

at other times it is low, and the tone or tension of the blood-vessels must vary accordingly.

Now the affinity of alcohol for the brain centres is shown very forcibly in this effect upon these nerve cells. It shocks or stuns the vaso-motor system. The control of the vessels is relaxed and they at once dilate. The heightened color of the face, the sense of warmth in the skin, and the quickening heart-beat are all the immediate and direct result of the temporary paralysis of the vaso-motor centres by the alcoholic poison, due to the lessened resistance in the blood-vessels and their dilation or widening. The flow is lessened in speed because of the widening of the channels, but this is counteracted to some extent by the increased rapidity of the heart-beats.

The alleged "stimulation" of the brain centres by alcohol is nothing more nor less than the increased brain-cell activity due to the increased quantity of blood, and therefore the increased supply of oxygen that attends this vascular dilation. All the centres enjoy simultaneously this so-called "stimulation," because of the vessel of the brain dilating equally.

The "stimulation" is very evanescent, however, because the extra supply of oxygen rapidly gets used up and cannot be as rapidly restored as under strictly normal conditions. But because the higher brain centres are paralyzed first and paralyzed most, the centres below enjoy a heightened "stimulation" and consequent recovery for some considerable time subsequent to the deadening of the moral or controlling centres. In other words, the paralysis of the higher brain centres is coincident with the "stimulation" of all the centres below, or, to put it in terms of our common daily experience, self-restraint is weakened while the lower impulses and desires are excited.

Ideas

There are other cells and cell groups or brain centres which when they "function" do not result in movement. They have connections with other cells that do, and through these cells they might operate if muscle movement is required. These cells have to do with the higher oper-

ations of the brain. They are the thinking cells, the memory cells, the controlling, inhibiting cells. They have to do with ideas, thoughts, reflections. They are the cell centres concerned in the higher operations of the mind. These centres are largely peculiar to the human subject and serve to differentiate man from the lower animals. They are the home of the spiritual force and are the Holy of Holies in this earthly Temple of God.

Order of Development

These brain-cell centres have a definite order of growth—a definite sequence of appearance in the race, and a definite sequence of appearance in the individual whose development is an epitome of the development of the race to which he belongs.

These centres have lower and higher functions which correspond to early and late development both in the individual (ontogenetic) development and racial (phylogenetic) development. The lower orders of brain centres appear first in the history of the race, and first also in the history of the individual, whose history from his unicellular start in his maternal cradle on his own life journey corresponds to the unicellular start of the race aeons of ages ago. Let us consider the order of development of brain cells in an individual child.

The development of every organ and muscle of the body is coincident with the development of a nerve-cell centre in the brain, which centre presides over that organ or muscle, and the growth in size and complexity of each brain centre goes on pari passu with the growth in size and complexity of the organs and muscles over which those centres preside.

The first organ to appear in the pre-natal infant is a little S-shaped heart in the centre of the body, and this is the first organ to function or start work. It begins its baby pulsations while the brain centre is being constructed, from which it will soon receive its messages of direction and control. The next organ to function or work in the order of development is the lungs, and these start on their career of vital activity immediately after birth and obey the brain centres