

the Association of Ideas. This is the root and branch of the whole structure psychological, and therefore, if mind has a physical basis, we should expect to meet with some very general and essential feature of ganglionic action answering to this very general and essential feature of mental action. And this, beyond question, we do find.

For the association of ideas is merely a development of simple memory. A mental impression, image, memory, or idea having once occurred in juxtaposition with another, not only are the two memories remembered, but also the fact of their juxtaposition, so that when one memory or idea is aroused, the other is aroused likewise. Let us, then, look at the matter a little more closely, in order to see how this great principle of psychology may receive its explanation, so far as the collateral principle of physiology is concerned.

There can be no doubt that in the complex structure of the cerebral hemispheres one nervous arc (*i.e.*, fibres, cells, and fibres) is connected with another nervous arc, and this with another almost *ad infinitum*; and there can be equally little doubt that processes of thought are accompanied by nervous discharges taking place, now in this arc, and now in that one, according as the group of nerve-cells in each arc is excited to discharge its influence by receiving a discharge from some of the other nerve-arcs with which it is united. Again, as we have seen, it is practically certain that the more frequently a nervous discharge takes place through a given group of nervous arcs, the more easy will it be for subsequent discharges to take place along the same routes—these routes having been thus rendered more permeable to the passage of subsequent discharges. And now a very little reflection will show that in this physiological principle we no doubt have the objective side of the psychological principle of the association of ideas. For it may be granted that a series of discharges taking place through the same group of nervous arcs will always be attended with the occurrence of the same series of ideas; and it may be further granted that the previous passage of a series of discharges through any group of nervous arcs, by making the route more permeable, will have the effect of making subsequent discharges pursue the same course when started from the same origin. And if these two propositions be granted, it follows that the tendency of ideas to *recur* in the same order as that in which they