Why We Have Fevers

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THE RATIONALE OF FEVER

Chapter IX

IN his now famous lecture on "The True Healing Art," delivered in the Smithsonian Institute in Feb. 1862, Dr. Trall declared:—

"Fever has no seat; fever is an action. Do not forget the primary question, what is disease? Fever is one form of disease; and as disease is a process of purification, fever must be one of the methods in which the system relieves itself of morbid matter.

"How much longer will medical men expend brain and labor, and waste pen, ink, and paper, in looking for a *thing which is no thing* at all, and in trying to find a seat for a disease which has no localized existence."

The idea here expressed, that fever is but a part of the general process of purification and reconstruction that is disease, and that fever is salubrious or beneficial, has been held by Orthopaths, Hydropaths and Naturopaths as well as by the Physio-medicalists from their origin. The idea was ridiculed by the "regular" profession, but, as will be shown later, they are now begining to accept this view. Hippocrates, indeed, is declared to have said: "give me fever and I can cure any disease," but Hippocrates cannot be classed as a regular. He was a cross between a modern hydropath, and a physio-medicalist.

The physio-medicalists' idea of fever may be seen from the following quotation from J. S. Thomas, M.D. (Physio-medicalism, p. 145):—

"We contend now from what we have said that *disease is a condition that diminishes the energy of that power which sustains and preserves* life, and that *irritation, inflammation, and fever* are simply manifestations of the vital power to restore lost action."

Again:—

"These vital actions (the actions of disease) are all friends to the patient, and should be aided, not subdued. *The lost function of the surface before an ague (chill)* cannot be *restored without fever,* and no laceration of the flesh can be healed without the aid of that physiological operation termed inflammation, which together with fever, they (the Allopaths and Homeopaths) treat as 'disease.'"

Dr. Joel Shew in *The Hydropathic Family Physician,* (1854) declares: (pp. 45-46):—

"Whatever may be true in regard to the nature and general tendency of fever, it is to be remarked that patients, when properly treated, and not injured by harsh and injudicious measures, are often found better after an attack. This happens even after certain fevers which have had their origin in malaria, or some other poisons."

It has been said that "Inflammation is a local fever and fever is a general inflammation." If by this is meant, that they are both parts of the same healing process we do not object. But a general inflammation could not exist because of lack of sufficient blood in the body to produce it. Fever is rather a general systemic reaction where irritation and inflammation are great and affect the internal organs to some extent.

It is the rule that fevers are preceded by a chill. The chill is due to the withdrawal of the blood from the surface of the body and the chill causes a suspension of skin radiation, and fever follows due to the suspension of skin radiation. Fever not only enables the cells on the interior of the body to accelerate their activities but also assures the warmth of the surface of the body which would otherwise remain cold.

The cells in all the tissues and fluids affected in fevers and inflammation are enlarged. There is always an increased exudation of fluid from the blood in the affected parts resulting in increased nutrition and more rapid growth. This elevation in body heat in inflammations and fevers is constant and it is impossible for these to occur without a temporary increase in the amount of living matter in the affected areas. The cells always experience increased nutrition.

Perhaps we can best get a picture of the rationale of fever by observing the movements of an amoeba under varying conditions of temperature. Autonomous as this

single celled creature may seem, it is unable, without outside influence, to raise its functions above the physiological standard, or, on the other hand, to check or suppress them. If the temperature, in which it exists is raised a few degrees its movements, previously perhaps slow and languid, immediately become more lively—the vital activity of the cell is increased. *An increase in temperature is necessary to an increase of vital activity.*

A decrease in temperature has the opposite effect. If the liquid in which the amoeba exists, is gradually cooled the cell gradually ceases its movements and activities and becomes, finally, a mere inert globule which is capable of resuming its former activities only after its temperature is raised. *Reduction of temperature reduces cellular activity.*

If the temperature is raised too high the movements of the cell gradually cease. At a certain degree of warmth the cell becomes still and stiff and can resume its actions only after its temperature has been allowed to fall. *Excess warmth stops cell activity.*

We can raise the temperature of the amoeba as high as we like for we supply the heat from the outside. It is not a product of the cells own activity. In the body, in fever, this is not so. The heat is the result of the body's own activity and if it goes beyond a certain point cell activity is automatically lowered and heat production lessened. *There is then, an automatic check to the height fever may rise.*

One of the chief functions of the skin is to regulate body temperature. Heat is radiated through the skin, chiefly through sweating. The body is cooled by evaporation of perspiration. Any fluid, in evaporating, takes up heat. The sweat, in evaporating extracts heat from the body.

By regulating the amount of blood that reaches the skin the escape of heat from the body is controlled. The more blood there is in the skin the more heat there is radiated from the body. If the body is chilled the blood vessels in the skin contract. This forces the blood away from the surface into the interior of the body and conserves its heat. When the body is hot, its surface vessels dilate. This allows larger quantities of blood to reach the skin and dissipates more of its heat.

Two sets of nerves are concerned in the regulation of heat conservation and heat radiation. The vasomotor which control the size of the blood vessels and thus control the blood supply, and the secretor which stimulate the activities of the gland cells. Generally an increased blood flow and accelerated glandular action exist together. It sometimes happens in cases of shock or in nervous individuals that a profuse clammy perspiration occurs with a decrease in the blood supply. The excretion of sweat is regulated by the nervous system. The sweat centers, located in the medulla and spinal cord are aroused into action by exercise, changes in external temperature, mental emotions, many drugs and often by an increase in the temperature of the blood circulating in the medulla and cord.

The body not only regulates the radiation of heat but also regulates the production and distribution of heat. It often happens in people of low vitality, or in shock that the body's ability to produce or conserve its heat is reduced so that its temperature is below normal. In most stages of acute disease the temperature is above normal and the patient is said to have fever. *Fever is simply a few degrees more of the ordinary temperature of the body.*

In fever there is usually a greater production of heat than under the usual conditions of life, but heat production is not nearly so great as in violent exercise. The reason for fever is not so much an increased production of heat, but a lessened radiation of heat. Skin radiation is suspended. Fever is not always accompanied with increased heat production.

Fever often synchronizes with impaired respiratory functions, as in pneumonia, and the introduction into the blood of far less oxygen than when normal and the subsequent formation and removal of less than the normal proportion of carbonic acid. Inflammation and fever do not necessarily depend on increased oxidation. Fever is not a process of "burning." It neither burns up the body nor the causes of disease. It is an essential part of an acute disease, however.

Slight fevers and inflammations do not necessarily result in permanent tissue changes. Many leave no traces behind them. There may be no degeneration of any

tissue in the body, no structural change, no evidence left of the struggle. After a fever or inflammation the organism may be left precisely as it was before the struggle occurred; or, as is the case where suppression is not resorted to, the organism is renovated, cleansed and renewed.

Where damage to the body or parts of it follow fever it is the cause of, or, more properly, the occasion for, the fever or the suppressive measures employed, and not the fever itself, which works harm to the body, so that no good whatsoever is accomplished by suppressing the fever, as is the usual practice among all schools of "healing." The fever itself is an essential part of the acute process, is salutary and constructive in its office, and itself is never fatal or injurious. The presence of fever is both a sign of returning health and an evidence that the body still possesses sufficient vital vigor to put up a stiff fight against the foes of life.

The *crisis* or turn of a *fever* is usually characterized by a resumption of sweating, which had previously been suspended, and a consequent reduction of the temperature of the body. In fevers the skin is usually dry.

When there is infection in the intestine, for instance, as in typhoid fever, requiring that large quantities of blood be sent to the intestine, the blood is drawn away from the surface of the body, resulting in a chill. The "onset" of fevers is preceded by a chill. The chill serves the definite end of suspending surface radiation. During the chill, although the surface temperature of the body may be normal, the temperature of the interior of the body is above normal.

The withdrawal of blood from the surface of the body and its concentration in the interior unbalances the circulation and disutrbs blood pressure. Automatically, this increases the rapidity of the heart's action and this in turn increases respiration. Thus, as will be seen later, two other essentials of the work of cure are automatically cared for.

The height of the fever will be determined by:—1. The reactive power of the sick man or woman, and 2. The virulence and amount of the toxin against which the forces of life are pitted. Of these two factors, the reactive power of the sick person is the greater factor in raising the temperature. Young and vigorous individuals easily develop a high fever in response to minor causes, whereas, the old or feeble are often unable to develop fever in defense against the most virulent toxins. The fact that fever serves a definitely beneficial end has begun to percolate through the craniums of the Heteropathic professions. Even staid old Allopathy, or the "regular" or "scientific" school is beginning to recognize this fact.

Before giving any medical testimony on this point I desire to quote Dr. Shew, *Hydropathic Family Physician*, p. 51:—

"The danger in fevers is not in proportion to the heat and excitement present, as many suppose, but to the debility. The evidences of debility, are great rapidity and weakness of the pulse, as well as weakness of the body generally. If the pulse remains long as frequent as 140 or 150, there cannot be much ground for recovery. Recovery has been known to take place when the pulse has been as high as 160, although it must be admitted that such occurrences with adults are rare. Dr. Heberden knew a case of recovery from fever even after the pulse had been at 180. Facts of this kind should be known both for the encouragement of the patient and the physician."

Coming now to medical testimony, an European authority, F. A. Rizquez, declares (General Pathology):—

"Fever is a reaction of organic defense, and as such, it should be protected, rather than opposed. Generalized febrile infections are more dangerous when they develop themselves apyretically (without fever), as, for instance, pneumonia in old people, cholera, diphtheria, etc."

Schiller declared "a fever which does not kill, invigorates."

The Literary Digest, June 14, 1924, quotes Dr. Oliver Heath as saying in the *Lancet*, a leading British medical journal:—

"For many years a heightened temperature was regarded as evil in itself— very much as a heightened blood pressure quite usually is now—and in the treatment of febrile conditions the main line of attack was directed toward its reduction.

"Experience of anti-pyretic drugs led to some doubts as to the actual benefit to be expected from a mere lowering of temperature, and experimental work showed that in infectious conditions some degree was certainly beneficial; animals kept at fever heat were able to withstand infections fatal to normal control."

The absurdities of the "quacks" and "fanatics" have again triumphed. Fever that every "scientific" physician knew to be an evil that must be suppressed turned out, after all was said and done, to be the benefit the "lunatic fringe" declared it to be, and its suppression proved to be a veritable slaughter, as we have declared for over a hundred years. Orthopathy will yet find its way into the very citadel of Heteropathy and wreck its elaborate structures and prove its bombast and pretended science to be east wind. Human progress has never come from entrenched institutions nor from the forces of exploitation. The "lunatic fringe" is the source of progress— always.

Emerson, who considers fever to be a protective measure, declares:—

"It may be said, in general, that the height of temperature is really no index to the severity of the case. The highest temperatures occur in the least serious fevers, such as relapsing fever and malaria, while in the severest fevers, the rapidly fatal infections, there may be no rise of temperature at all. In the latter case it seems as if the body were unable to make a febrile defense against the infection."

From our viewpoint the height of the temperature is an index to the reactive powers of the body. It is an index of his fighting powers. "Rapidly fatal infections" are such because there is no fighting power and this is also the reason the powers of life are so depressed by the infection that little or no fever develops.

Summing up what has just been said: FEVER IS A NECESSARY INCREASE IN BODY TEMPERATURE DESIGNED TO ENABLE THE BODY OR SOME PART OR PARTS OF IT TO EFFECTIVELY MEET AND DESTROY SOME FOE OF LIFE THAT IS THREATENING THE BODY AND TO REPAIR DAMAGES.

It is absolutely essential to the acute process and does not rise beyond the point of safety. In order to have fever two things are essential:

1. Suspension of heat radiation through the skin, and:—
2. Increased production of heat in the body.

Increased heat production demands increased oxidation. This calls for more oxygen and a more rapid circulation. In order to meet these two demands there is increased respiration and increased heart action in acute disease. Thus it will readily be seen that these two "symptoms of disease,"—rapid heart action and accelerated breathing—each serve definitely beneficial ends.

Heat production is not as great during fever as while running or during other vigorous physical activities; but heat radiation is suspended so that the heat is retained in the body. Breathing and heart action are not as rapid during fevers as when running. When engaged in vigorous effort sweating carries away heat from the body and thus prevents the temperature from running up. Suspension of skin radiation is, therefore, the most essential thing in the production of fever.

At the expense of repitition I take the liberty to quote the following from the pen of Dr. Wm. F. Havard, one of the world's leading naturopaths:—

"There are three cardinal features or symptoms in all acute diseases—increased temperature, increased heart rate or pulse beat, and increased respiration. The increased activity of the cells indicates that there is a demand for an increased amount of oxygen. This is supplied through a more rapid circulation of blood and a more rapid action on the part of the lungs. There is a lower degree of skin activity during the earlier stages of an acute reaction because of the necessity for circulatory compensation. The excessive dilation of the internal arteries necessitates the constriction of the blood vesels of the skin. This reduces heat radiation, which coupled with the increased heat production in the body, produces fever.

"Fever plays an important role in the maintenance of the acute reaction. All matter manifests more molecular activity as its temperature is increased. Protoplasm, the living substance of which cells are composed, is no exception to this. It is normal in activity, in the human body, when maintained at a temperature of about 99 degrees Fahrenheit. Its activity decreases proportionately as the temperature is lowered below

this point. If its temperature is brought too far below the normal, its life processes cease and death ensues. The molecular activity of protoplasm increases proportionately with a rise in its temperature until a point of maximum activity is reached. If carried beyond this point, the activity decreases because of too rapid disintegration of the protoplasm. In fevers, where the increased temperature is due to greater combustion taking place in the cells, it is impossible for the temperature to be carried to a point where it would cripple the cells. When the maximum activity is reached, any tendency to push it beyond this point results in decreased activity of the cells, consequently decreasing combustion and lowering temperature immediately. The action is automatic and needs no regulation from outside influences.

"No one ever died of fever. Some observers record temperatures in acute diseases of well over 108 degrees Fahrenheit, with complete recovery of the patients. The greater the reactive power of the body, the higher the temperature is likely to rise during a crisis of this nature. Children, in whom the natural vitality has not been worn down by abuse, are prone to manifest a higher temperature in reactions than adults. This would tend to prove that the fever is an index to the reactive power of the body. It is almost impossible for a person of very low vitality to have an acute disease. (This agrees with the statement made by one of the earlier Orthopaths, Felix Oswald, M.D., in his Physical Education; to wit: "A man may be too tired to sleep and too weak to be sick. Bleeding, for the time being, may 'break up' an inflammatory disease, the system must regain some little strength before it can resume the work of reconstruction." Author.)

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"The temperature of the body is maintained normally at about 99 degrees. Heat is generated as a result of combustion—burning up of carbonaceous matter (sugar and fats)—which takes place in the cells. Heat is distributed by the blood and is radiated from the surface of the body and from the lungs. The degree of heat radiation depends on the quantity produced, but must always be sufficient to keep the temperature from rising above 99 degree F. The temperature of the external atmosphere has considerable bearing on heat dissipation. If the external atmosphere rises, either heat production within the body must decrease or heat radiation must increase. Heat production cannot always be reduced immediately, but heat radiation can be readily increased by a dilation of the blood vessels of the skin. The blood vessels of the skin, when dilated, will hold at least one-third, possibly one-half, of all the blood in the body. The greater the amount of blood flowing through these vessels, the greater will be the heat radiation. Persons with inactive skins secure the increased degree of heat radiation through the dilation of the blood vesesls of the membranes of the respiratory tract. This causes overheating of these membranes, and is responsible for much catarrhal trouble. Nasal and bronchial catarrh are always associated with dry, inactive skins.

"The balance between heat production and heat radiation is maintained through the activity of a very delicate nervous mechanism, which is influenced by the thermosensory nerves of the skin and the temperature of the blood which comes in contact with it. This heat center, or heat regulating mechanism, is located in the medulla, and communicates directly with the mechanism controlling the circulation and distribution of the blood, namely the vaso-motor mechanism. A chilling of the surface of the body thus produces a constriction of its vessels, the internal blood vessels are compelled to dilate. This increases heat production. If the surface of the body is heated, the reverse takes place.

"If combustion in the cells is excessive, due to irritation or a preponderance of sugar, fats, or proteins in the blood, the temperature of the body tends to rise, and would rise were it not for the fact that the heat center in the brain senses the condition and, by reflecting its findings to the vaso-motor mechanism, brings about a dilation of the skin vessels. If the body or blood temperature has a tendency to fall due to low heat production the skin vessels are immediately constricted to conserve the heat. Heat production should be greater in winter and lesser in summer. From these facts it is seen that heat regulations are automatic within a normal range and are successful in maintaining an even temperature.

"In acute diseases heat production is, and of necessity must be, excessive in order to keep up the greater activity in the cells. Heat dissipation is therefore reduced sufficiently to maintain the higher temperature. Fever is natural in acute disease. In fact, there would (could) be no acute disease without it.

"If we regard the body as an automatic, compensating machine, with all parts and functions bearing a true relationship to each other, we will immediately see that increased cellular activity (molecular activity of the protoplasm) calls for an increased quantity of blood, demanding many alterations in functional activity. Oxygen is demanded in greater quantities to support the combustion occurring in the cells, which can only be supplied by bringing extra blood to the cells. This can be partly accomplished through the dilation of the blood vessels, but inasmuch as this very action reduces the blood pressure (the constriction of the skin vessels affording insufficient compensation), and would cause the blood to flow at a slower rate, the heart is compelled to beat with greater rapidity. The blood flows through the pulmonary vessels at the same rate that it goes through the systemic vessels, consequently the respiratory movement must increase in proportion to the heart beat, in order to insure sufficient oxygen to the blood. Thus we find that the cells' demand for more oxygen causes a dilation of the internal blood vessels, an increased heart rate, and a more rapid respiratory movement. In acute diseases the temperature, pulse, and respiration are all increased proportionately, the degree of increase depending on the activity of the cells and the extent of compensation.

"Inflammation is a state or condition produced by increased circulation and oxidation. It has five cardinal features—(1) heat, (2) redness, (3) swelling, (4) pain, and (5) alteration of function. This is the marvelous manner in which Nature proceeds to remedy injuries and to correct abnormal conditions, and that is why inflammation is present in all acute diseases, being greater in the part or parts of the body where the irritants causing the disorder are concentrated, or from which they are distributed.

"Orthopathy and Allopathy take two different and very opposing views of the subject. Admitting that an individual may be poisoned and a reaction produced by infection, Orthopathy regards this reaction (acute disease) as a process of Nature by which poisons, already accumulated in the system, are driven to a focus for the sole purpose of being destroyed and eliminated.

"Orthopathy, therefore, makes a distinction between acute disease, in which the whole body is reacting to accumulated poisons, and local inflammation the causes of which are essentially traumatic.

"A cinder in the eye will cause a local inflammation of that organ. Remove the cinder and the inflammation gradually disappears. Red pepper or any other irritant taken into the stomach with food, will produce local inflammation which will subside and disappear when the irritant is removed or disposed of. Gases breathed into the lungs, will cause irritation and even inflammation of the respiratory membranes. In fact, any irritant, whether mechanical, thermal, chemical, or electrical, will cause inflammation of the part of the body to which it is applied.

"Inflammation is a constructive and protective process. The blood contains all the healing and repairing elements, and wherever tissues are irritated or damaged, the vital fluid is rushed there in abnormal quantities to carry off the debris and repair the damaged part. This causes (1) abnormal heat (fever), (2) redness, (3) swelling, (4) pain, and (5) alteration of function, all of which subside and disappear when the work has been done—when the dangerous irritant has been removed and the injury repaired. This is accomplished quickly by a pure blood-stream, but if the river of life is loaded with foul waste matter, you can readily see that is very poor repair material, and it often happens that a local injury produces a focus very similar to that of an acute disease, because of the excess of impurities concentrated by the inflammation at the point of injury."