. It is an age of deep and profound thought. An age of unwearied research and investigation; and an age of brilliant discoveries.

All science is achieving grand triumphs, and results that would have confounded and amazed our ancestry of fifty years ago.

Medical science is moving rapidly and grandly forward in this upward and onward march of progress. It is rapidly leaving behind it the dictum of mere opinions and theories which for so many centuries obstructed its progress and misled the minds and wasted the energies of medical men; for, until comparatively a short time ago, theories and speculative opinions were accepted and acted upon by medical men as so many established facts.

It is no easy task to change or alter men's preconceived and long-cherished opinions, but opinions are not always facts, and an opinion unsupported by testimony is but an opinion still. That they are the forerunners of knowledge I admit. They lead the mind far out into the unbounded fields of speculation, seeking to find where truth is hid; but, it is left for experimentation and demonstration, aided by clinical research, reason and analogy to remove the rubbish from off these germs and to expose their hiding places.

Medical science—as all science—“*is the enemy of credulity.*” It challenges reason, invites investigation, stimulates inquiry and welcomes facts, to the end that human life may be prolonged and enriched by health and happiness. It seeks to ennoble, to elevate, and to refine the human race. It seeks to give proper food and shelter, education and raiment, and to inculcate a higher appreciation of health in the physical and intellectual man, and to erect beacons of warning along the dangerous shores of life.

The question which I propose to discuss in this

paper, so far as my investigation and research go, is based solely, and only, upon “opinion or belief,” with an occasional coincidence, unsupported by law or testimony.

“The occasional apparent relation of cause and effect being due in most instances to accidental coincidences, which would be far less frequent if the alleged facts could be obtained prior to instead of subsequent to the birth of the child.”

It is a question which embraces either a widespread error, fraught with human misery and human suffering, a traditional superstition, kept alive, to a great extent, by the medical profession, or it embraces a profound, occult and mysterious law of our being, of which we know nothing, save and except its sad consequences.

The question is: Can the theory of “maternal impressions,” as generally believed and contended for by the great mass of people, and accredited to a considerable extent by learned and scientific physicians, be true?

In other words, can mental impressions or emotions made upon the mind or brain of a pregnant woman, no matter how revolting or disgusting they may be, no matter how horrifying, even if of such a character as to arouse or elicit her feelings to their fullest extent or uttermost depths; or if they be of such a nature as to elicit the tenderest and most sympathetic emotions of her being; or if calculated to excite a keen sense of alarm or fear of impending danger. And if such impressions be made *suddenly, violently*, and should they prove to be lasting in their effects, can these impressions, photographing, as they may, the object or objects making them upon the brain, I say, can they, by or through any known agency, or by any known law, physiological, pathological, or psychological, or by any change which such impressions may make, by nervous shock, in the nutritive element of the blood of the woman, be reproduced in or on the foetus in utero, or manifest themselves by any abnormality of the foetus? This is the question. What shall the answer be?

I admit that in a large majority of instances of pregnancy, especially in women of nervous temperaments, the mental faculties act in an exaggerated sphere. They seem to lose for the time being that happy equilibrium and harmony of thought

and action which may have characterized their former lives, and which makes them the charming creatures we know them to be.

The brain does not always give forth a white light, but by perversion the thoughts are made prismatic. They indulge in, or give way to morbid sentiments, and irritable moods, which seem to transform or revolutionize their entire character, passions and prejudices, frequently giving cast to their thoughts and actions. Their desires colored by hopes, or weakened by fears, often warp the judgment and mislead the will. Not infrequently the mind is distorted or, as it were, deformed by morbid apprehensions, and consequently beset with gloomy clouds and dark forebodings of coming evil to themselves or their offspring.

This abnormal mental condition manifests itself in various and frequently in unexpected ways, and when taken in connection with the functional modifications of the nervous system incident to pregnancy, often gives rise to functional disorders of the senses—such as dimness of vision, painfully acute smell, hearing, etc.—as well as to a class of nervous diseases—such as neuralgias, hysteria, vertigo, syncope, and occasionally mania.

As a rule, emotional susceptibility is greatly increased, and a condition of mind, for the most part, exists which readily receives an impression, and as readily perverts, distorts or magnifies it.

These psychical changes and nervous manifestations incident to pregnancy, as every physician knows, are subject to innumerable individual variations.

Now, engraft upon such a mental condition, *if you will*, the belief or opinion that deformity or abnormality to her offspring may result from impressions made upon the mind of the pregnant woman by witnessing certain painful sights or hearing certain distressing sounds, or by permitting the mind to dwell upon certain subjects, especially if of a disagreeable or distressing character, and you most assuredly plant the seeds of gloom and despondency, and give rise to a fearful, yea and a tearful, looking forward to the day of her confinement which such a thought would necessarily and unavoidably produce upon the mind of a sensitive woman.

For permit me to say, that under the most favorable circumstances the pregnant woman looks forward with anxious solicitude to the day and hour when her maternal instincts and motherly yearnings will be gratified. When with feelings *stronger* by far than the *love of life* or the *fear of death* she can clasp in her fond embrace and press to her devoted heart *her own precious babe*, around whom she has already entwined the sweetest, the tenderest, and the most endearing ties and emotions that have ever found lodgment in the human heart.

If, perchance, however, it can be established,

either as a fact or as coming within the realms of probability, that such effects may result from such causes by some mysterious occult law of our being, though inexplicable in the present state of our knowledge, it behooves us as medical men, it behooves husbands, fathers and brothers, it behooves mothers, sisters and friends of the pregnant woman to caution, admonish and to guard her faithfully against every contingency which would even in the most remote degree be calculated to bring about or result in such a sad calamity, for they are the mothers of the race, and when pregnant *woman* appeals to the sympathies, and to the most sacred instincts of our humanity—care for her—be kind and gentle with her, for she is fulfilling a God appointed destiny.

To ask what are "maternal impressions," is but to ask what are intellectual acts, or what are thoughts. It is true, scientists and materialists claim to have answered this question, and perhaps have done so to their own satisfaction, but their answer is far from being received or accepted by the great mass of mankind, and by very many physicians.

That consciousness, or thought, which underlies and is the basis of all knowledge, arising independent of and uncontrolled by the will, is located in and arises from brain matter *no one will deny*. Of all material matter which goes to make up this grand universe, upon which we look with wonder and astonishment, and wherein we find displayed and made manifest to our senses on every hand an infinite wisdom and a creative power far beyond our finite comprehensions, I repeat, of all this wonderful mass of material matter, brain matter, and brain matter only, gives rise to thought. While it is true we can form no idea or conception of thought or intellectual acts aside or disconnected from brain matter and brain action, yet may we not unhesitatingly assert "that physiological research *has not* reduced the fact of intelligence to the phenomena of matter only." "Can thought be evolved by physical or chemical forces or the molecular play of brain matter only?" Physiology cannot or does not affirm the proposition, and yet those who claim to be advanced thinkers assert "that the physical forces of the brain are all sufficient for the production of thought."

One says, "All states of consciousness in us are immediately caused by molecular changes of brain matter." (Huxley.)

Another says, "That the brain secretes thought just as the liver secretes bile." (Cabiness.)

And another says, "That thought is a force evolved by brain action."

It is evident from the diversity of opinion here expressed as to *how* thought is evolved from brain matter, that he who endeavors to solve the mysterious connection between mind and matter finds himself walking in a field of obscurity, surrounded on every hand by dark clouds of uncertainty,

which admonish him that there is "a horizon beyond which human knowledge cannot go."

In the dark valley which intervenes between mind and matter, where thought, lost in a labyrinth of mysteries, struggles to comprehend the mode and manner of its own creation, we meet with some of the profoundest mysteries of our nature. Here, gentlemen, we fall in with sleep, dotage, somnambulism, and insanity, mental conditions upon which scarcely a ray of light has been thrown, and around which the veil of mystery hangs like a heavy drapery.

"In the misty clouds of doubt and speculation which forever brood over this dark gulf a thousand theories and a thousand errors lurk."

"In the language of Dr. Theophilus Parvin, we may weigh the brain, count its billions of cells, measure, if you please, the rate of its sensory impressions or motor impulses. You may go further, and localize its functions and analyze its matter, you may convert it into OHNC and Phos., if you wish, you may measure the undulations or vibrations of its molecules, and determine its mechanical or chemical forces and phenomena, and after all of our observations, calculations and analyses" what have we accomplished? We have but *determined the cerebral conditions incident to thought or its production, but not what constitutes thought itself.*

I am fully convinced that every intelligent, thinking physician, every physician who has directed his attention to what are called "mental influences in the causation, the aggravation, as well as in the cure of diseases" will agree with me in the opinion, yea in the *conviction*, that there is something in these bodies of ours superior to the body itself."

I do not believe, therefore, that the phenomena of mental action can be referred to or is dependent on physico-chemical laws, *per se*. "But we must accept the idea of a vital principle as being super-physical, and with that idea, its correlate, a living Creator such principle." "God pervading all, is in all things the mystery of all and each."

So then, in answer to the question, What are "maternal impressions," or what are thoughts considered in their entity? we must, in the language of our esteemed fellow member, Dr. J. S. Sanders, say "we don't know." But while we may not be able to materialize thought, or unravel the mystery of its production, we do know, however, that the brain is so constituted that it can, and does, receive impressions made upon it by external objects though the medium of the senses; or they may originate in the domain of thought itself (as in dreams), through the inherent powers of the imagination, "which worketh while the judgment is at rest and the will is in captivity," and in either event these impressions may become *fixed, permanent, and living images*, ever ready to be called up and brought vividly before the mirror

of the mind, never to be erased so long as the mental faculties retain their normal powers.

Through the medium of language these images or impressions may be conveyed from brain to brain, from mind to mind, *only*, for physiology teaches us that the nervous system—which includes brain and nerves—is anatomically and physiologically separate and distinct from all other systems and organs of the body; that its physiological properties are *inherent*, and that it gives to no tissue or organ its special irritability or power of *performing its particular functions, i. e.*, brain matter evolves thought and receives impressions, and nerves transmit them. The power of transmitting thoughts or mental impressions is not and cannot be delegated to any other organ or tissue of the body.

Modern physiology, founded to a great extent upon experiments made upon living animals, teaches us that the intellectual brain; the home of intelligence, the *canvas* upon which these wonderful "maternal impressions" are painted, has far less influence over the functions of the body than at one time was supposed. For instance, it has been demonstrated that, after division of the *dorsal spinal cord*, acts proper to copulation, and those of labor and birth, take place in a normal way, and that the processes of ovulation—of the development of the pregnant uterus—(which necessarily involves the development and growth of the foetus), and the lacteal glands, the development of the impulses which are associated with reproduction, suffer no visible impairment from this operation.

I believe that it is a conceded fact that the umbilical cord, which varies in length from 4 to 60 inches, has no nerves; that is, there are no nerves passing from the uterus of the mother along the cord to the embryo, by which "maternal impressions" could be conveyed to the developing embryo.

Again, we all know that the foetus is surrounded by, and floats in, the amniotic fluid, and that this fluid is developed *very early* in foetal life; that it reaches its maximum quantity about the middle of gestation, and then lessening to the end of pregnancy; so that these "maternal impressions" could scarcely reach the foetal body by or through the medium of its contact with the interior wall of the uterine organs. And since we have shown that the nervous system *never* delegates its peculiar functions to any other organ or tissue of the body; and since it has been determined, and I presume it is conceded by every one, that nerve tissue *only* conveys mental impressions, and as there is no nervous connection whatever, direct or indirect, existing between the organism of the mother and the foetus *in utero*, I again ask how, and by, and through what medium these intellectual impressions are transmitted, or conveyed from the brain of the mother to the foetus *in utero*?

To surmount these barriers to the acceptance of this theory we are told that these impressions may be conveyed in early embryotic life, before the allantois and other membranes form, the placenta and umbilical cord. Before proceeding to meet this suggestion—for it is only a suggestion—I will say that, in a vast majority of instances, it is alleged that these “maternal impressions” operate or exert their deleterious influence upon the foetus at a later period of gestation; that is, at some period from the third or fourth month of gestation till near the end of pregnancy. As a rule, but little notice is taken of these “maternal impressions,” and but little importance attached to them, during the first months of gestation.

The great Creator of all things has ordained from the foundation of the world that man, with all of his capabilities and yet unknown possibilities, should be born of woman. She is the matrix of mankind—the mother and perpetuator of the races; she carries in those wonderful little ovarian bodies of hers the seeds of the human family.

In all the higher order of animals or beings, two separate individual beings are necessary to accomplish the process of germination—one the male, endowed with the fecundating power or nature, and the other the female, endowed with the germinating power or nature. “Male and female created he them, unto the end that they might increase, and multiply, and fill the earth with intelligent beings, wonderfully endowed with life faculties.”

In the germinal spot or vesicle of the fecundated ovule or egg of the human female, a microscopic object, $\frac{1}{1000}$ of an inch in diameter, is comprised the very commencement of human life. And in the ovum, which is only $\frac{1}{20}$ of an inch in diameter—strange, wonderful and mysterious as it may seem and is—in this wonderful little object there dwell “*physical potentialities, species, race, family and individuality*,” yea, and more, for here we find implanted that wonderfully mysterious and incomprehensible law of *heredity*—a law to the operation of which we owe our being; a law transmitting the physical, intellectual and moral qualities and peculiarities not only of parent and family, but of race and species, from parent to child; a law far-reaching and widespread in its nature and in its operations; “a law in which these distinctive qualities and peculiarities of race, or family, or both, may slumber through one or more generations, to reappear in subsequent ones.” In the operation of this law, we frequently find “disease transmitted from one parent or the other to the offspring, and the disease may show or manifest itself in the child, before it does in the parent transmitting it. Or, again, the malady may date back to a grandparent, the father or mother transmitting to their children a disease of which they (the parents) presented not the slightest manifestations perhaps during a long life.”

How true are the words of Edgar Fawcett:

“Who sees how vice her venom wreaks
On the frail babe before it speaks;
And how heredity enslaves
With ghostly hands that reach from graves.”

When the vital cells or spermatozoa of the male reach the ovule of the female, many of them collect around it, floating in a medium seemingly provided for the purpose. Several of them may, and frequently do, penetrate the zona-pelucida, its outer membrane, but it is left for one, and one only, to accomplish its fertilization.

When this vitalizing cell enters the germinal vesicle of the ovule, in obedience to an inherent reproductive law which pertains to all germ life, it divides itself into two complete and perfect cells, each retaining its distinctive characteristic features. One, the protoplasmic cell formed of a part of the head of the spermatozoon, impelled by an inherent sexual power, goes direct to the protoplasmic cell or germinal spot of the ovule, and these two protoplasmic cells fuse into one, and form the segmentation nucleus of the fertilized egg.

Again, the vital cell formed by the tail of the spermatozoon unites with the protoplasm furnished by the ovule, forming a second joint or combined cell. These two, in connection with a nucleus or cell resulting from the fusion of the remainder of the head of the spermatozoon with the residue of the germinal vesicle of the ovule, forming, as you see, three classes of cells or spheres, called, as you remember, epiblast, hypoblast, and mesoblast. These, in connection with a group of cells which result from the division of the ovum, called “blastomeres,” constitute the several groups of cells developed in the ovum—each cell divides, and each of these again divides, and so on until groups of each are developed.

From these several groups of vital cells as I have endeavored to describe them, formed by fusion of the male and female protoplasmic material, *the foetus, with all of its organs and tissues, is developed.* And this is accomplished by the same process, and in the same manner, that the organs and tissues of the adult are regenerated and maintained—that is, by cell proliferation and modification.

The youngest human ovum of which we have any record, that has ever been seen, was estimated to be twelve or thirteen days old, and it is thought that it requires about that length of time for it to reach the uterine cavity after leaving the ovarian nidus. During the transit of the ovum through the Fallopian tube, and until attached to, or overlapped by, the mucous lining membrane or decidua of the uterus, nature provides it with its own nutrient material. Most assuredly, it cannot be influenced or impressed by “maternal impressions” at this stage or period of its development, since it has no nervous connection with the uterus,

nor does it draw its nourishment from the nutrient element of the mother's blood. And further, at the end of the first month of gestation, the embryo is but a pulpy mass, without foetal form, and only $1\frac{1}{8}$ of an inch in length. The amniotic fluid, however, has been developed, and the embryo can be seen floating therein even before this period.

The process of segmentation, or binary division, is usually completed by the time the ovum reaches the uterine cavity, by which time a heterogeneous mass—not of cells, but of groups of cells, is formed; each group being endowed with an inherent capacity to form by multiplication and coalition certain organs and tissues of the foetal organism—that and no other. They are the architects and builders of the new being, acting wholly independent of nerve influence from any source whatsoever.

To demonstrate more fully and forcibly this inherent cell law, I here show you the picture of little Ada Hurst, aged two and a half years, from whom I assisted Dr. I. F. Hooks, of Paris, one of our respected and honored members, in removing a dermoid tumor weighing $7\frac{1}{2}$ lbs. One of the ovaries of this child, from some unknown reason, caught up the process of cell multiplication or proliferation, and set to work to make a foetus of its own; the effort resulting in a confused and conglomerate mass of foetal tissue, including hair, bones, etc.

By the operation of this law there is implanted in the ovum everything necessary for the development and growth of the foetal organism, except, perhaps, the nutrient material out of which the process is to be accomplished. The Deity, in his infinite wisdom, has seen fit to isolate these new beings, and place them out of the reach of influences calculated to mar their being or prove hurtful to their development and growth.

To sustain the theory of "maternal impressions" we are further told, that these severe mental emotions so impress, alter, and change the nutritive element of the blood of the mother, that it perverts and vitiates the nutritive process of the foetus; that the foetus, being in the formative stage, is more readily affected by a vitiated or hurtful element of nutrition than the adult.

Upon the point of foetal nutrition I will say, that it has been recently reasserted that the foetus is nourished altogether by swallowing, or absorbing, through the skin, the amniotic fluid, and that the only function of the placenta is to act the part of a lung; that is, to give off the dioxide of carbon from the foetus and to receive oxygen from the arterial blood of the mother, in the same way and manner that the fimbriated extremities of the gills of the fish receive it from the water which it breathes.

If this theory prove to be true, then the foetus supplies its own nutrient material, since the amniotic membrane is strictly a foetal membrane, formed within the ovum in very early embryonic

existence, whose physiological function is to furnish the liquor amnii. This fluid being a secretion furnished by the amniotic membrane, it is more than improbable that maternal impressions could pass through the process of secretion and reach the foetus through such a circuitous route. If, however, it receives its nourishment from the arterial blood of the mother—which it unquestionably does—and these maternal impressions produce a systemic or nervous shock which so alters and changes the nutritive element of the maternal blood as to render it unfit for foetal nutrition, *why not for maternal nutrition as well?* since, for every ounce of this material which is appropriated to the development of the foetal organism, from 2 to 3 lbs. of the same material goes to the regeneration or maintenance of the organism of the mother.

The pregnant woman who maintains her normal physical condition during pregnancy appropriates to the maintenance of her own organism not less than 30 lbs. of nutrient material per month; aggregating 270 lbs. during the period of gestation, and if the child at birth weighs 9 lbs., which is something over an average, the mother will have used *thirty pounds* of the nutrient material, to the foetus' *one*. Further, if the process of nutrition can be deranged, perverted or arrested by impressions made upon the mind, it occurs to me that it would occur more frequently in the mother than in the foetus, since she is in possession of a *matured* nervous system, which it is claimed regulates the functions of secretion, nutrition, calorification, and all the processes of organic life.

It is not claimed, however, that the entire organism of the foetus suffers from this altered condition of the circulating medium of the mother. If such was the case, and "maternal impressions" proved detrimental to the development and well-being of the foetus, we might very rationally conclude that such ill effects were the result of a vitiated or depreciated condition of the nutritive element of the blood. On the contrary, however, their evil effects are only seen in some certain *locality, organ, or tissue*, making manifest such alteration or perversion of the normal process of nutrition by reproducing, on the foetus, a duplicate of the *picture* impressed, or photographed, on the mind of the mother. In other words, these cruel "maternal impressions," as though capable of exercising a degree of intellectual control over the foetal nutritive process, *say to it*, "See that thou makest it" (the picture); it may be a bloody hand, a lacerated and bleeding limb or a deformity of some kind, or a snake, or a turtle, or a rat or mouse, or some other scary animal or ugly sight—it *matters not what*, just so it makes a "maternal impression"—"see that thou makest it according to the pattern showed thee in the mount."

What a wonderful perversion of nature's laws. As an argument in favor of this theory, we are further told that the foetus is being rapidly developed, that it is in the formative stage, and consequently, any slight alteration in the nutritive process would be followed by more serious results in the foetus than in the adult.

In answer to this I would say, that it is a well-known fact that, in a large majority of cases of pregnancy, nature provides for the development and growth of the foetus, by inaugurating in the system of the woman an exaggerated or hypernutritive process similar to that which takes place in the foetus. This is made apparent by an increase of weight, by an increase of adipose tissue, and by a general improvement in the physical condition and appearance of the woman. This increase of tissue being as newly formed, and as recently developed, as the organism of the foetus, I can see no reason, nor do I find any medium through which nature could make such cruel and unfair discrimination against the innocent unborn, upon this ground. It seems strange to me that whatever of evil effects or disastrous consequences flow from these "maternal impressions," or mental shocks, that they should be visited on and manifest themselves only upon the foetus *in utero*.

Again, if the foetus *in utero* is to be regarded during its development; that is, during its intra-uterine life, as a part of or as an addendum to the physical organism of the woman, subject to all the mutations for good or ill that may take place in her organism, governed and controlled by the same physiological laws that sustain vitality and govern the animal functions, including the nutritive process in the body of the mother; I say, in that event, "maternal impressions" or intellectual acts are most assuredly *inoperative*, and cannot be regarded as instrumental in the production of changes in the developing foetus to the extent of producing abnormality, for it is well known, nor is it claimed by the most ardent advocates of this theory, "that the Ethiopian can change his skin or the leopard his spots." "Or which of you by taking *thought* can add one cubit to his stature."

If the intellectual impressions can "mark" or deform the foetus, then they can "mark" or deform the body of the mother as well. As before intimated, I regard it as an unsettled question, as to what extent the process of nutrition is influenced or controlled by nervous influence, or nerve force. In muscular atrophy, for instance, the shrinking and wasting of the muscular tissue is said to be due to inaction; or, in other words, to the loss of motor power, and not to loss of nerve force by paralysis.

I am convinced that the nutritive process going on in the foetal organism is in no wise influenced by its own nervous system. This, I think, is

clearly demonstrated by the perfect development of the acephalic monsters. Some of these are perfect specimens of physical development, *less the brain*. I have in my possession a *finely formed male child*, an anencephalic monster, which is destitute of brain and spinal cord. And yet, some of these have been known to live for from a few hours to six and seven days. Bayle reports one that was born with two teeth, which lived seven days. Ramsbotham reports seeing one of these anencephalic monsters alive thirty-six hours after birth. He states that it cried, sucked, and seemed to perform all the animal functions much more perfectly than would have been supposed. He also relates an instance of a woman having had six children and each alternate one being an anencephalic monster.

It would extend this paper to too great length, and unnecessarily consume the time, to even attempt to enumerate the different abnormalities which have been classified by writers upon this subject, to say nothing of those which have not, running as they do over an extensive field of observation, from the proverbial "strawberry mark" to the composite monstrosities.

In the classification of the hæmiterata, or anomalies of growth alone, we find fourteen varieties described; in the single monstrosities ten varieties; in the twin or composite monstrosities twelve varieties. Then again, each of these varieties are subdivided, extending the list to great length. In the field of malformations or deformities we find an extensive variety, such as bow-legs, knock-knee, bandy-legged, hump-shoulders, all the varieties of club-foot, club hands, supernumerary fingers and toes, cleft fingers and toes, webbed fingers, etc. These are generally hereditary.

"Thus in a family of twelve children two out of four boys had harelip and fissured palate, and one out of eight girls had hypertrophy of the right lower extremity with atrophy of the right great toe. The father had a supernumerary little finger on one hand."

Intra-uterine amputations are not infrequent. Skin diseases are more frequent, and are often likened to the skin of some animal seen by the mother. Congenital nævi are very frequent. This is the disease which makes the "marks" on the new-born babe, and which is contorted into the likeness or image of such a variety of objects by the imagination of old women and doctors, and attributed to "maternal impressions." When arterial and cutaneous they are of a bright florid color, and are made to represent some bloody scene, if, perchance, anything of the kind should have been seen by the mother during gestation. Where venous and cutaneous they are of a bluish or purplish color, and are then made to represent another series of objects.

This disease of the capillaries though generally congenital, may occur after birth. It may

be single or multiple, cutaneous or subcutaneous, arterial venous or mixed. If it was in the human family *only* that these abnormalities occurred we might be inclined to attach more importance to this prevalent idea, but they are of as frequent occurrence if indeed not more frequent in the lower order of animals, especially in the domestic animals, such as the horse, the cow, the dog, the hog, the cat, etc. When they occur in these animals they are the counterpart of what we see in the human subject. They are not infrequent in the feathered tribe, also.

It is true, the animals above enumerated are gifted with wonderful instincts, but it is hardly reasonable to suppose that they possess a sufficient degree of intellectuality to be influenced by such sights or objects as is claimed make these maternal impressions upon the mind of the pregnant woman.

In early embryotic life in case the amnion is not lifted from the newly forming skin of the embryo, in consequence of an insufficient secretion of amniotic fluid adhesions form between the body of the fœtus and amnion, and as the amniotic cavity becomes distended the adhesive material stretches and forms bands of greater or less length and thickness. "These adhesions frequently prevent the proper arching over and closure of the body cavities, producing such deformities as *eventration*, *anencephalus*, etc.

Moreover, a developing limb, as an arm or leg, or a hand or foot, may be caught between two of these bands, or may be encircled by one, and as it grows be so constricted as to produce an amputation. The amputated portion of the limb being in the embryotic stage of development is soon dissolved by the amniotic fluid—or it may be accomplished by the limb being encircled by the umbilical cord. Amputations in-utero occur in this way, and not as a result or consequence of "maternal impressions," as some believe.

In conclusion, I would say that various causes have been assigned for the production of these abnormalities. Some physiologists are inclined to the opinion that the germ is imperfectly formed prior to impregnation. Others that they may result from an undue admixture of protoplasmic material at the moment of fecundation. Other causes also, it is thought, may operate, such as the rapid and active growth which develops from a single cell—in the short space of nine months—one of the most intricate, complicated, complex and mysterious beings in all the animal creation. When we remember that the most important vital functions of this being are performed during its development by an organ itself *without* the foetal body, and subject to diseases and accidents, and when we consider that the fœtus is essentially a parasitic being, liable to become diseased and development arrested by some systemic disease of its host. And again, that these results may be

brought about by some taint or vice handed down from somewhere along its long line of ancestry, even from "Ghostly hands from graves." I repeat, when we take all these things into consideration—and many more which could be mentioned—and then remember that hundreds, if not thousands of children are born every hour, may we not rather be surprised at the comparatively few abnormalities we meet with. And may we not rationally conclude *that there are causes* enough operating to account for their occasional occurrence—which appear more rational and more in harmony with the laws of cause and effect—than to attribute them to the intellectual acts or mental impressions of the pregnant woman. For it is well known that these so-called "maternal impressions" exist to a greater or less extent in the minds of a large majority of pregnant women without producing any visible effects whatever upon the child.

CONSTITUTIONAL TREATMENT OF ACUTE CATARRH OF THE UPPER AIR PASSAGES.

*Read before the American Rhinological Association at Cincinnati,
September 13, 1888.*

BY J. G. CARPENTER, M.D.,
OF STANFORD, KY.

Acute catarrh or cold of the "upper air passages" might truly be called a "freshet" or "overflow" of the watery and other constituents of the blood, into the mucous and submucous connective tissue. To successfully treat this disease, there are three indications, viz.: first, to arrest it in the first stage, or prevent this overflow and injury to the normal tissue; second, should the disease have passed into the second stage, drain out and deplete the engorged and inflamed tissue and arrest inflammation; third, repair the damage to the affected tissue by the disease having passed into the third stage, and not allow it to end in chronic catarrh, but resolution.

Constitutional Treatment.—Bromide of potassium diminishes reflex irritability and cutaneous sensibility, and depresses the activity of the spinal cord and the medulla, and has its appropriate place in the first and second stages of acute catarrh. The iodide of potash acts specifically on the mucous lining of the eyes, nose, frontal and ethmoidal sinuses, mouth and salivary glands; 3 to 10 grs. taken at bedtime will often cut short a cold in the upper respiratory tract, and is indicated in the first and second stages. Combined with 20 or 30 grs. of the bromide its action is increased; in addition, there is the anodyne effect of the latter.

"Inhaled or taken by the stomach camphor exerts a decided influence on cold in the head." Employed at the beginning of an attack (it is useless after the first stage), camphor sometimes arrests a cold, and failing in this it abates its vio-