

same elements derived from them. Perhaps it may be thought that the decomposition first takes place, and the vegetable growth is the sequence; but in reply to this we may say that such has not been shown; while, upon the other hand, the experiments of Pasteur and Tyndall prove how long organic substances will continue without evidence of putrefaction and how speedily this occurs when the first step towards it is taken by the introduction of vegetable life.

"In the treatment of wounds it is universally admitted that it is of primary importance to avoid decomposition, and it is also of primary importance to recognize its causes. Allow me to quote some remarks made by Mr. Gamgee who says 'that infection is always floating in the atmosphere, ready to settle in the shape of impalpable and implacable germs into any breach which may be made in the surface of a living body, is an idea which has never troubled me.' In the same paragraph he refers to the means useful to minimize the material for and the causes of discharge, viz., carry it off as produced by drainage-tubes and absorbent dressings; and states 'that life is the great antiseptic.' \* \* True it is that life is the great antiseptic, and it is probably also true that as regards tissues which are *instinct with life*, vegetable forms cannot exercise a malign influence; but the vitality of tissues which have been wounded must be to a certain extent impaired, and the fluids on the surface of a new wound are not within the same vital influence as those which pass from the vessels in the nominal operations of nutrition. It is therefore acting upon true antiseptic principles to follow the advice given by the able surgeon, and thus lessen the soil upon which vegetable forms flourish and give rise to poisons producing fevers when absorbed; and if recognizing their influences we can use means to prevent their access to wounds, we are carrying out the principles of rational surgery, which comprehend the fullest knowledge of the causes preventing the

repair of wounds. The question of the cause of decomposition has its relation to the practice of medicine; and although it appears to be the result of the presence of vegetable forms, yet we must remember that this may be only a part of the truth. If decomposition may result in the formation of poisonous substances which, carried into the circulation, produce fever, the question arises, do contagious fevers depend upon changes due to the action of vegetable forms upon the fluids? The current of medical thought seems tending to this belief, and yet before this can be affirmed, it should be proven that the changes in vital fluids causing fever, are due to the influence of vegetable growths, and to this only. This is indeed a most important question to determine, and we cannot reflect upon it without realizing the difficulties which oppose our reaching the truth.

"When a discussion on the germ theory took place in the Pathological Society of London, in 1875, Dr. Murchison called attention to a chemical process which presented some resemblance to the multiplication of contagion. He said that a substance called oxamide is decomposed when it is boiled with acids or alkalies into the oxalate of ammonia, and if the acid selected be oxalic acid, a small proportion of this acid will convert an infinite quantity of oxamide into the oxalate of ammonia; in other words, the oxalic acid which excites the change will itself be indefinitely multiplied. Again, while the vinous, the lactic, the viscid, and butyric fermentations, are each attended with and seem to be dependent upon the growth and multiplication of organic forms peculiar to each, it is known that many organic substances when boiled with water and a small quantity of acid, undergo hydration and decomposition, or other chemical transmutation, the acid remaining ultimately in its original condition. Cane sugar is converted into dextrose, starch into dextrine and dextrose. Diastase found in the germination of grain (in malt-