

ment of disease. He treated of the effect on the functions of the more important organs and the constituents of the blood and tissues.

When taken into the stomach in a diluted form alcohol undergoes no digestion, but is carried directly into the blood and some part of it is speedily eliminated unchanged through the lungs, kidneys and skin. Experiments show conclusively that about 10 per cent of the alcohol taken loses its identity immediately on mingling with the blood. A careful review shows no evidence of a marked increase in heat production of carbon dioxide by the presence of alcohol in the blood. On the other hand, the average heat dissipation has been proved to diminish. While present and circulating with the blood it diminishes nerve sensibilities of course, lessens the average temperature, retards molecular changes in the tissues and lessens the aggregate of effete elimination.

The well-known fact that alcohol possesses a strong affinity for water contained in the living tissues was discussed at length, the experiments of Drs. Richardson, Harley, Payne, Kales, Wood, Martin, Loomis, Davis, Edgerly, Townsend and many others being carefully reported. Alcohol causes less oxygen to be carried from the pulmonary to the systemic capillaries. It caused a diminished production of carbon dioxide, urea, phosphates, heat, etc. It is a true anæsthetic upon the nerve center. Instead of generating any kind or form or force of energy it actually diminished every known form of force belonging to the living body and promotes molecular and tissue degeneration. If administered in acute general diseases it quiets the patient's restlessness and lessens his consciousness of suffering, but favors the retention in the system of both the specific causes of disease and the natural excretory materials that should have been eliminated. It adds to the number of fatal results. The very generally accepted doctrine that alcohol is a cardiac tonic does not rest on the true basis of clinical experience. The nearest approach to such a basis is furnished in the reports of hospital and private practice for a given period where the diseases in question were treated without alcohol and anti-pyretics, and where both were freely used. In 1864 the Commissioners of Public Charity in New York City, on account of the great mortality of fever patients in the hospital, removed them to Blackwell's Island, where they were placed in tents. Their treatment was exclusively hygienic, consisting of ample ventilation, good air, cleanliness and simple nourishment. The result was a death rate of only 6 per cent.

In the Mercy Hospital, of Chicago, over which Dr. Davis has had supervision for twenty years, the average death rate was only 5 per cent. On the other hand, nearly all the reports from hospitals in which alcoholic liquors are used in the treatment of typhoid and typhus fever the rate is

from 16 to 25 per cent. The rate in Bellevue Hospital, New York, before the Blackwell's Island experiment, was one death in four and one-half. Numerous statistics were given bearing on this point. Dr. Davis said the continual use of alcoholics and anti-pyretics was not in sympathy with the progress of the age. The fundamental error consists in using special remedies for the control of particular symptoms, or the removal of specific causes without an adequate knowledge of their influence on the blood and the various processes of the human body. The highest degree of success in the treatment of acute general diseases will be attained by removing from the patient the action of the specific and predisposing causes of his disease and surrounding him with air and perfect sanitary conditions, avoiding the use of such remedies as either directly or indirectly retard normal processes. The restoration of these processes must be aided by promoting natural elimination. Morbid conditions of the glands, spleen and stomach must be palliated so as to prevent such structural changes as might otherwise end in fatal exhaustion. The steps of healing must be carefully graded, remembering that the same remedial agent that might be of great value in one stage might be even destructive in another. Dr. Davis said that the foregoing conclusions were the result of a life work, and his faith in the efficacy of the remedial agencies had in no wise been diminished. He would feel repaid if they should lead any number of the profession to a closer understanding of the real *modus operandi* of the remedial agents used in the treatment of acute general diseases.—N. S. Davis, M. D., in *Chicago Weekly Med. Rev.*

#### THE THERAPEUTIC USES AND TOXIC EFFECTS OF CANNABIS INDICA.

A valuable contribution to the literature of Indian hemp is a paper with this title published in the *LANCET* for March 22, 1890, by Dr. J. Russell Reynolds. In explaining the occasional toxic effects of this drug, two things must be remembered: First, that, by its nature and the forms of its administration, *Cannabis indica* is subject to great variations in strength. Extracts and tinctures can not be made uniform, because the hemp grown at different seasons and in different places varies in the amount of the active therapeutic principle. It should always be obtained from the same source, and the minimum dose should be given at first and gradually and cautiously increased. The second important fact to keep in view is that individuals differ widely in their relations to various medicines and articles of diet—perhaps to none more than to substances of vegetable origin, such as tea, coffee, ipecacuanha, digitalis, nux vomica, and the like. In addition to the purity of the drug, the