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quence of the influence of active oxygen on the protoplasm with ferment-like action.

It would lead too far into details to demonstrate the agreement of these hypotheses with all the results of observation on them *in the entire realm of the organic world which they include.* Let it suffice to choose from very different classes of organisms individual representatives, and demonstrate their agreement.

What I have already said of beer yeast-cells and bacteria is in unison with the hypotheses, so I will not repeat.

The muscles of men and vertebrates, through stimulation, change in density, break up glycogen, and form lactic acid; the latter is, however, in the presence of oxygen, oxidized; carbon dioxide and water are formed in the proportion the carbohydrates furnish, and in correspondence with the strength and duration of the stimulation. The change into the stimulated condition follows also in the absence of The removal of oxygen calls into existence lastoxygen. ing tetanus (poisoning by hydrocyanic acid, rapid death by bleeding, hanging, etc.). On the other hand, under normal presence of oxygen, in order to maintain a stimulated condition in some measure lasting, continuous repetition of the stimulus is necessary, since the active oxygen at once forms the anhydrated protoplasm.

In glands, in consequence of stimulation, a secretion of a watery fluid follows, which can have only chemical, not physical, causes, in that it is independent of the bloodpressure, and the fluid secreted does not contain those salts which, in all the transudations, pass over from the blood in definite proportions.

With this secretion abundant formation of carbon dioxide and of warmth takes place at the same time. Very clearly were these conditions observed in the secretions of