A

THESIS

ON

Organic Force.

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ORGANIC FORCE.

In preparing the following pages on organic force, I have been actuated by the humbling conviction that this force was one about which my knowledge was most deficient. Yet its great importance was obvious enough to have me perceive that some great influence it must necessarily exert on the treatment of disease. Without understanding this force all reasoning on any morbid process can not be but incorrect: and the physician can not expect any success in the healing art until he is perfectly acquainted with it; and capable of guiding and directing it, and keeping it from doing harm, just as the skilful engineer is capable of guiding and directing the irresistible locomotive, confining the elements of destruction within their limited and appropriate place.

Thus stimulated I determined to think for myself on the subject, and submit in this dissertation only such views, as appeared to me the most rational, and that in as few words as possible. However I have not thought of doing justice to the subject, for such would require a long time of careful observation, close attention, and circumspect deductions facilities which have not been my lot. All I venture to lay down are my own reflections on the subject; and if among them wrong inferences or illogical deductions shall be pointed out, then I hope to be excused for the remark of, "Errare est humanum."—

Organic force is the force determining growth and developement, it partains equally to the animal as to the vegetable kingdom, to the simple cell vegetations as to most complex of structures, man. In virtue of this force the acorn germinates and grows to be an oak, the germinal vesicle of the female becomes a living being.

When the origin of this force is traced, it will be

found to originate with the individual it is to bestow vitality upon; the very moment that fecundation is effected it is there also, the very moment that a seed is put under its essential conditions it grows and lives. As soon as yeast, sugar, oxygen, water and a certain temperature are brought together, immediate action ensues, there is vitality. That there is a certain peculiar vital principle implanted in the pimordial cell, which goes to build up structures, can never be anything towards the truth, nor can it be admitted that it is the peculiar vital principle stamped by the creator on the tissues of man, which selects only peculiar materials from the blood for its nourishment.

Such selection occurs in virtue of purely physical principles, or principles found elsewhere in nature. The blood rushes to the lungs and dilates the branches of the pulmonary artery of the newborn child, 1st because a vacuum is formed by the action of the inspiratory muscles stimulated by the carbonic acid in the blood, 2ndly because the blood corpuscles have an affinity for the oxigen of the atmosphere, which enters the lungs in virtue of gravity. Here many influences are bearing on a single result, the dilatation of the pulmonary artery. —

When a resolution takes place in inflamation, so is this not caused by the vital principle causing the distended vessels to contract, but because the case of the inflamation, the destroying influence which called for the greater afflux of blood as a necessary consequence, has been satisfied. Why did not the vessels in virtue of their contractility prevent the blood from entering to dilate them? because a vis a fronto, a destroying influence demanded it. —

It will be admitted that the son has as much organic force as the father and some times more. Whence did this force come? If it were a peculiar vital principle so should this now be divided between father and son, and

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all the world nowadays should have no more organic force than our father Adam had. That a force could get into existence out of nothing can no longer be admitted by common sense, no more than that matter could come from nothing. And I venture to conclude that organic force is but a change of other force and organization is but a change of matter in virtue of this force,- peculiar conditions. Vitality is this very change in accordance to the original laws (properties) to which matter was subjected. Man does not exist from causes within him, but wholly from causes operative from without. —

I define organic force to be, the various properties with which matter was originally endowed, in virtue of which, when the necessary conditions are furnished, which allow the properties (affinities) to act, a change of matter take place.

Further it will be safe to conclude that matter and the properties of matter constitute the whole universe, which when placed under essential conditions become the properties of force. Or in other words, the properties of matter when placed under essential conditions exert a force, and the satisfaction of this force or affinities is the change of matter. —

Pursuing nature's operations it will be found, that there can exist but 2 states of the property of matter or 2 states of affinity, or 2 states of forces in nature. The one state, or affinity is absence, total or partial of the other, and they exist only because there is a disturbance of equilibrium of property, and a force is exerted and matter is changed in order to restore this equilibrium.

Could anything more natural be imagined than where a person is warmed by a fire? and still organic force is the very same, a restoration of equilibrium, but it is called organic force to hide our ignorance, since its phenomena are not readily understood. —

An illustration of the above idea will be found in the centigrade thermometer. —

As shown above, there are but 2 states of the property of matter, as heat is presence, cold is absence, negative electricity is absence or diminution of positive, electricity, darkness is absence of light etc. It remains now to show how many properties of matter there exist in nature, which in virtue of their 2 states may form a constituent of organic force. Among these electrical attraction stands preeminent, it gives orgin to magnetism, to endosmose or capillarity, crystallization and solubility.

It stands in relation to specific heat, and the chemical equivalent: thus, 33 grs of Zinc have as much electricity as 9 grs of water, 28 of iron, 166 of iodide of potassium. Hence a different electrical capacity is the cause of chemical attraction. Heat and light have probably some close relation to electricity: thus, when chlorine & hydrogen are mixed in a dark place they will not combine, but as soon as exposed to light, or a spark of electricity is passed through them they will combine immediatly. A salt in solution will not crystallize when kept in the dark but will readily do so when exposed to light or influenced by electricity. The last property which influences organic force is gravity. —

The question now arises how it comes that the restoration of a disturbed equibrium produces also a change of matter. When a fire is build beneath the steamboiler, the water in it is soon turned into steam, and the force by which the piston is moved is a measure of the affinities or inequilibrium between the elements of the combustibles, and secondly a measure of the difference of state between the fire and the water. It is the true force, which would be inappreciable, turned into mechanic force- it is the force of counterpoise. What we call force is but a measure of affinities. Hence

in order that matter may be changed, the property which is a state of inequilibrium, is to be intimately associated with it, in order that when it moves, matter may change also, 2ly through the agency of some mechanical contrivance, or through mechanic-force.

All the operations of nature are achieved in either of these two ways.

Some of the phenomena of organic force may now be considered. As before stated there are 2 states of any property of matter, in virtue of which matter is changed. the one state is that of presence, the other is that of absence. Or in other words, a positive and a negative state. This positive and negative state seem to me to exist also between male & female, and especially between the spermcell of the male & the germcell of the female, in virtue of which they combine and a neutralization of the difference of state is the result. The product however is entirely different from anything in the mother, and must ever remain so, though a part of the body of the mother were added to it. —

The conditions are favorable. Highly elaborated materials are furnished, and at the same time organic force by the female, so that the destruction of the smallest particle of matter generates mechanic force, building up the embryo. The destruction of one atom replaces two, and thus it is that the new being keeps on constantly increasing. The male contribution is also fixed and definite, the modification it produces in the primordial cell will also be effected in all the succeeding cells which are made from the first. Each cell being a machine, living for itself, produces, when operated on by determining influences, others in accordance to its own construction.—

An illustration we might cite from the phenomena of crystallization, as when different salts are dissolved in water, and small crystals are thrown in to have them crystallize, so will each particular crystal attract its res-

pective salt. This idea is furthermore confirmed in cross-breeds. —

Further the 2 contributions are definite in proportion, or in a multiple of that proportion in their combinations, and thus sex is determined. When the positive element is in excess, or spoken figuratively when there are 2 proportions of base to one of acid then, the tertium quid is to be a male, should the negative element be in excess, or 2 proportions of acid to one of base, then the new being would be of the female kind. Should such views be correct, then a man of much virile power, superiority and temperance should have principally males in his progeny. While on the other hand if the female be superior to the male & her ova well matured, things should be in favor of females. —

A few hints I only shall offer in regard to the manner in which organic force sets to work to produce the human organism. —

Electricity & heat play the most important part among the active agents. By electricity it is that the ovum is divided first into 2 segments, then into four, and so on until the mulberry mass is formed. (Heat is necessary for its developement and action.)

Meanwhile the processes of nutrition and destruction come in, the former process however overbalances the latter by far and for reasons already stated. The mechanic force seizes hold of materials already partially oxydised or destroyed and constructs thereof the various tissues. In this manner it is that the spinal marrow is formed, the particles being deposited in a way similar to that what takes place when a solution of sulphate of copper is affected by a current of electricity. Of materials still more changed muscle is formed, and lastly the fibrous and osseaus tissues are constructed, part after part is made in succession as soon as possibility will allow: until at last the work of the mother is completed

and a being like her is given to the world. This idea rests on the supposition that the destruction of one atom generates force for to build up two, though the 2 build up be those which were formerly destroyed in order to get the requisite force, for the change. Now other phenomena come in; instead of there being but 2 processes characterizing the vitality of the foetus there are now four operative in that of the child. The process of furnishing material for nutrition and that of removing useless material or that what has undergone destruction from the system, are superadded. The 1st process divides into that of prehension of suitable food, 2nd its digestion and 3dly its absorption. This process is accomplished in youth with the greatest facility, because the fluids abound.

The second process or that of nutrition is also predominant for the reason of the first, and because the first in conjunction with the next one generates so much force as to make this one so, that is, predominant. The 3rd process, that of destruction or retrograde matamorphosis is undestinguishable from the first, both are changing matter, the former for the use of the economy, that is to build the engine, and also to furnish a portion of its motor, the latter changes matter for the developement of the motor and a power for repairing the wear and the tear. —

Nutrition changes matter from a point where it is wholly useless in the economy, to a point where it attains its highest usefulness: destruction changes matter from the point where it performs the highest office in the economy to where it again becomes completely inert. These 2 processes are undoubtedly one, although each has a different object in view. Nutrition builds up, but at the expence of force; destruction tears down, but at the gain of force.

It is not necessary that the 2 processes should balance

one another, if they should. then the body would remain stationary: in youth however the latter process comes far short of the first, and that for reasons quite plain. In youth things are in a most favorable condition, the destruction of one atom developes force for the building up of 2 atoms; thus the body of the child goes on constantly increasing.

At last a point is arrived at which both processes balance one another, and the body grows no more. The fourth process, that of excretion is also performed in the child with as much facility as the first, and also for the reason that the fluids of the body abound. Hence I conclude, if the 2nd and the 3rd processes generate more force than the 1st and 4th can make use of, then the body must be going on increasing, and vice versa. —

The child moreover is placed under different circumstances. It is no longer influenced by the forces of the mother & it is subjected to agencies which constantly tend to change and modify its organization, so that the natural relationship existing between mother and foetus are constantly being diminished, so that in the adult not even a trace of natural tie may remain. —

The organic force of the adult is without him, moreover he has a regulator and an intelligent engineer within him, both the latter are exitomotor nerve-force, each of them is made up of incidence and reflection, action and reaction. The one is the sympathetic nervous system taking cognizance of the conditions of parts as to how they are affected by destruction and by reflection furnish a larger amount of blood to the part, to meet the demand. The ganglion is there, that the stimulus of incidence may accummulate to a certain extent. —

The other is the cerebrospinal nervous system. —

The cerebral system receives the incidence and retains it to a certain extent, this hibernation of incident stimuli is consciousness, when stimuli have been received to

a certain extent then a reflection of those stimuli will take place, this takes place in the cerebral ganglia. The spinal ganglia also receive by means of the spinal nerves incident stimuli, and they know it, because they have consciousness also, and when their capacity is exceeded then the stimuli are reflected and we have muscular contractions; if morbid, convulsions. Hence, I define consciousness to be the retention of incident stimuli, be it things seen or heard or sensations experienced, in the cerebral ganglia. The will is the reflection of incident stimuli, the will can not afford anything exept what it has previously received. No man wills exept he is stimulated to do so, no man knows anything by merely willing to know it, repeated and powerful inpressions are required to have been made before there is any consciousness to affect the will. So we find that even the regulator and engineer are dependent for their existence on causes wholly without in their existence. —

Further, in the adult the rule in regard to nutrition pertains. The demand determines the supply. If a part is very much affected by waste, the sympathetic nerve takes cognizance of this and conveys this stimulus to the ganglion which by reflection of this incidence determines a larger amount of blood to the part where it may be required. I do not mean to say, that this influence is electricity though the phenomena might be likened to those of an electric battery, the blood cells which are being destroyed might represent the zinc and copper plates, the oxygen the acid, the white substance of swan the conductors and the ganglion a partially insulated plate. I think that it is only a difference of state which is neutralized or an inequilibrium which is restored. —

The process of nutrition is also equal to that of destruction, & just force enough is left for the 1st & 4th

processes to fulfil their functions and thus the body remains stationary. A second rule holds good, that is, that the use to which a part is subjected determines its shape and dimensions, thus is the arm of the blacksmith, & the of eye the monocle hypertrophied, thus are the limbs of the palsied person atrophied. —

All depends on the stimulus to which a part is subjected, and the blood thereby sent to the part, be the cause exercise or an irritant.

In old age the 1st and the 4th processes are performed with greater difficulty: the solids abound, the machinary has become much more difficult to move, it has got impacted with detritus and therefore the body becomes less and less, vitality becomes weaker and weaker until at last one of the processes belonging to the 1st process stops, and somatic death takes place, soon followed by the arrest of the other processes, molecular death takes place, and man returns to the earth whence he was taken to go the changes of vitality over again. —

Deductions.

From what has been said it will readily be admitted, that all diseases must belong to one of the 4 processes mentioned, as either to that of furnishing material or secondly that of building it up, or 3rdly to that of tearing it down, or 4thly to that of removing the detritus. To the 1st process would belong, the insufficient digestion of nutrient food, and its due absorption, to the second process would belong lesions of nutrition, and to the 3rd lesions of interstitial absorption or retrograde metamorphosis, to the 4th process would belong all the lesions of excretions. Since the 2nd and 3rd processes are one & *the same* it is evident that we indeed have but lesions of nutrition, the other processes are subordinate to this. —

As a definition of disease it would do well to say: dis-

ease is a lesion of vitality. And as to the causes of diseases we have but one, and this is a modification or alteration of organic force. —

All inflamatory diseases belong to the 3rd process or that of destruction. Inflamation of the lungs may be cited for the purpose of illustrating this point. In this case the engorgement of the lung has taken place of necessity, in consequence of a great destruction which took previously place there. The contractility of the pulmonary tissues had nothing to do with the great afflux of blood, this being send there to meet the demand else the death of the part would result. In the treatment of this disease the physiology of the parts should be considered, and remembered that the skin performs a function analagous to the lungs; and that an ablution with water in which a little soda has been dissolved, would fit the skin for a greater performance of its function and thereby relieve the lungs. Bleeding is indicated, but only as far as it is calculated to remove passive distention of the bloodvessels, while thereby the tissues are prevented from being nurished. —

It would also be profitable for the physician to remember, that diet, exercise, clothing, rest and moral influences are the most potent remedies in the whole materia medica. —

And that in the correction of these, or in other words, in the correction of external influences, affecting the mind and the body, he will meet with more success in the healing art than by the administration of a whole farago of nauceous remedies.