

THE EFFECTS OF ALCOHOL ON THE LIVER AND KIDNEYS.

This paper deals with the effects of alcohol on the liver and kidneys, because diseases of these organs are so common, and because so many sufferers do not recognise the connection between **beer** drinking and liver and kidney troubles. Alcohol, in any form, in beer, wine or spirits, will injure these and other organs of the body, but I wish specially to emphasise the harmfulness of beer, because so many men and women seem to think it is a **harmless drink, a tonic, an aid to digestion,** and practically **next door to total abstinence.**

While dealing with these organs, let us not forget that the other organs of the body are affected in a similar way.

The liver is the largest gland in the body, and weighs about four pounds. It is also the most important gland of the body, because (1) the nature of its work; (2) its structure; and (3) its position. It consists of thousands of cells. There are three different types or groups of liver cells, and each group has its own special work. They all work on our food, digesting it, storing it, and changing it in various ways. Part of the duty of these cells is to secrete a fluid called bile, and to pour it into the upper part of the intestine. This bile is of great importance in the digestion of our food—specially fatty foods.

We shall now deal with the action of alcohol on the liver. When alcohol is taken in moderate quantities, it is almost entirely absorbed by the stomach. It is taken up by the blood-vessels of the stomach wall, and is consequently carried straight to the liver, because the liver is the first organ in the path of the absorbed alcohol. The late Sir Victor Horsley, whose death all Temperance workers must deplore, in considering the action of alcohol on the liver, divided the subject into (1) Its action on the blood-vessels, and (2) Its action on the liver cells, the cells proper, and the fibrous tissue cells. The blood-vessels of the liver—many of which are large—are rapidly dilated even by small doses of alcohol. They are simply gorged with blood, and this increases the weight of the liver, which causes discomfort. The sufferer wonders what is the matter, but in most

cases fails to recognise that the habit of taking alcohol is responsible for the miserable feeling. A change of diet may be tried, but no beneficial results will accrue while beer or any other alcoholic liquor is taken. It is a remarkable fact that this engorgement of the liver usually takes place in the early stages of beer drinking. Repeated doses render this dilation more and more permanent, and chronic congestion results. This is how alcohol affects the blood-vessels of the liver.

We will now deal with its action on the liver cells. As already pointed out, there are thousands of these, and they are of various kinds. Alcohol is a cell poison, but it does not affect all cells in the same way. Some of them rapidly succumb to the poison, while others are irritated in such a way that they increase in numbers. The cells which produce the bile, and store the starchy foods are those which are most easily damaged, and quickly succumb to the alcohol poison. The first change which they undergo, is a swelling which enlarges the whole liver. If drinking is continued, fatty degeneration of the tissues sets in. When this takes place the liver is incapable of doing its work.

The action of alcohol on the fibrous tissue cells is different. They are not so easily damaged, i.e., they do not so readily succumb to the poison—alcohol. The alcohol, which poisons the liver cells proper, simply irritates the fibrous tissue cells, and causes them to multiply. It is the same with cells as with people. Some cannot stand a rough life, while others take to it naturally, and thrive upon it. The cells which secrete the bile, and store the starchy foods, succumb to the poison more or less quickly, according to the amount taken, while the fibrous tissue cells are irritated and increase in numbers. This increase of tissue cells is not beneficial. For one thing, "scar tissue" as it is called, is not good working tissue; besides, it not only fills up the space formerly occupied by the liver cells which have succumbed to the alcohol, but also pushes aside and destroys other liver cells. One can readily understand that if the working cells are destroyed, and the space filled up with "scar tissue," the healthy activities of the liver must be seriously impaired. Another fact must be emphasised, viz., that it is small

quantities of alcohol constantly filtering through the liver, which causes these changes. Diseases of the liver occur far more frequently as a result of continued taking of small doses of alcohol, than indulging more freely at intervals. A man who gets drunk at intervals, say, on a Saturday night, or at holiday time, will not injure his organs nearly so much as one who daily takes his glass of beer, or something stronger, and who may never be drunk in his life.

The work of the kidneys is closely allied to that of the liver. There are two, and weigh about four ounces each. Though small, they are most important organs. They have two special duties to perform. One is to remove from the blood the waste liquid matter, the retention of which would interfere with the vitality of the various organs of the body. They act as filters, ridding the blood of urea and uric acid. It is absolutely essential to health that these waste products should be rapidly eliminated from the system. It is equally the duty of the kidneys to prevent the useful constituents of the blood from passing away from that fluid. The most important of these is albumen, which exists nearly pure in the serum of the blood, as it does in the white of an egg. A healthy kidney will not permit the albumen to escape from the blood. Albumenuria is sometimes present even before actual disease of the kidney takes place. Men are often refused life insurance because of this, so it is quite clear that the escape of the albumen is a very serious matter. Whatever interferes with the two-fold work of the kidneys must be avoided. And we have abundant testimony from medical men that alcohol injures the kidneys and interferes disastrously with their functions. The structure of the kidneys suffers in much the same way as the liver. Fatty degeneration and increase of fibrous tissue result from the habitual use of alcohol, even in moderate quantities. The vessels lose their elasticity and power of contraction. These conditions interfere with the work of the kidneys, and the body becomes subject to "rheumatic" pains, mental depression, and other symptoms of impaired digestion. This is followed by kidney disease in one of its various forms, frequently diabetes or Bright's disease, which in its chronic form is incurable.