

is, however, no more a cause of the functional condition than food is a cause of a man's working. It may hamper if not digested and assimilated.

It becomes, then, apparent that the essential for metabolism is a vital connection with the dominant nervous system.

It has been objected that the nervous system has a metabolism of its own, independent of other regulative influence, but in this objection it seems to be forgotten that the nervous system is itself made up of parts which are related as higher and lower, or, at all events, which intercommunicate and energize one another.

We have learned that one muscle cell has power to rouse another to activity, when an impulse has reached it from a nervous centre.

Doubtless this phenomenon has many parallels in the body, and explains how remotely a nervous centre may exert its power. It enables one to understand, to some extent, many of those wonderful co-ordinations (obscure in detail) which are constantly taking place in the body.

We think the facts, as they accumulate, will more and more show, as has been already urged, that the influence of blood pressure on the metabolic (nutritive) processes has been much over-estimated. They are not essential, but concomitant in the highest animals.

Turning to the case of muscle, we find that when a skeletal muscle is tetanized, the essential chemical and electrical phenomena are to be regarded as changes differing in degree only from those of the so-called resting state.

There is more oxygen used, more carbonic anhydride excreted, etc. The change in form seems to be the least important from a physiological point of view. Now, while all this can go on in the absence of blood, or even of oxygen, it cannot take place without nerve influence or something simulating it.

Cut the nerve of a muscle, and it undergoes fatty degeneration and atrophy. True, this may be deferred, but not indefinitely, by the use of electricity, acting somewhat like a nerve itself, and inducing the approximately normal series of metabolic changes. If, then, the condition when not in contraction (rest)