

Vital Action vs. Drug Action

By Dr. Herbert M. Shelton

Dr. Trall was in the habit of talking much about what he called the "law of vitality." If he ever tried to define or formulate this law I have been unable to find the definition or formulation. However, he frequently gave examples of its operation, especially in explaining the modus operandi of drugs, or so-called medicines.

It was the medical theory of the time, and the theory is not quite dead, that drugs, by virtue of their "inherent affinity" for some part, organ or structure of the living body, act on or make "impressions" on such part, organ or structure, and this affinity, or action, or impression, was termed its "property". Drugs were supposed to possess inherently in themselves certain special properties or affinities (which constitute their "remedial virtues," or in which these virtues reside), for certain parts, organs, structures, or tissues, of the living organism, and these supposed or assumed properties were termed "elective" and "selective" because they were supposed to be "exerted" on or to "have an effect on" some parts or organs in preference to others. They were supposed to act "preferentially", that is, to select or elect the part upon which they act. Thus:

Emetics were said to act on the stomach, because they have a "special affinity" for that organ. Cathartics were said to act on the bowels, in virtue of an "elective affinity" for these organs.

Diaphoretics were presumed to "select" the skin as a place of action.

Diuretics "selected" the kidneys as the theatre of their "operative effects."

Nervines and narcotics were said to "exert their influences" especially on the brain and nervous system.

Stimulants, tonics and antiphlogistics were said to make "affinities preferentially on the muscular and circulatory" systems.

One needs only a slight acquaintance with the most recent standard works on materia medica to know that these classifications of drugs and ideas of their "actions" are far from being merely interesting bits of medical history.

Drugs are said to have both local and general effects. They are still said to have "selective action." A standard text-book of materia medica tells us that "no drug effects all the organs or tissues of the body. The ability of a drug to affect chiefly certain organs or tissues is called selective action. Thus strichnine usually acts chiefly upon the cells of the spinal cord, morphine upon the cells of the brain, etc."

Some drugs are supposed to aid other drugs. This is called their synergistic action. Some drugs are supposed to antagonize others. This is called their antagonistic action. Drugs are supposed to have different effects in diseased and in healthy conditions. Their effects in disease are called their therapeutic actions; their effects in health are called their physiological actions. They are supposed to act differently in different quantities, and the effects resulting from an "overdose" are called their poisonous or toxicological actions. Empiric action is the "effect that results from the use of a medicine (drug) in disease but which has not been corroborated by laboratory experiments." When the drug has other effects than those the doctor desires, these are called its side actions. Drugs that are excreted slowly, so that they tend to accumulate in the body if repeatedly given, are said to have

cumulative actions.

It will be noticed that all actions are attributed to the drugs. The drugs act on the liver, or stomach, or bowels, or kidneys, or skin, or glands, or nerves, or muscles, etc. As an instance of this, the text-book of materia medica previously quoted from tells us that "verifuges are drugs which expel worms."

Now, vermifuges don't expel anything. Vermifuges are expelled and if the worms are expelled with them, they are expelled in the same way and by the same actions that the vermifuges are expelled. It was this idea that drugs act and the body is acted upon that Trall fought all his life. He insisted, and rightly, that it is the body that acts and the drug that is acted upon. He proclaimed the obvious fact that the truth about the so-called "action of remedies" is the exact contrary to what medical men teach.

He declared "it is the living system which acts" and not the lifeless drug. He declared also that "the 'property' is in the living system; and that property is not 'affinity' but antagonism." Medical authors he said, by their theories and terms "endow these dead (lifeless), inorganic, and actionless substances (actionless except in the mechanical or chemical sense) with instinct, if not with intelligence." "Such teachings reverse the order of Nature. There is no affinity between poisons and the living system." He affirmed that any "relation of affinity" in "any approved or conceivable sense of the word between a vital structure and a poison," since it would result in the ruin or destruction of the vital structure, "would be in derogation of the very first law of Nature, that of self-preservation." Hence "there cannot, in the very nature of things, be any relation but that of absolute and eternal antipathy between vital organs and poisons."

He did not mean, either, that the drug had a special antipathy for the vital organism, but that the vital organism had an antipathy for all poisons. Physicians explained that drugs acted on tissues and organs for which they had special affinities, while the body "responded" to or "reacted" to the drug. He replied that the action was all on the part of the body while the drug does "just nothing at all."

The drug is "just as quiescent, inert, inactive, actionless, affinityless and propertyless, in the mouth, nose, throat, lungs, stomach, bowels, blood, and brain, of a human being, as it is in the box, bottle, paper etc., in which it came. "And it would remain quiescent in the vital domain forever if the vital organs would let it alone. But this they will not do. This they cannot do. So long as they possess life, vitality, so long they will and must war upon all noxious matters."

Living matter is active, and lifeless matter is passive, in their relations to each other. Living matter acts on lifeless matter to expel it or to render it harmless, and not contrariwise, as is popularly taught and believed. We may attempt to state Trall's "law of vitality" thus: "Whenever action occurs in the living organism, as the result of extraneous influence, the action must be ascribed to the living thing which has the power of action and not to the lifeless thing whose leading characteristic is inertia." This formulation was made by Dr. Robt. Walter, one of Trall's most distinguished pupils, and called by him the "Law of Action."

To illustrate this law, suppose an emetic is given to a patient. The drug is in a bottle and the bottle sits on the "medicine" shelf. Neither the drug nor the bottle can get off the shelf. The doctor, nurse or attendant must take it down, uncork the bottle, pour the drug into a spoon and carry the spoon to the patient's mouth. Up to this point, at least the drug has done nothing. All the action has been by a living organism.

At this point the patient takes the drug into his mouth, he swallows it, it is carried down the esophagus to the stomach by the peristaltic action of the muscles of the esophagus. Up to this point

the drug has still done nothing. The act of taking the drug into the mouth is not drug action. The act of swallowing is not drug action. The action is still action by the living organism.

Soon vomiting ensues. The drug is ejected — or does the drug eject itself? Which is it that acts, the stomach or the drug? Which is ejected? The drug is cast out, the stomach remains. It is evident that the expulsive effort by which the drug is vomited is as much action by the living organism as was the action by which the drug was- swallowed.

When vomiting follows a dose of ipecac, this does not mean that the drug has acted (or is acting) beneficially upon the stomach to enable it to eject something else; it indicates that the stomach "recognizing" the presence of a foe of life, acts to eject the ipecac. Epsom salts, C. C. pills, calomel, milk of magnesia, etc., do not act on the bowels to move these or to enable them to move. The bowels do not eject the drugs because of any beneficial action the drugs may be supposed to have, but because they "recognize" in them foes of life. The actions of the body in the presence of poisons are not due to any supposed affinity between its organs and the drug, but to the eternal antagonism that exists in these organs against the drugs. (The "affinity" of drugs is chemical, not organic.) Their action in relation to drugs are first, last and all the time, true to the instinct of self-preservation.

There is no *modus operandi* of "medicines." They don't operate by any method. They are operated on. The drugs do not act at all. The living body acts — acts on or against them to expel them. The power of selective action also belongs to the body, not to the drug. Emetics are not drugs that act on the stomach to produce vomiting — they are drugs that are acted on by the stomach to expel them — the expulsive process is vomiting.

Purgatives, cathartics, laxatives, do not act on the bowels to produce diarrhea, the bowels expel the drugs by means of diarrhea. Diuretics do not act on the kidneys, but are expelled by the kidneys. Drugs are expelled through such channels and by such means as produce the least wear and tear on the system.

What, then, are those "physiological actions" of poisons we read about in *materia medica*? They are figments of the medical imagination. Drugs do not have physiological actions. Poisons are pathogenetic — disease producing. They are never anything else. Medical men "might as well talk of the living principles of death, or of the eternal laws of non-existence" as to talk of the "physiological action" of poisons. There are no such things as physiological poison or pathological health.

The only legitimate study of drugs in their relation to the body is that of toxicology. The local, general, synergistic, antagonistic, therapeutic and physiological "actions" of drugs are myths, equally with their "empiric actions." That they accumulate in the body, that they occasion "side actions" that they poison and injure, we do not deny. We only deny that they ever do anything else.

The integrity of the vital structures can be maintained only by preventing chemical union between the elements of the living structures and elements external to them. It is precisely because this chemical action must be prevented that the body must act to rid itself of drugs, chemicals, dye stuffs, etc., that are foolishly introduced into it to "cure" it of disease —that is, to "cure" it of its actions and processes designed and- instituted to rid it of other deleterious substances.

The vital organs, therefore, resist and expel all foreign substances from the organic domain with an intensity proportioned to the chemical affinities existing between the elements within and the elements without the living structures. All so-called morbid or abnormal vital actions relate to the expulsion of injurious substances from the body and the repair of damages. They are as truly vital actions as the regular, normal or physiological actions.

"What difference does it make," asks some reader, "whether the drugs act on the body or the body acts on the drugs, so long as actions and effects result?"

It makes all the difference in the world. When we understand that the action is vital action and that it is accomplished by a waste of vital power and, as is frequently the case, by a determination of power to one organ when it is urgently needed elsewhere, we can see that the drug must inevitably produce harm. Using drugs to provoke action — the action of violent resistance — not only disturbs the whole vital machinery and takes its attention off the task in hand, but it inevitably expends the funds of life. It draws fearfully upon the capital stock of energy and, even if it does not result fatally, it prolongs the disease or prevents complete recovery, leaving the patient with chronic disease.

It makes a vast difference in results whether the drug acts to vomit itself or purge itself or urinate itself, or the body is forced to waste its energies and divide its efforts in ejecting the drug. If it is drug energy that is expended in the vomiting or purging, the body's energies are conserved; but if it is the body's energies that are expended, a more profound enervation is produced, hence a crippling of the healing processes results. If the body is busily engaged in freeing itself of the toxins that cause disease and is forced to divert part of its energy and attention from this work to that of expelling poisonous drugs, recovery is retarded, even if it is not prevented altogether.

If coughing is checked by the depression of the nerves of respiration that follows the taking of certain drugs; if diarrhea is checked by the depression of the nerves of the bowels which follows the taking of certain drugs, then, the very substances in the respiratory tract or bowels that the coughing and diarrhea were intended to remove are left in these structures to produce the very harm their removal would have prevented. Suppression of the body's efforts at elimination and self-defense is the most frequent cause of death.