

Professor Pereira, in his able work on *Materia Medica*, describes the local effects of alcohol:—"The local effects of alcohol, or rectified spirit, are those of a powerfully irritant and caustic poison. To whatever part of the body this agent is applied, it causes contraction and condensation of the tissue, and gives rise to pain, heat, redness, and other symptoms of inflammation. These effects depend principally or wholly on the chemical influences of alcohol over the constituents of the tissues: for the affinity of this liquid for water causes it to abstract the latter from soft and spongy parts with which alcohol is placed in contact; and when these are of an albuminous or fibrous nature, it coagulates the liquid albumin or fibrin, and increases the density and firmness of the solid albumin or fibrin. The irritation and inflammation set up in parts to which alcohol is applied, depends (in part) on the resistance which the living tissue offers to the chemical influence of the poison; in other parts, it is the reaction of the vital powers brought about by the chemical action of alcohol." Dr. Pereira also admits the existence of a *dy. amical* action, analogous to those magnetic and electric influences which certain substances exert on each other without undergoing any appreciable change in their respective properties, and by virtue of which alcohol occasions local irritation and inflammation, independent of its chemical agency.

Alcohol in its concentrated form is never, however, used externally, even as medicine; but the ordinary spirituous liquors are sufficiently powerful to produce the most detrimental effects upon the *healthy* constitution. These effects vary from the slightest degree of irritation, up to intense inflammation and ulceration, and from the slightest degree of constitutional excitement or exhilaration up to the deep weakness, Coma, Apoplexy, and Death.

All are familiar with the painful and mischievous effects of even a single drop of spirits on the eye, and it is well known, that such painful sensations are not experienced in the stomach when spirits are swallowed; the conclusion drawn is, that as the pain is absent, so is the injury. The best positive evidence to the contrary of this conclusion, is furnished by the case of a young American soldier, St. Martin, who unexpectedly recovered from the effects of a gun-shot wound, which healed with a valvular opening into the stomach, allowing the appearance of its internal surface to be examined by the eye. Dr. Beaumont, his physician, took advantage of this circumstance, to ascertain more fully the laws of digestion, and the effects of different substances on the coats of the stomach. After the free use of ardent spirits, Dr. Beaumont found the mucous lining of the stomach "covered with *inflammatory*, and *ulcerous patches*, the secretions vitiated, and the gastric juice diminished in quantity, viscid and unhealthy; although St. Martin complained of *nothing*, not even of impaired appetite." St. Martin was, in his general habits, a healthy and sober man, yet Dr. Beaumont observed that "*the free use of ardent spirits, wine, beer, or any intoxicating liquor, when continued for some days, has invariably produced these morbid changes.*" It was only when drinking was continued for a longer time, or to a greater excess, that he complained at all. St. Martin's is the reverse of an extreme case. There are thousands who, although taking great credit because "they never take more than one glass," do so simply because they cannot bear the gastric irritation occasioned by a second. Those individuals, on the other hand, are most likely to contract habits of intemperance, whose digestive organs best resist the irritating effect of alcohol, and who can, therefore, indulge glass after glass with comparative impunity. In like manner, the liver, the kidneys, the brain, and nervous systems, are all subject to injury of their structure, and derangement of their functions—a multitude of complicated diseases is the consequence, and, according to Liebig, alcohol, by combining with the oxygen of blood, deprives the

muscular system of its natural source of strength, and thus "diminishes the force available for mechanical purposes." The practical effects of this will be illustrated by the following observations of Sir John Ross, who remarks that when men "under hard and steady labour are given their usual allowance, or draught of grog, or a dram, they become languid and faint, *losing their strength in reality*, while they attribute that to the continuance of their fatiguing exertions." "He," continues this eminent navigator, "who will make the corresponding experiments on two equal boats' crews, rowing in a heavy sea, will soon be convinced, that the water drinkers will far outdo the others;" and in the great majority of fatal cases of intoxication, death is caused by the blood—from the combination of its oxygen with alcohol—becoming poisoned and totally venous, and destitute of vital qualities. The appearances on dissection, according to Dr. Ogston, being rather those of "asphyxia than of apoplexy."

When spirituous liquors enter the circulation, a greater or less degree of vascular and nervous excitement is the consequence, the mind is exhilarated, the feelings elevated, and a greater amount of muscular activity, and energy, can for a time be brought into play; this is attended, however, by a great waste of mechanical power. It is the love of this undue and temporary, though pleasing excitement, which constitutes the great inducement to drink; for as the effect soon passes away, it is necessary to repeat the dose, in order to remove the physical and mental depression which unavoidably follows, and as the stimulant loses its effect by repeated application, it becomes necessary to increase the quantity, so as to produce the desired state of feeling. Alas! how often is the drunken appetite thus formed, and this "mockery" followed into the regions of death. This is the grand source of fallacy in reasoning on the effects of spirituous liquors. To all the demonstrations of physical injury caused by their use, it is answered, "I feel the better of a little." Judging from their delusive feelings, persons who use tobacco, or opium, can make the same reply, and the employment of these and all other narcotic substances, is also liable to the same result—namely, the formation of an augmenting appetite for their exciting effects; and this is the most fatal objection to their unnecessary, though experience has shown that it does not apply to their strictly medicinal, use.

The temporary employment of spirituous liquors may be necessary to remove or counteract disease, or to support an exhausted or defective state of the constitution. Dr. A. Combe, in his excellent work on Dietetics says, "in these cases they ought to be considered as medicine," and adds, "if all the functions of the system are already vigorously executed *without* the aid of spirits, their use can be followed by only one effect—*morbid excitement*; and it is in vain to contend against this obvious truth. The evil attending their unnecessary use may not be felt at the moment, but nevertheless it is there." The following important MEDICAL TESTIMONY, signed already by about 1000 medical gentlemen, including the medical advisers of her Majesty's household, the heads of the Army and Navy medical departments, and by many of the most distinguished medical authorities and writers of the day, will show the necessary conclusions:—

"I. That a very large portion of human misery, including poverty, disease and crime, is induced by the use of alcoholic or fermented liquors, as beverages. II. That the most perfect health is compatible with total abstinence from all such intoxicating beverages, whether in the form of ardent spirits, or as wine, beer, ale, porter, cider, &c. III. That persons accustomed to such drinks, may, with perfect safety, discontinue them entirely, either at once, or gradually, after a short time. IV. That total and universal abstinence from alcoholic liquors, and intoxicating beverages