1884.] PHYSICAL BASIS OF MENTAL OPERATIONS.

is capable of calling up, as if by magic, an experience of the past. I hear a melody, and again I am on board ship. I see the harbor with its multitude of plying steamers, its forest of masts. I see the surging throng on the dock, bags, trunks, tinware, mattresses, a stream of persons passing the gangplank, embraces, tears! I recollect my own emotion, and become aware that the melody I have just heard, and which has called up in my mind this picture, is the same that was being played by the band on board the steamer which, some years ago, left the dock at Hoboken with myself on board.

How natural the explanation. The vivid perception of the melody, represented by molecular vibrations of brain molecules, by sympathy excites those of the visual memory, stored on the occasion when the melody was first heard.

The intricate maze of nerve tracks, crossing and recrossing, connecting visual and auditory memory, the memory of taste, odor and general sensibility, binding into a whole all of man's conscious existence, all but baffle our imagination. If the analogy were not altogether too coarse, we might liken the brain to a forest, in which the trunks and branches represent the nerve tracks, the trembling leaves the differentiated brain molecules, the kind of tree, whether oak, pine or magnolia, the mechanism corresponding to the perception and memory of the sensations conveyed to the brain by the different senses; finally, the ground on which these trees grow might represent to us the link of intercommunication between them, and corresponding to the band of fibres which lies at the base of the brain. Sever, lop off any of these branches, and the memory, and hence the imagination corresponding to them, disappears. Let a hurricane of emotion sweep through this forest, twisting, prostrating trees and branches, tangling inextricably the net of nerve tracks, and we have insanity. But let a gentle breeze strike any one tree or branch, and we see its glistening leaves tremble, more vigorously perhaps on one branch of one limb than on any other branch of the same limb. The gentle breeze so carefully directed may symbolize for us the stream of energy directed

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