

Author unknown. Professor Gates's Psycho-physiology." *Modern Medical Science (and The Sanitary Era)*; date unknown.

PROFESSOR GATES'S PSYCHO-PHYSIOLOGY.

We continue excerpts from the researches of Prof. Elmer Gates, now unfolding in successive numbers of the New York *Medical Times*.

I found that in the seeing-areas of the cortex of an animal which had been confined for one year in a darkened room, there was no further appreciable development of brain-cells than was to be found in an animal of the same species at the moment of birth; and in one that for the first year of its life had been trained in the extraordinary use of the seeing-functions, there was a far greater number of brain cells than were to be found in an untrained animal of the same age and species that had not been deprived of light, and these brain-cells were larger and more complex. By this special process of mind-training, I succeeded, not merely in giving that animal more brain-cells in that part of its brain than any individual of that species ever had before, but I also gave it more mind, in that particular direction, than any member of that species had ever before possessed. Similar trainings with other functions corroborated these conclusions, and the experiments teach what is the functional localization in the brain of any mental faculty and demonstrate that each conscious mental experience creates in such part of the brain a definite chemical change and structural embodiment of that experience, the refunctioning of that structure being essential to the remembering of that experience.

I thus found that mind-activities create brain-structures; and that each kind of mind-activities creates in some definite part of the brain its own kind of structure. I found also that in cells the mind creates structural changes, and concluded that the cellular functions in the human body are psychological functions.

The medical aspect of these conclusions is obvious. By a proper regulation of the environmental forces and bodily structures, the mind-activities of the cells of an animal body can be appropriately modified, and so can that consensus of the psychic activities of all of the cells of the body called the personal mind of the animal.

Environmental conditions and the social anatomy of social groups of creatures were varied to determine what are concomitant changes in the group-mentation of these colonies or societies.

I can show that in every variation of the social anatomy of any group of people or animals, there occurs a corresponding variation in their group-mentation, which also affects the mentation of the individuals composing that group; and that every environmental change affects the group-mentation. The group-anatomy of an ant-colony, *e.g.*, is varied if they are supplied with slaves, or if the queen be removed, or if a bee-hive be deprived of its workers, etc. A social group of creatures, like a herd or tribe or mob, have a mental activity different from that of the individuals which compose it, and that is partly what I mean by group-mentation. Its dim beginnings are seen in the *esprit du corps*, in the class spirit of a college, in the enthusiasm of an audience in social belligerent revolutions, etc. Here are the dim beginnings of a higher hygiene and cure. Social or group mentation can aid in effecting desired changes in the individual mind, and these changes in the individual mind mean physiological changes also.