and the knowledge of the worth of the true friend acts as a stimulus to more decided exertion. Help a man over a difficulty secretly and quietly, and he, clad in his self-respect, will overcome obstacles which seemed insurmountable; but help him even to a greater degree publicly, and you will find him resting upon his oars, able to do little for himself, and that little with no heart and no spirit. Banish strong drink, and what son would see his parents come to want. Banish strong drink, and what parent would allow his children to be without the means of earning a living. Banish strong drink, and the god-like nature of man will be brought out, he will then look upon his fellow-men as a brother; and in faith in God's providence will share his crust with any brother in distress. If you think this desirable—if you would see humanity raised—if you would delight in your own happiness, and be glad to be the instrument of happiness to others, then I beseech you to take the pledge of abstinence, and these things will be accomplished.

Alcohol and its Effect upon the Human System.

BY PROF. E. L. YOUMANS.

At an early hour, notwithstanding the unfavorable weather, Dr. Tyng's Chapel was filled with a highly intelligent and appreciative audience. Dr. Tyng introduced the lecturer to the audience, who received him with much enthusiasm. The lecturer spoke for an hour and a half in an impressive, convincing and eloquent manner; his illustrations and experiments being highly appreciated by the audience, who listened with earnest and untiring attention.

Mr. Youmans began his introductory, by saying that in undertaking to consider a profound scientific question within the limit of a single lecture, I encounter difficulties at the threshold with which lecturers generally are unacquainted. Those who speak to a popular audience upon critical, literary, ethical, political or historical topics, usually find their hearers educated up to a ready understanding of the elements of their subject and the terms employed to represent them—this is presupposed. But it is not so in a scientific discussion; we are here compelled to presuppose the very opposite—that the listeners are quite unacquainted with elementary facts and principles, and the terms employed to represent them. We everywhere meet with persons of high literary attainments and large intelligence, who nevertheless are deplorably deficient in scientific culture. Were I to speak to you of President Pierce's administration of the laws of this Government, I should be understood and anticipated in everything; but in treating of God's administration of the laws of the human constitution, I must begin with the most primal conceptions. I speak of this only as a serious difficulty in attempting to dispatch an important scientific subject in a narrow compass of time. The sources and nature of alcohol are well understood by all scientific men; with them there are no two opinions about it. But many people are not quite clear upon the subject; for the benefit of such I have prepared a chart, upon which the chemistry of the question is made visible. The lecturer here directed attention to a large and beautiful chart, (the same which accompanies his work,) which exhibits the sources and chemical compositions of alimentary chemical atoms. He showed how mainly from the three substances, carbonic acid, water, and ammonia plants produce all the principles of food. They organise or build together dead mineral matter into compounds capable of nourishing the animal body, viz: sugar, starch, gum, oil, gluten, &c. Within the animal system those foods are decomposed and destroyed, and restored to the simple or inorganic state. In returning to this condition they give out heat and force, which becomes animal heat and animal power. In a scientific view, foods are only those substances which are capable of becoming parts of the animal body, and then of relapsing into the inorganic state, *without doing injury to the fabric.* All organised or living substances have this tendency to perish or return to simple conditions, and a great number of chemical productions are formed as the successive steps of this backward change. Among these is alcohol. It is not a product of vegetable growth, as are all foods, but a result of the destructive forces of putrifactive decomposition, and differs totally in origin, chemical properties, and properties from the aliments which man employs as food. This is the peculiar and active principle of all intoxicating liquors. We now inquire what is its behavior in the human system. When alcoholic liquors are taken into the stomach they do not remain there to be digested like aliamentary matter, but are at once taken up by the veins and pass forward to the general circulation. If they remained in the stomach they would stop all digestion, thereby destroying the gastric juice, precipitating its pepsin. Say Todd and Bowman, perhaps the first living authors upon physiological subjects, "The use of alcoholic stimulants also retard digestion by coagulating the pepsin and thereby interfering with its action." Were it not that wine and spirits are rapidly absorbed the introduction of these into the stomach *in any quantity* would be a complete bar to the digestion of the food, as the pepsin would be precipitated from solution as quickly as it was secreted by the stomach. Having entered the circulation the alcohol is distributed throughout the system, or it enters those parts which have the strongest attraction for it. What now are its effects on the animal tissues? The human body is a theatre of the constant change of atoms and particles, and to carry forward these changes and transportations of atoms, water is the great medium —from four-fifths to nine-tenths of all parts, muscles, nerve, eye, and brain. It is just as vital and living an element of the tissues as the solid substances with which it is associated. Leibig made the following experiment:—He took a piece of fresh animal membrane weighing 141 grains, and consisting of 34 grains of dry matter and 107 grains of water, and placed it in about 2½ cubic inches of alcohol; after a time he withdrew it, and found that it had absorbed 51 grains of alcohol *and lost 99 of water.* The alcohol, therefore, drove the water before it displacing thrice its value. This disturbance of the natural composition of a tissue we call disorganization, and it occurs wherever alcohol enters a living part. This action of alcohol—"depletion of the organs," as it is termed—is recognised by Pereira in accounting for its medicinal effects. The next great constituent of the body is albumen, which exists in the blood and all the fluids of the system; white of egg is a sample of it. It is the material from which all tissue structures are derived. With only the addition of warmth, the chicken is produced from it. Throughout the body albumen is constantly changing into fibrin and fibrin into flesh.