

picked up by those small structures called *villi*, which proceed from below the mucous surface of the stomach.

Thus we see that which ever way the alcohol is introduced, it enters the blood. As all the modes of introduction, except the latter, are only used experimentally, we will not consider them more fully but proceed to exemplify the effects upon the system when taken as a fluid by the mouth.

As it enters the blood it becomes mixed with the water, which it readily diffuses through it, then comes in contact with the other constituent parts; with the fibrine, that substance which clots or coagulates when blood is drawn; with the albumen, the salts, the fatty matters, and lastly with those minute round bodies called corpuscles or blood globules—of which there are two kinds, red and white. The red give the color to the blood and occupy the centre of the stream; the white are near the outside of the vessels and move less quickly.

The red perform the most important functions in the economy—they absorb the oxygen which we inhale and carry it to the extreme tissues of the body; they also absorb the carbonic acid gas on the extreme tissues, and bring the gas back to the lungs to be exchanged for oxygen,—in fact they are the vital instruments of the circulation.

Alcohol, when in contact with these corpuscles or cells, cause them to run too closely together, and to adhere in rolls; it may modify their outline, making the smooth, defined edge irregular or crenate, or even starlike; it may make it oval or truncated in form, in fact hardly recognizable. All these changes are due to the action of the spirit on the water in the corpuscles. During every stage of modification of the corpuscles their function to absorb the fixed gases is impaired, and when the aggregation of the cells in masses is great, other difficulties arise—for the cells unite together and pass less easily through the minute blood vessels of the lungs and general circulation, and impede the current, by which local injury is produced. This is the only point that we have time to touch upon in respect to the physical action of alcohol upon the blood, and shall now proceed to describe the different stages of the action of alcohol up to the poisoning point.