

ON THE THERAPEUTIC PROPERTIES  
OF ALCOHOL

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Purely ethyl alcohol, undiluted, is regarded by all chemists and intelligent physicians as an active poison, rapidly destructive of both vegetable and animal life whenever brought into contact with either. The presence of absolute alcohol in contact with any living tissue immediately arrests all natural metabolic and vital processes in such tissue, and causes it to become corrugated or shrunken and dead. Swallowing absolute alcohol, undiluted, as quickly destroys the vitality of the membranes of the mouth, throat and stomach, and kills the individual, as does pure carbonic acid. Consequently, alcohol, in its pure and undiluted state, is not capable of being used as a medicine, but when largely diluted with water, as it is in all the fermented and distilled beverages, its direct corrosive or corrugating effect upon the membranes it comes in contact with is so much diminished that it is capable of being absorbed and conveyed in the blood to all parts of the living body. In this diluted condition, therefore, it early begins to be used both as a medicine and as a popular drink; and as the most readily appreciable effect was to diminish the individual's consciousness of impressions, not only from without, but also from within, it soon came to be regarded as a universal tonic and restorative. Its supposed tonic and restorative effects were based wholly on the sensations and movements of patients or individuals under the influence of moderate doses, for it soon demonstrated that large doses directly diminished strength, sensibility and action. But when, under the influence of moderate doses, the patient said he felt less weak or weary, felt the sensation of cold or heat as painless, felt lighter or more buoyant, and his heart was found to beat faster, it was perfectly natural for both physician and patient to think the alcohol was acting as a tonic or stimulant and general restorative. It was not until the advancement in analytic

chemistry and the physiology of all parts of the nerve structures of man, coupled with the researches in physics and biology of the last half century, that we have had it in our power to prove the incorrectness of these conclusions founded on the sensations and actions of the patient under its influence. The more recent chemico-physiologic researches have shown clearly the composition of the blood and the various tissues of the body, and especially the existence and functions of the hæmoglobin, leucocytes and other corpuscular elements of both blood and tissues, and the part each plays in the reception and internal distribution of oxygen, with its effects on all the metabolic changes in living bodies. By the same class of researches it is shown that alcohol, diluted with water and taken into the stomach, is rapidly absorbed by the capillaries and is conveyed in the blood to every tissue in the body, and by its presence retards the natural metabolic changes, lessens the processes of oxidation and elimination, diminishes nerve sensibility and, when repeated from day to day, induces cell and tissue degeneration. By the more recent studies in the anatomy and physiology of the several parts of the nervous system, it has been shown not only that the action of the heart and the movement of the blood in the vessels are directly under the control of the cardiac and vasomotor nerves, some of the fibres of which are exciters of action, while others are inhibitors, by which uniformity and harmony is maintained in the circulation of the blood, but also that our voluntary movements and sensations are manifested by the cerebro-spinal nerves, having their exciters and inhibitors by which we are enabled to co-ordinate muscular contractions and relaxations in executing all complex movements, and equally so it is that our mental actions, manifested through the convulsions of the brain, are regulated by exciters and inhibitors. Every individual whose brain is in its normal condition has frequent sensations, impulses or exciters of mental actions which he promptly inhibits or dis-