

THE WAY WE THINK

By

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*A Primer of
Education and Psychotherapy
By Reeducation*



CHICAGO

OCCULT PUBLISHING COMPANY

1928

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**FIRST EDITION
PRINTED BY OCCULT PRESS OF CHICAGO**

E. 158.4
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FOREWORD

THE education that is worthy the name and the diploma, first of all develops sufficiency of brain control in the healthy young man and woman. The psychotherapy that keeps its promise to restore health to the psychasthenes, the young or old men and women who are sick or sickly because they do not control the brain, does so only when it *tells* and *shows* them *how* to overcome their insufficiency of brain control.

The real science and art of education and psychotherapy by reeducation arrives and achieves after research exposes to bedrock the foundations of *the way we think*. Modern psychology reveals nothing more fundamental than this: The mind activity, and the functioning of the brain caused thereby, synchronize perfectly in the healthy man or woman.

Hitherto, educators have had no simple direct physical means of knowing when this synchronism habitually obtains and prevails in the high school, college and university student. Likewise, psychotherapists have had no reliable physical test to prove that this synchronism of mind and brain activity is lacking in psychasthenic men and women or that it is being restored by the mental treatment they propose and profess to give in such cases.

The primer of education and psychotherapy by *reeducation* is timely, useful and usable, if it makes plain as A B C the rudiments of the technique that *demonstrates physically the way we think* when we are well, the way we think that makes and keeps us psychasthenic, and the way we think that cures us of psychasthenia.

—H. Travers Cole, M. D.

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BOOK I

THE WAY WE THINK

THE WAY WE THINK WHEN WE ARE WELL THE BRAIN CONTROLLED

"It is not from space that I must seek my dignity, but in the regulation of my thought. The possession of worlds would not give me more than this; with space the universe encloses and engulfs me, but with thought I enclose the universe."

—PASCAL.

THINKING THE PROOF THAT WE ARE ALIVE

IT WAS DESCARTES, the French philosopher, writing his books in Latin, as was the custom of scholars in his day, who reduced the riddle of human being to the following formula of so few and such simple terms:

"Cogito, ergo sum."—"I think, therefore I am."

Man thinks because he embodies mind.

In this connection it is interesting and instructive to note that the words *man* and *mind* mean the very same thing in the deepest roots of language. This fact as a spotlight shows the healthy man or woman formed and functioning as a thinker. Descartes' famous formula is even more like a penetrating instrument of precision, the very words a set of high-power lenses through which it is easy to see and be sure, that rather than anything else such as the coursing of the blood through the capillaries or the exchange of gases in breathing or the chemical processes of the digestion and assimilation of food—

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none of which we are in the least aware of when we are well or sick—*thinking* is the prime positive proof to us as individuals that we are actually alive, that we really exist.

THINKING INSEPARABLE FROM THE BRAIN

PHYSIOLOGISTS, psychologists and metaphysicians, when they let mere speculation take them too far afield to find *what* it is that *thinks*, are very apt to overlook cerebration, the working of the brain itself incident to thinking, concomitant with consciousness. But no matter how far the investigation goes from without or from within as regards what thinking is or does, it comes at last to brain tissue, the silver screen on which flash and fade the moving pictures we call our thoughts. Almost from day to day it becomes more of a scientific certainty that the brain is merely the instrument the thinker uses to receive and record, to transform and transmit thought. It is not as the thoroughgoing materialists would have us believe, that the brain originates thought any more than it is that the heart makes the blood it jets into the arteries. It is the study of the mechanism of the brain itself and the mechanics of the process and progress of our thinking that convinces the serious investigator that thinking, the immanent and preeminent phenomenon of our being is inseparable and inseparable from the brain.

WHAT IT MEANS TO THINK

WHILE words fail to express all that takes place when we are thinking, they serve to outline clearly the way we think. In regard to the way we

think when we are well, it may be said that every moment of the waking hours the healthy man or woman, the normal thinker, turns what is in the mind into distinct sensations, definite ideas and decisive acts. This becoming and being conscious, fully conscious, of normal sensations, ideas and acts is exactly what it means to think. Before we are through with these primer studies of the way we think, it will have been brought to undoubtable physical demonstration, that this statement although it does not exhaustively describe or define thinking, nevertheless, not only aims but arrives at something very useful and usable for the purposes of education and psychotherapy by reeducation.

SUFFICIENCY AND INSUFFICIENCY OF BRAIN CONTROL

WE believe much and know very little about what the human adult mind is in and of itself; and we just begin to realize that the human adult brain is almost infinitely complex in structure and function as the research of S. Ramon y Cajal reveals. However, we get away at once from the vagaries and come to the verities of the way we think when we are well, by taking the very practical view to begin with, that in thinking, the chief activity of our being, mind and brain combine as one. This does not mean that the mind is the brain or that the brain is the mind, but that the activities of the mind and the functionings of the brain *synchronize* exactly in the healthy man or woman. In other words, as far as normal thinking goes, what is in the mind is at the same time in the brain, and vice versa.

In health our thinking is not forced upon us. The healthy man or woman instantly and constantly adapts the mind and adjusts the brain to the work of thinking. The normal thinker gives the whole of attention to bringing and keeping normal sensations, ideas and acts in the field of consciousness as a microscopist by patiently turning the adjusting screw holds the focus of the lenses on a living, moving micro-organism. This element of control is the outstanding feature of normal thinking. The first aim of education should be to develop in young men and women the ability to focus mind and brain upon normal sensations, ideas and acts. From the premise that thinking is inseparable and inseparable from the brain, it follows that control of thinking and control of the brain is the same thing. It is only when the subjective and the objective, the mind and brain sides of thinking coincide perfectly, that anyone can be said to have sufficiency of brain control. In order that the phrase, *sufficiency of brain control*, may take and keep its place in the science and art of education and psychotherapy by reeducation, it must cease to be a matter of mere theory and become one of indisputable physical proof.

Physiologists and pathologists following the far-reaching techniques of physics, chemistry, electricity and microscopy have devised reliable physical tests for the sufficiency and the insufficiency of the functions of almost every tissue and organ of the living human body in health or disease.

The physician compares the results of these tests in the given case and thus learns with almost mathematical certainty just how well or how sick any one is.

The psychologists, than whom there are no more picturesque and promising figures in the world of science today, backed by extensive and expensive equipment, nevertheless fail fundamentally in that as yet they have no simple direct physical means by which to contact the living adult human brain when thinking is or is not going on the way it should. This is not saying that the neurologist has no means of knowing when the brain as an organ is sound or unsound, or that the intelligence, speed, accuracy and many other mental tests used by psychiatrists, psychologists and educators are of no value, but it is saying that at best these tests leave altogether too much to the imagination as regards the physical reality of sufficiency and insufficiency of brain control. In consequence with teachers of all kinds it still remains merely a matter of inference that students of high school age and on are learning or have learned to think, are developing or have developed sufficiency of brain control.

Every year many high school, college and university students have the sad experience of a gradual or sudden fogging of the mind and fagging of the body. Even experienced teachers look upon this illness as a result of almost everything except defects in the methods of education. As a matter of fact, these young men and women labor under what for them is an undigested and indigestible gorge of learning and they are in a fair way to become life long invalids, semi- or complete. The family doctor sees little in these cases but the evidences of a slight anemia and prescribes food and medicine to enrich the blood. Later the oculist finds eye-strain and fits glasses to relieve the peculiarly persistent pains in the head and

other parts of the body. At last the nerve-specialist gives out the diagnosis: Neurasthenia (nervous prostration) from overstudy. Then he orders rest, diet, massage, electricity, tonics or sedatives and optimism for the relief and cure of the patient.

Here we get a glimpse of a disease the diagnosis of which is not very satisfactory to most physicians and the results of treatment not at all satisfactory to most of those afflicted by it. Later we shall see that this disease makes wretched the lives of millions upon millions of men and women past school age, that instead of being the results of overstudy it is due to not studying, not thinking the right way, that insufficiency of brain control causes and characterizes it, that education of the right kind prevents it and that psychotherapy by reeducation cures it. As the physicians of the Dark and Middle Ages treated the sick without an exact knowledge of the physical signs of health or disease to guide them, so the educators and reeducators of today try to make and remake thinkers without knowing the physical indications of sufficiency or insufficiency of brain control as they relate to health or disease.

Anatomists, physiologists and psychologists have fairly hived facts regarding the structure and function of the human brain. Yet we have no such vivid and valid idea of the activity of the living adult human brain in a process of thinking, in a state of consciousness such as we have of the heart-beats and the lung-movements. Most of what we claim to know about the live human adult brain when the centers of sensation, ideation and action are functioning, is merely a deduction based on findings, in vivisectioned animal or postmortemed human brains. If

we go on educating and reeducating men and women as we have to date, that is without a direct positive physical sign of the presence and activity of the brain as thinking is or is not going on the way it should, no teacher will ever be able to say to a student: "You have developed sufficiency of brain control," and no physician, than whom no one in the world should be as able to cope with the disease mentioned above, will ever dare say to a patient: "Insufficiency of brain control made and keeps you sick."

THE PHYSICAL SIGN OF THINKING SUFFICIENCY OF BRAIN CONTROL

THE path science takes from what at first is obscure to what at last becomes obvious, is often long, winding and wearying. Even the most serious seekers seldom find all at once what they are looking for. It is not a little disappointing, however that scientists relying on the five senses to the limit for guidance to and in all things, failed to find somewhere at the surface of the living normal adult human body, some direct physical indication of the functioning of the brain caused by thinking, normal or abnormal, an indication perceptible to at least one sense. Although aided by instruments of precision that resemble and rival in delicacy of construction and refinement of operation the very mechanisms of the living human body, none of the anatomists, physiologists, or pathologists, who had so much to do with bringing to light the structures and functions of the human brain, normal and abnormal, found a physical sign of thinking that compares in the slightest particular with the direct physical signs of heart or

lung functioning in health or disease. It remained for a physician, a clinician, unaided excepted by the unique use of the lowly but trained sense of touch to tell and show us how we can know "offhand" and "on the spot" when men or women are thinking or not thinking the way they should.

In 1910, in his book written and published in French under the title—*Traitement des Psychoneuroses par la re education du Controle Cerebrale*—Dr. Roger Vittoz of Lausanne, very modestly announced his discovery of the phenomena of brain pulsation. The two passages very much to the point, *Brooke* translates into English as follows: "We have found contrary to the opinions generally accepted, that after a certain amount of training the physician's hand on the patient's forehead gives him sufficiently exact indications of the workings of the latter's brain."

"This statement will no doubt be received with great scepticism, for it is difficult to believe that the movement of the brain can be noticed through the skull; although we will not try to explain it, all that can be said is that undoubtedly there is a rebound of the brain that can be felt by the hand. There is a series of pulsations producing the effects of waves or peculiar vibrations."

Beyond doubt here is a great basic truth, for the unearthing of which psychologists and physicians will ever be as much in debt to *Vittoz* as physicists are to Newton for the formulation of the laws of gravity. Standing alone these brief descriptions of brain pulsation may not appeal at all to the ordinary reader. Even the medical man may let them go with the mental comment: "Just an enthusiast's guess about something no one knows anything about."

The phenomena of brain pulsation in health and disease invite fair-minded and pains-taking investigation for the reason that educators and physicians as reeducators are very much in need of something by which they can be sure, that the thinkers with whom they have to deal, fly the colors of sufficiency or insufficiency of brain control. Academic and cult writers have flooded the world with books about mind control and nerve control. What is the basis for these writings? Mostly theory, inference, and suggestibility, which latter in the last analysis, is the fine genius *most* of us have for believing much that isn't so. As a matter of fact in the phenomena of brain-pulsation, inhere physically demonstrable values and verities for education and reeducation beyond anything hitherto known. Before the means and methods of education and reeducation in accord with the facts of brain pulsation can avail anyone who would gain or regain sufficiency of brain control, the attempt must be made as in this primer of education and psychotherapy by reeducation, to reduce the phenomenon of brain pulsation, normal and abnormal, to the simplest terms of anatomy, physiology, psychology, pathology, diagnosis and therapy.

The medical aspect of education and reeducation is inescapable for the simple reason that it is now possible to prove *physically* that the right kind of education develops sufficiency of brain control and prevents the sickness caused by insufficiency of brain control. Furthermore, it is also possible now to demonstrate physically, that psychotherapy by *re-education* cures the sickness caused by insufficiency of brain control. We can no longer avoid the issue that education and reeducation should be supervised

by teachers and physicians who know the physical sign that the instruction actually reaches and remains in the mind of the pupil or the patient. Educators and physicians should be the very first ones to welcome this innovation, even tho it proves to be the rhythmic pulsation of the brain discovered by Vittoz and *named* here and now the *physical sign* of the sufficiency of brain control.

THE NEGLECTED CHAPTER IN PHYSIOLOGY

IT has been known for a long time that in health the mode of the activity of all the great internal organs of the human body—the noble organs as the old time authorities called them—is rhythmic motion, movement or pulsation. Of course, the heart and lungs are the very striking examples of rhythmically functioning organs. A review of the neglected chapter in physiology, stresses the fact that the functioning of the human brain is not an exception to the law of organic rhythm.

Many a young mother has been surprised and alarmed at seeing or feeling two throbbing places on the top of her baby's head. These pulsations occur in what are called commonly the "soft spots" and technically the anterior and posterior fontanelles, the bones of the infant skull not being fully grown together at the time of birth. The family doctor tells this mother that what she sees and feels is due to the circulation of the blood, which is true as far as it goes and introduces in general the subject of brain movement, motion or pulsation.

Modern physiologists say almost nothing about any kind of motion, movement or pulsation of the

animal or the human brain. Sir Michael Foster (Professor of Physiology, Cambridge University) was the exception and explicit in this particular. He said: "When the brain of a living mammal is exposed by the removal of the skull-cap a rhythmic rise and fall of the cerebral mass, a pulsation of the brain quite distinct from the movements caused by the pulsations in the arteries is observed; and upon examination it will be found that these movements are synchronous with the respiratory movements, the brain rising up during expiration and sinking during inspiration. They disappear when the arteries going to the brain are tied or when the venous sinuses of the dura mater are laid open so as to admit of a free escape of venous blood. They evidently arise from the expiratory movements in some way hindering and the inspiratory movements in some way assisting the return of blood from the brain."

Again he said: "The volume of the brain as determined by the amount of blood present in it is continuously undergoing changes brought about by various causes. Each heart beat makes itself visible on the cerebral as on the renal plethysmographic tracing and as we have seen in speaking of respiration, the diminution of pressure in the great veins in the neck during inspiration leads to shrinking and the reverse change during expiration to a swelling of the brain. The plethysmograph also shows variations larger and slower than the respiratory undulations and brought about by various causes such as the position of the head in relation to the trunk, the movements of the limbs, modifications of the respiratory movements and apparently phases of the activity of the brain itself as in waking and sleeping; undulations

corresponding to the Traube-Hering variations of blood pressure may not infrequently be observed."

Professors Frank and Salathe (College of France) and Professor Mosso (University of Turin) by means of the kymograph made records of the pulsations that occur in the "soft spots" of infant skulls and openings made in adult skulls by injury, disease and surgery. In the latter cases it was found that in addition to the pulsations caused by the heartbeats and lung movements, there were other pulsations, veritable regular swellings and shrinkings of the substance of the brain itself, when these individuals engaged in deliberate thinking, solving mathematical problems, serious reading and so on.

The quotations from Foster and the references to the experimental findings of Frank, Salathe and Mosso make it plain that there are at least three motions, movements or pulsations of the normal living adult human brain, caused respectively by the beats of the heart, the movements of the lungs, and thinking. It is very evident that the living adult human brain is not a static organ. It does not lie still in the skull. The brain of the normal thinker is animate, active, dynamic. It not only bounds and rebounds with every beat of the heart, rises and falls inversely to the intake and output of the breath, but its very substance stiffens and slackens in every process of thinking, in every change of consciousness.

FEELING IN ON THE BRAIN

NONE of the movements of the brain considered so far can be seen or felt except under the given conditions. The pulsation seen or felt in the anterior

or posterior fontanelles of the infant skull, when counted correspond with the pulse and breath rates of the particular baby. If the movements of the human brain connected with circulation and respiration could be felt through the walls of the intact adult skull, the normal human skull, we should find them strictly synchronous with the heartbeats and lung movements of the given individual. Even then we would not have come upon the phenomenon of brain pulsation caused by thinking. If the motions of the brain observed and recorded by Frank, Salathe and Mosso and said by them to be due to thinking, could be felt through the wall of the normal adult skull we should find that they do not coincide in rate or rhythm with the heartbeats or lung movements of the given person.. A record of those motions made through artificial openings in the adult skull, shows a series of waves running faster than the lung movements and slower than the heartbeats of the subject. Psychologists know a great deal about the time it takes to think, to become conscious of a normal sensation, idea or act, and none of them would admit that thinking goes on at any such fixed speed as this particular brain motion seems to indicate. All that any physiologist or psychologist would admit in regard to what this movement of the brain signifies is that there is more blood in the whole or parts of the brain when we are thinking than when we are mentally quiet, and a sort of secondary circulatory movement of the brain is kept up.

Udoubtedly the movements of the normal adult human brain observed by scientists so far, are due to the beats of the heart, the expansions and contractions of the lungs, or to modifications of the blood-

flow and breathing, but none of these brain motions can be felt by the hand through the wall of the normal adult skull. To date observation and experiment have taken into account all the factors in brain movements except the functioning of the three or four hundred millions of brain cells and the proportionate millions of nerve fiber-ends massed to form the normal adult human brain. It would be strange, indeed, if the functioning of these cells and fibers, the ultimate structural units of the brain, were not subject to the great law of organic rhythm. Here at last we come to the very ground from which must spring and on which must stand the rhythmic pulsation of the brain caused and characterized by normal thinking, which is the habitual complete consciousness of normal sensations, ideas and acts. It is this pulsation of the brain that can be felt by the hand through the wall of the normal adult human skull and this pulsation of the brain is the basis of all that follows.

Doubt, that there is a rhythmic pulsation of the brain easily felt by the trained hand laid on the forehead and that this pulsation of the brain is the physical sign of normal thinking, the physical sign of sufficiency of brain control, is not at all well founded. No one has to take the word of a medical savant even for this. Anyone can learn by feeling in on the brain to receive the signal of sufficiency of brain control as the thinker broadcasts it through the substance of the brain, the membranes, the bone, and the skin that encases it.

A good beginning in this direction may be made as follows:

Let a healthy adult, young or old, sit in a quiet

place. Then lay either hand quite firmly on the forehead covering the great prominence on each side. After a little while a series of faint thrills, thrusts, beats or pulsations will be felt. The moment one becomes fully conscious of some normal sensation, idea or act, what the hand feels is very much more rhythmic and energetic than before. By this simple experiment, varied as fancy or ingenuity prompts, anyone can be as sure by the sense of touch that the brain is working rhythmically in the skull when we are thinking as by the sense of hearing the physician is certain that the lungs expand and contract regularly in the chest when we are breathing naturally.

Physicians may argue that the "personal equation" plays too great a part in the above experiments, that the sense of touch at best is very unreliable and that all that anyone can possibly feel by laying the hand on the forehead is the pulsation of the arteries in the hand itself or the forehead or rhythmic twitchings of the scalp muscle. Before anyone carries such objections to the point of absurdity, let him bear in mind that it is the personal equation in the true sense that makes the work of the physician worth while to himself and others. Furthermore, as a matter of fact at the present stage of medical practice the report of the senses in one way or another is all we have to rely on for the purposes of diagnosis and treatment. At the bedside and in the consulting room physicians trust their senses to the limit. Why should they refuse to do the same in the study of brain pulsation, normal or abnormal?

The sense of touch being so highly developed in the hands of physicians, eminently fits them to perceive and prove to their satisfaction that there are pulsa-

tions of the brain incidental to the way we think when we are well. Scepticism or indifference in this matter is indefensible. The verdict of the uninspired obstructionist is always a crime, the crime of condemning a thing without investigating it. In this instance it is not a question of anyone having to lead or join a forlorn hope to rescue from obscurity or obloquy the fact that there are pulsations of the brain that correspond with and are characteristic of the normal process of thinking, but it is simply a question of having common and scientific sense enough to try it out in principle and practice. Inexperience may lead anyone to mistake the pulsations of the arteries in the hand and forehead for pulsations of the brain but the rate of such pulsations shows the ones that are due to the beats of the heart and the ones that are due to the beats of the brain.

THE CHARACTER OF NORMAL BRAIN PULSATION

IF the pulsations of the normal brain were always at a set rate and rhythm, it would simplify very much the means and methods of education and re-education. Such is not the case. There are varieties and variations of brain pulsation that must be taken into account.

For the purpose of education and psychotherapy by reeducation, it is necessary to find a standard with which to compare all the variants of brain pulsation, normal and abnormal. After testing many healthy adult human brains many times, the investigator becomes sure that there is a pulsation of the brain that can be taken as the standard and that all the others are similar to or modifications of it. While the

trained and experienced sense of touch easily detects any pulsation of the sufficiently or the insufficiently controlled brain, it is not as easy to catch the controlled brain in the phase of its activity that reveals its basic pulsation. However, patient observers have have their reward.

Thinking falls to the zero mark in perfect natural sleep. The brain of the sound sleeper is pulsationless as far as thinking is concerned. However, many times during the waking hours, even the most active brain momentarily sinks, as far as thinking goes, to an all but negative condition. These are golden moments for the investigator to observe the pulsation of the brain at its lowest mark. Then one is able to feel and report a pulsation of the brain that is rhythmic and the rate of which is usually about one half the number of the heartbeats and twice the number of the lung movements in the given individual. Ideally this statement reduces to the numbers 72, 18 and 36, respectively the rates *per minute* of the pulse, the breathing and the pulsation of the brain just before sleep stops the thinking of the healthy man or woman. The rhythmic pulsation of the brain at this rate is met with often enough to justify its adoption as the standard of brain pulsation.

From this level the pulsation of the healthy—the controlled brain—mounts to more rapid rhythms and rates as thinking energizes the mechanisms of sensation, idea and act. It is doubtful if the pulsation of the normal brain, caused by thinking, ever falls much below 36 or rises much above 130 per minute. Although the time and number elements that always go along with the normal pulsation of the brain are interesting and important, it is the

rhythm, the regularity, the steadiness of the pulsation that means so much to the teacher and the physician. The rhythmic pulsation of the brain is the key to the way we think when we are well. The rhythmic character of the pulsation of the brain is the physical sign of normal thinking, and that the thinker has sufficiency of brain control.

THE CAUSE OF NORMAL BRAIN PULSATION

THE physiologist exhibits the living adult human brain bounding with the inrushes of red blood, shrinking and swelling with the intake and output of the breath and the blue blood draining away from it. At best these responses and correspondences of brain movements to the cycles of heartbeat and lung movement are but glimpses of the nutritive, the vegetative functions that maintain the very existence of the brain. The pulsation of the brain that thinking causes is independent of heartbeat and lung movement.

Teachers and physicians should give students seeking education and patients needing reeducation as clear a picture as possible of the activity of the controlled brain. As it is, the literature of education and medicine is not overburdened with descriptions of the functioning of the brain caused by thinking. Too ambitious for the results of education and psychotherapy, we have paid more attention to the dynamics than to the mechanics of thinking. We have tried to jump instead of using the stepping stones to cross the stream of culture. Whatever dynamic is in or back of it, a mechanism mediates our thinking. The brain is the central part of that

mechanism and releases thought as a dynamo releases electricity. Revolution is the mode of the action of the dynamo, and rhythmic pulsation is the mode of the activity of the brain that the thinker controls. The rhythmic pulsation of the brain is not thinking but the effect of thinking and is mechanical.

In order to understand the cause of normal brain pulsation it is helpful and enough to know to begin with, that brain-cells and nerve-fibers are the ultimate working parts of the mechanism of thinking. While thinking centers in the brain, as a matter of fact we think all over through and through wherever there is a nerve-cell and nerve-fiber in the body. Brain-cells give off two more fine short branches (dendrites). Nerve-fibers spring from the bodies of some brain-cells and their fine ends divide into fine short branchings (arborization). If the nerve-fibers that go out of the brain always went directly to some part of the body and if the nerve-fibers that come into the brain always came directly from some part of the body, the structure of our nervous system would be very simple. It is quite the rule, however, that the outgoing and incoming nerve-fibers reach the body or the brain by means of another interposed nerve-cell and nerve-fiber. This relay arrangement of nerve-cell and nerve-fiber insures unbroken conduction pathways from the brain to the body and from the body to the brain. The outstanding feature of the structure of our nervous system is the provision for the interlocking of the fine short branches of brain and nerve-cells with the fine short branchings of nerve-fiber ends.

This mechanical arrangement of brain and nerve cell branches and nerve-fiber end branchings, is the

very foundation of all that physiologists and psychologists have demonstrated in regard to the workings of the brain and nervous system in the living normal adult when thinking goes on, when the complete consciousness of sensation, idea and act obtains. The findings in this direction to date as to the mechanism and mechanics of thinking is to the effect that when we are well and awake, and therefore, aware of what is in our surroundings and what is in the mind, the short fine branches of the brain and nerve cells contact the branches of nearby brain and nerve cells and the branchings of nerve-fiber ends contact the branches of nearby brain or nerve cells. Thus, mechanically the brain and every other part of the nervous system is brought together and made associate structurally and coordinate functionally. This contact of brain and nerve-cell branches and nerve-fiber end branchings is the physical, the mechanical essential for thinking, for consciousness of normal sensations, ideas and acts.

The brain is more easily understood as a machine the thinker uses than as a highly complex organ mysteriously connected with thinking. The brain used by the thinker as it should be used is like an electrical device with all the switches on and the current running to and through every part of it. This analytic view of the tonic living adult human brain enables us to visualize and specify many things much to the point as to the cause of normal brain pulsation. The research work of physiologists and psychologists proves that when the thinker sleeps the brain-cell branches and the branchings of the nerve-fiber ends in the brain are not in contact—the brain falls to pieces—becomes dissociate, incorrelate, incoordinate.

"*No Thorofare. Closed for Rest and Repairs*" is the notice sound natural sleep posts in all the brain-cell areas and nerve-fiber tracts into, in and out of the brain. It is far from being known just what is taking place in the brain-cells and their associated nerve-fibers when we are awake or asleep, but it is well known that the branches of the brain cells and the branchings of the nerve-fiber ends in the brain move to make and break the contact that results in our being awake or asleep. The mechanics of being awake and thinking are the same. The mechanics of being asleep and not thinking are the same. During the hours we are awake there is every provision for and possibility of brain-cell contacting brain-cell and nerve-fiber end in varying degrees of pressure. The moment we wake up we begin to think. At first, the contact of brain-cell and nerve-fiber end is rather a loose one, but the instant the current of thinking picks up the load of distinct sensation, definite idea or decisive act, the contact is stressed, energized. We would have to leave it entirely to the imagination that the contacting of brain-cell and brain fiber-end finally stiffens and slackens the substance of the brain at regular intervals if it were not for the fact of the rhythmic pulsation of the brain that can be felt by the hand on the forehead when we are thinking.

THE MEANING OF NORMAL BRAIN PULSATION

IT is not many more than fifty years ago that university professors of psychology stopped arguing so much and began experimenting a little to find out exactly what thinking really is and does. Experi-

mental psychology so far has resulted mainly in the tabulation of the effects thinking produces in the body. Much that goes by the name psychology is merely an advanced physiology of the organs of sense, circulation, respiration, digestion and elimination. The laboratory psychologists have done a great work in proving beyond doubt that the process of thinking affects and involves the whole of the human body. Yet, not so very much has been demonstrated physically as to how the way we think when we are well affects and involves the brain, the organ of thought, the mechanism of consciousness—when sensations are experienced, when ideas are formed, when acts are willed.

The activity of the brain itself in the steps and stages of the process of normal thinking still calls for thorough investigation. We have had no simple, reliable physical test by which to know when the thinker registers a sensation, forms an idea or gives the impress and impetus of will to an act. Such would still be the case if it were not for the rhythmic pulsation of the brain, the only tangible thing literally at hand that directly connects thinking with the functioning of the brain.

When we are well the process and progress of our thinking is so instantaneous, sensations ideas and acts come and go so very swiftly that it has been almost impossible to find out or say anything worth while about what actually happens when we are conscious of a sensation, idea or act. Of course, it takes time to think even though only a small fraction of a second passes while we notice a sensation, focus an idea or carry out an act. It is this very instantaneity that has kept us from recognizing and realizing that

thinking is an activity that manifests itself mechanically through the brain and that the brain is a mill that grinds a great grist of sensations, ideas and acts between sleeps.

When we are well the pulsations of the brain thinking causes are rhythmic, regular, steady. This is only another way of saying that when we are well our sensations are distinct, our ideas are definite and our acts are decisive. No long argument is needed to make it clear that there is no such thing as thinking unless sensations are distinct, ideas definite and acts decisive. Given rhythmic pulsations of the brain it follows that the sensations, ideas and acts are distinct, definite, decisive, and vice versa. This is the gist of the way we think when we are well. The meaning then of rhythmic brain pulsation is that we are thinking normally, that we have sufficiency of brain control.

THE USE FOR BRAIN PULSATION

No one familiar with "the feel" of the pulsation of the controlled or the uncontrolled brain, pretends to know what anyone is thinking any more than the physician claims to know what anyone is thinking as he listens to the sounds of the healthy or the diseased heart. Nevertheless, the rhythmic and arrhythmic pulsations of the brain point unerringly to the way we think when we are well and to the way we think that so often makes and keeps us sick. The regular pulsation of the brain is the physical sign that the mind, which is the subjective brain, and the brain which is the objective mind, work together instantly and constantly when we are really thinking. The irregular pulsation of the brain is the physical sign

that the mind and the brain do not pull together habitually in the process of thinking.

As the human face expresses pleasure and pain so the pulsation of the brain, regular and irregular, objectifies sufficiency or insufficiency of brain control, the habitual complete or incomplete consciousness of normal sensations, ideas and acts. We may school the face to deceive as to what our inmost thoughts are, but the brain which is, so to speak, the face of the mind is always perfectly frank and cannot be made to function by any effort whatsoever to conceal the way we think when we are well or the way we think that makes and keeps us sick. Confucius asked: "How can a man be concealed?" The thinker—the man or woman in the course of education or in need of reeducation cannot conceal themselves, cannot hide the good or bad habits of thought, the sufficiency or insufficiency of brain control from a teacher or physician acquainted with the normal and abnormal pulsations of the brain.

The regular and irregular pulsations of the brain following all the ins and outs of the way we think are the physical signs that we do or do not think the way we should. As the lup-dup sound of the heart is a physical sign of the healthy heart, so the regular pulsation of the brain is a physical sign of a healthy, a controlled brain. There are sounds that are physical signs of heart disease and there are irregular pulsations of the brain that are physical signs of a disease caused by insufficiency of brain control. The regular and irregular pulsations of the brain being perceptible to the sense of touch and the physical signs of sufficiency and insufficiency of brain control, are eligible and entitled to take their places among

the other physical signs of health and disease approved by medical men the world over.

Doctors do not require people in their care to know and use the physical signs of health and disease as they know and use them. It is unnecessary for anyone gaining sufficiency of brain control to be able to feel the regular pulsations of the brain that indicate that progress is being made. It only makes matters worse for those who are sick because of insufficiency of brain control to be feeling the irregular pulsations of the brain for they are already morbid enough from often looking at the tongue, feeling the pulse, taking the temperature, et cetera. The chief concern of either a student or a patient should be to get into the way of controlling the brain, of acquiring the habit of becoming and being fully conscious of normal sensations, ideas and acts. Obviously, the knowledge of and the use for the regular and irregular pulsations of the brain as the physical signs of sufficiency and insufficiency of brain control falls to the lot of the educator and the reeducator, who, by all rights, should always be a physician.

EDUCATION

THE terms *physical education* and *education* mislead us, if we take the one to mean training of the body apart from the mind, and the other to mean training of the mind apart from the brain. After all it is thinking, the habitual full consciousness of normal sensations, ideas and acts, all else being equal, that directs and determines the fitting of the body and the fitness of the brain by training of any kind. It is not hard to realize then, that students under proper phys-

ical training think in the same way if not of the same things, as when taking other courses of study. In fact, there is no such thing as physical or mental training unless there is thinking of the sensations, ideas and acts pertaining thereto. No matter how smooth, swift and sure our automatism becomes in exercises, games or studies, thinking which implies and involves sufficiency of brain control, plays the leading part all the way through.

The noise and fury of the controversy over whether it is mind or brain that thinks, stops the moment we admit that mind thinks, the man, the woman thinks, and that there is a functioning of the brain that the thinking causes. Education does not create mind but draws it out just as the word education describes and defines. Since the cells and fibers of the healthy brain are the very inlets and outlets of thinking, the consciousness of all normal sensations, ideas and acts, in the practical work of education and reeducation mind and brain may be considered as one. So little is known about what mind is, that after taking into consideration the cause and character, the meaning of and the use for the rhythmic pulsation of the normal adult human brain, it does not come as much of a surprise to find all education is physical, cerebral, very much more so than the authorities on the subject have led us to believe. Mind is the thinker—the man, the woman—and does not fail the appeal made by the training that develops sufficiency of brain control.

Education based on the practical concept that in normal thinking mind and brain combine as one, cannot come into its own until late in the adolescent or early in the adult period of our development. It is then that the brain begins to be whole and that the

thinker begins to use the whole brain as it should be used. Until the close of the stage of adolescence, we live almost entirely the life of sensation. Before we become young adults, we parrot the ideas and ape the acts of others. Definite ideas and decisive acts of our own are quite the exception until the brain structure and functioning is equal to them. While the sense-brain grows all the time from the day of birth, neither the idea-brain nor the act-brain reaches the norm of organic growth until we are quite adult. Anatomy and physiology rather than theories of education set the time and determine the means and methods that develop sufficiency of brain control.

The way we think when we are well gives us the key to the science and art of education and reeducation. The aim of that science and art first of all is the gaining of brain control. While there are no short cuts in real education or reeducation, it is made very much easier for anyone to gain or regain sufficiency of brain control after the mechanism and mechanics of the controlled brain have been explained. This does not mean that the student in need of the education that develops sufficiency of brain control or that the patient in need of the reeducation that overcomes insufficiency of brain control, must know all the details of anatomy, physiology and psychology set forth in the standard text books. A very simple analytic view of the structure of the brain accounts for its normal pulsations being due to the energetic rhythmic contactings of brain-cell branches and nerve-fiber-end branchings and just as simple a synthetic view of the functioning of these parts of the brain associate and correlate in sensing, ideating and acting, points out what is required in education and reeducation.

Most of the three or four hundred millions of brain-cells form the layer of gray matter at the surface of the brain. Anatomists, physiologists and psychologists by careful survey have found that the brain-cells are arranged in definite areas. The areas of cells in which we are conscious of seeing, hearing, tasting, smelling and touching—the internal organs of sense—lie on the under and back sides of the brain. The cells in which we are conscious of ideas—the organs of intellect—are in the fore-brain. The areas of cells in which we are conscious of our acts—the organs of will and willing—are in the fore and mid brains.

The many millions of nerve-fibers that form the bulk of the brain are gathered into bundles—the conduction pathways from the brain to the body, from the body to the brain and between the areas of brain cells. It is the latter system of nerve fibers that associates structurally and coordinates functionally the parts of the brain by and through which the thinker senses, ideates and acts. It is well for all concerned to understand clearly that the sense, idea and act parts of the brain are the master-gears of the thinking machine—the controlled brain—and that normally they mesh perfectly and work together smoothly, steadily, swiftly and surely. As the skilled mechanic knows from certain sights and sounds that the machine he has in charge “runs sweet” so the teacher from “the feel” of its rhythmic pulsations should be certain that the student’s brain functions easily and effectively to the point of sufficiency of control. What anyone seeking to gain or regain sufficiency of brain control must fully understand is, that the brain is not open to distinct sensing, definite ideating or decisive acting unless the cell-areas

and nerve-fiber tracts are in the bonds of the mechanical unity described above. This is the state of the healthy, the active, the efficient, the controlled brain—the brain the thinker masses and mobilizes to meet and master what comes into it from without and what goes out of it from within during the waking hours.

Education that takes the rhythmic pulsation of the brain as the physical sign of sufficiency of brain control, for its guide and guard, is safe and sane—free from perilous fads and fancies. This is the education that takes and keeps the middle of the road to learning. On the one side it breaks with the accepted means and methods of education when and where they are so much a matter of mere terms and theories as not to drive straight to the first objective of all education—the development of sufficiency of brain control. On the other side it avoids the folly of entangling anyone in that web of subtilities and sophistries spun by ultra and outre psychologists. As long as what is believed to be back of them is outside of the realm of physical demonstration, subconsciousness, superconsciousness and the unconscious, something supposed to do our thinking for us with no effort on our part, remain mere words, imagination's gorgeous creatures wide of wing and small of body and bound to perish with the various vague systems of psychology. As necessity forces most of us living in the temperate zone to stay at home and let our hardier and more venturesome fellows explore and exploit the frigid and torrid zones, so scientific conservatism compels most of us to forego the dangers and delights that lure many to the unmapped regions of our being and confines us to the common

places, things and events of our every day thinking, our workaday consciousness. If there is a thinking, that goes on when we are asleep or in a state that resembles sleep or even when we are awake and unaware of it, that thinking is a law unto itself and takes care of itself. But even if the world of our thinking sinks far below or stands high above what ordinary experience embraces and exemplifies, it is not amiss here and now to insist on the thoro understanding and the mastery of the thinking we know goes on when we are wide awake and aware of it.

The present means and methods of education, marked thruout by much indirection and often marred by misdirection altogether, fall short of developing our ability to control the brain. In view of the fact that so often in after life a disease develops in so many of us because of insufficiency of brain control and calls for reeducation, it is a serious question if sufficiency of brain-control was developed at all during the years of highschool or college or even university education. In education as in everything else the useless finally gives place to the useful. We may never know all about what sensations, ideas and acts are in themselves as they come to and through the healthy brain but the rhythmic pulsation of the brain remains the physically demonstrable sign that we register our sensations, form and focus our ideas, and by will spur on or draw rein over our acts.

As there are physical signs that the healthy heart holds and hurls its charge of blood the way it should, so the rhythmic pulsation of the brain is the physical sign that the brain gathers, grips and governs its content of sensation, idea or act the way it should. It is as easy for a teacher to learn to demonstrate the

physical sign of sufficiency of brain control, as it is for a physician to elicit and exhibit the knee-jerk in a healthy man or woman. Educators must apprehend and adhere to something physical, something tangible that bridges the gap between mentation and cerebration, between mind activity and brain functioning, something that unerringly signifies that we have gained and keep sufficiency of brain control.

THE KIND OF EDUCATION THAT DEVELOPS SUFFICIENCY OF BRAIN CONTROL

THE rhythmic pulsation of the brain, the physical sign that the thinker controls the brain, commits us to methods of education that are simple, direct and effective. Unfortunately, the teaching and training that develops the sufficiency of brain control defined and described in this study of the way we think when we are well, is not yet a part of high-school education. Until high-school teachers know the physical sign of sufficiency of brain control and examine systematically and often to find out if instruction actually reaches the student's brain, our youngest men and women will have to seek elsewhere for the kind of education that develops real sufficiency of brain control.

Educators in every line are familiar with the details, as far as they are known, of the technique that insures development of sufficiency of brain control in young adults, except the physically demonstrable rhythmic pulsation of the brain which signifies that sufficiency of brain control is developing or developed.

The few following paragraphs are written solely to serve as a back-ground for the psychotherapy by

reeducation that inevitably soon or late must be called upon to overcome the insufficiency of brain control bred and born of neglected or no education at all.

For the benefit of those who would put a keen edge on their thinking and must do it for and by themselves, the way the healthy man or woman gains and keeps sufficiency of brain control must be outlined as in a primer so that anyone can grasp the principle and follow the practice.

Everyone on the threshold of adult life should be taught and trained to control the brain. That is the time when the thinker begins to use all of the brain. From infancy we are so used to a fairly full functioning of the sense-brain, that by the time we come to the border of adult life, we should be adept at sensing our surroundings and our bodies. We turn the external organs of sense towards the proper objects but at best there is much we do not notice, much we are not conscious of seeing, hearing, tasting, smelling and touching. The reason for this is that the internal organs of sense—the areas of brain-cells and tracts of nerve-fibers in and through which we become conscious of sensations, common and special,—have not been opened enough, so to speak, to take in whole impressions distinctly. The same is true of the idea and act brains. An idea may be definite in its central feature but fogged in detail. An act may be quite energetic yet lack the element of decision that marks and makes the willed act. Sensations ideas and acts of which we are not fully conscious are like objects that can be seen through a microscope and recognized for what they are, but do not stand out sharply and solidly until the instrument is perfectly focused. Even the so-called nor-

mal adult brain needs to be trained to the point where habitually sensations become distinct, ideas definite and acts decisive. The lesson of developing sufficiency of brain control is simple although not always easy to learn. We overcome all the difficulties from the beginning to the end of this lesson if we grasp the fact that distinct, definite, decisive thinking controls the brain. This rule is a rigid one and we must apply it constantly if we would gain and keep sufficiency of brain control.

Ordinarily we take our sensations, ideas and acts so much as matters of course that we do not concern ourselves very much about whether or not we are fully conscious of them. The teacher familiar with the rhythmic pulsation of the brain, the physical sign of sufficiency of brain control, by working with us soon finds out if we are fully experiencing sensations, forming ideas or putting the weight of will into our acts. Under the teaching we strive to become fully conscious of the given sensation, idea or act, without thought of the resultant rhythmic pulsation of the brain, which is surely the outcome of our efforts. From the beginning the parallel between the lines of normal thinking and rhythmic brain pulsation has been strictly kept to illustrate what sufficiency of brain control really is and does, but in the practical work of education these lines suddenly come together and run on as the one line of sufficiency of brain control.

When we take up by and for ourselves a training that aims to fully develop sufficiency of brain control, nothing takes us so fast and far on our way as paying strict attention to what comes into, arises in and goes out of the brain as sensation, idea and act. The efforts

we intelligently make to become and be fully conscious of what we think literally moulds and moves the brain in the way that makes for our control of it. This is the a-b-c of the practice of controlling the brain. As swimming exercises all the muscles of the body, so thinking intently and intentionally, which is the way we think when we are well, exercises all parts of the brain. The sense, idea and act brains are, as it were, the muscles of the mind, and they can be easily trained to the work of normal thinking. Experience in teaching healthy men and women to control the brain proves, that it is better to let them use the brain the way they should as they go about their affairs, than to prescribe irksome mental exercises to force the sufficiency of brain control. The ability to control the brain springs up naturally the very moment we stop careless, casual thinking. The thinking of which we are fully conscious is causal, dynamic, and practiced to the finish makes obedient servants of the sense, idea and act brains.

A month or two of intensive practice in becoming and being conscious, fully conscious, of normal sensations, ideas and acts, develops sufficiency of brain control in the healthy young man or woman. This training actually reforms the structure and renews the function of the brain. The uneducated brain may be normal enough as brains go, but differs from the normal educated brain in the degree of sufficiency of control. Every moment of the waking hours offers the opportunity and occasion for brain control. Only the distinct sensation informs us exactly in regard to what is going on in our surroundings of which the body is part and parcel. Only the definite idea is valid and valuable. Only the decisive act—

the willed act—is worth while. By habitually giving the whole of attention to such sensations, ideas and acts we develop sufficiency of brain control.

There is a form of invalidism, semi or complete, that is the aftermath of the education or experience that fails to develop sufficiency of brain control. This sickness known to so many and understood by so few is caused by insufficiency of brain control. The aim of education first of all should be to develop sufficiency of brain control. The studies that fit us for our work in life should follow those that make sufficiency of brain control second nature to us. If the more advanced and serious studies are taken up before the brain is stabilized to the point of sufficiency of control, there is strain and finally functional breakdown of the brain. It is only after experiencing the torments and terrors of the disease caused by insufficiency of brain control that anyone can appreciate fully the principle and practice that develops the sufficiency of brain control that makes the mind calm, clear and cool as crystal.

BOOK II

THE WAY WE THINK
THAT MAKES AND KEEPS US SICK.
THE BRAIN UNCONTROLLED

"We examine a patient from head to foot with instruments of precision, but often forget to cast a glance at the combined psycho-physical personality. In functional nerve disease such an omission is fatal to success. Indeed, the difference between the veterinary art and medicine is only that of the clientele once the mind is left out."

—DRUMMOND (Durham University).

"What is the hardest task in the world? To think. I would put myself in the attitude to look an abstract truth in the eye and I cannot. I blench and withdraw on this side and on that."

—EMERSON.

"Our life is sicklied o'er with a pale cast of thought."

—SHAKESPERE.

THE CAUSE OF DISEASE NOT ALWAYS PHYSICAL

IN the course of time mankind has laid the cause of disease to everything in turn from the wrath of the gods to germs known and even unknown. Doubtless, it will be found that the myths of the ancients were no worse in regard to the cause of all disease than the mistakes we make today in respect to the cause of some disease.

Among the well informed there is no question as to the intelligence and earnestness of those who have sought, and still seek, to solve the problems of the

cause, the prevention and the cure of disease, according to physical principles and practices. The sanitary and hygienic, the medical and surgical benefits that have come to the whole of humanity through bacteriological research alone stops any unfair criticism in that particular. The scientific study of nutrition prompted by the fact that the human body is made of and maintained by the substance of food digested and assimilated, and the discovery that there is always some indigestion and some lack of assimilation whenever we are sick in any way, has taken us very far towards understanding the conditions for health and the cause of many diseases. Just now medical research raises high hopes that the full knowledge of the alterations in the quantities and qualities of the ductless gland secretions will bring us near the end of the list of the refined material factors in health and disease.

But all that is or becomes known in all these directions may be found at last to be only a part of the truth about the cause and nature of disease. We have been told many times, with greater emphasis each time, that the cause of disease is always something physical. While hostile bacteria, malnutrition, and ductless gland secretions plus or minus are found in the bodies of all the sick, it is a very serious question if any such things, conditions, or substances are the prime cause of any disease.

In considering the very beginning of any sickness, it does no harm to recall a rather striking saying of the old time doctors: "The healthy man is not sick." The modern physicians say plainly: "When we are well we resist disease." How does it happen then that bacteria get a chance to do their deadly work, that

malnutrition dogs our steps through life, that ductless gland secretions foul or fail us just when we need them most? It comes to this: No matter how gross or subtle the material things, conditions, or substances modern medicine declares cause disease, it is very doubtful if the first cause of any disease in any case has been discovered or described.

In this matter it is well first of all to distinguish between cause and effect and vice versa. Unless wholly blinded by medical materialism, we can see that some dynamic disturbance of the human body itself, some letting down of the bars of its resistance comes before it can be said that there is disease at all. Too long we have mistaken infection, malnutrition, et cetera, which are the effects for the causes of disease. The first falling away from the standard of well being goes on and soon becomes what we are in the habit of calling disease. It is worth thinking about that there is disease before germs can breed in us, before malnutrition can waste and wither us, before too much or too little ductless gland secretion can ruin us.

Today there are very few physicians or intelligent patients as willing to believe as they did say fifty years ago, that disease in itself is wholly a physical thing or that its cause is always a purely physical thing of any kind. The psychologists have pointed out so much about what the way we think does for and against health, that the mental cause of disease begins to loom large for most of us compared with what it did even twenty years ago. Nevertheless, when disease overtakes most of us, we are quite as apt as ever to look upon the body as a culture medium swarming with poisonous bacteria, a retort fairly

seething with fermenting organs, or a flask running over or not full enough of ductless gland secretion.

Our devotion to the materialistic explanation of all disease is absurd. It comes mostly from taking it for granted, that what is not known now about the cause of all disease is not worth considering or that what is only partly known that conflicts with what is generally accepted in the matter is unreal, untrue. We too easily and quickly jump to the conclusion that all disease is physical in cause and character, and that any other view of it makes a mystery of disease unfathomed and unfathomable. Disease is a mystery yet, in spite of all the great and good work that has been done by the pathologists who have examined minutely the living and dead human body ravaged by bacteria, wrecked by malnutrition, and ruined by over or under flowing of ductless gland secretion. Reason, which is just as penetrating as microscopy or chemistry, is bound to have its way with us at last and will convince us that we have discovered more of the effect than the cause of disease.

The futility of believing and saying that all disease is physical in cause and character is fully illustrated by a certain class of patients that remains on the visiting list of the physician for an unconscionable length of time. This does not refer to surgically inoperable or medically incurable cases. There is a very great number of men and women whose sickness seems to be without end, and yet it cannot be found to be due to unfriendly bacteria, various kinds of malnutrition, varying amounts of ductless gland secretions or what not of a material morbid nature. The worst of it all is that these cases are treated as if known physical causes were at work and they do

not have the strength to wear the disease out or the grace to get well by responding to all that is done to and for their bodies. They spend their days and nights in great trial and tribulation, and they are the despair of their physicians and themselves.

In such circumstances and from such results of treatment, the physician in strictest confidence, in considering a case of the kind, often says: "There is really nothing the matter with Mrs. Doe. If there were I could bring her through all right. My other cases get along nicely." The friends and relatives, following the lead of some fad or fancy of mind cure, often say: "So and So would get well if he would only use his will power."

Enlightened observation shows too much helplessness on the part of the physician in the presence of such a sufferer and too much suffering on the part of such patients, for one to agree in a single particular with hasty decisions and opinions professional or lay. The sick referred to really suffer, and more than the physician measures by any means or method used at present. There is a difference, a vast difference, between what is given out officially as to the cause of all disease and what the cause of some diseases really is. Not all who seek or summon the physician are sick in body. Why, then, are the services of the physician needed in such cases?

There is a great gap in the theory—a sudden end of the findings in the directions in which we so diligently search for the physical cause of disease. It becomes clearer almost day by day that the cause of disease is not always physical. Instead of something physical having everything to do with the beginning, course and character of any sickness, more often than

physicians have had the means of positively knowing, more often than patients have even suspected, something mental first finds and pierces the joint of the armor that protects us against disease. If this is not true of most diseases, it is physically demonstrable in one disease that is pandemic—world wide in its spread and havoc. Of the way we think when we are sick most of us have had experience enough, but we are loath to admit that there is a way we think that makes and keeps us sick. As we go on we shall see that there is a sickness of mental origin, that it is caused and characterized by insufficiency of brain control, the essence of which is a weak way of thinking. Furthermore, it will be made clear that while this sickness involves the whole of the human body, the irregular pulsation of the brain is the physical, the diagnostic sign of it and as reliable as any physical, diagnostic sign of any disease caused by bacteria, malnutrition, or unbalanced ductless gland secretions.

MODERN OPINIONS IN REGARD TO THE PART THINKING TAKES IN HEALTH AND DISEASE

IN the year 1784 the King of France and his ministers decided to probe the doctrine of animal magnetism expounded and exploited by Dr. Fredrick Anton Mesmer. The incident is of some interest to all Americans for the reason that Benjamin Franklin was one of the nine distinguished men chosen to make the investigation.

The Royal Commission, as it was called, found and reported in the main as follows: "In regard to the existence and utility of animal magnetism, we have come to the unanimous conclusions that there is no

proof of the existence of the animal magnetic fluid; that the violent effects, which are observed in the public practice of magnetism, are due to manipulations or to the excitement of the imagination and the impressions made on the senses; and that there is one more fact to be recorded in the history of the errors of the human mind and an important experiment upon the power of the imagination."

While the Royal Commissioners in those statements tolled the death-knell of animal magnetism as a vital and curative agent, in the following minor clause of their report, they sounded the *keynote* of *modern psychology* in all its aspects: "We do not observe in any of those phenomena (referring to what they saw in Hesmèr's clinics) anything beyond *the influence of the mind.*"

The phrase "the influence of the mind" became at once the thin end of the wedge that scientists ever since then have been driving into and through one of the knottiest problems they have ever undertaken to solve—*why* and *how* mind is related to health, disease, and cure.

For fifty years after the report of the Royal Commission was made, the excitement and enthusiasm over Mesmerism highly colored the thought of many writers such as De Puysegeur, Weinholdt, and scores of others. Later scientists of repute and renown gave their unbiased opinions in regard to the part thinking takes in health and disease, opinions that have stood and still stand above and beyond the fear of successful contradiction. The literature of this subject is very voluminous, and to the effect that thinking had very much to do with bringing the human body to its present form and function and that of-

tener than is commonly supposed there is a way we think that is the obscure, but obstinate cause, of many of our diseases. Even the following brief excerpts from the writings of evolutionists, psychologists, and physicians combine to make these points very clear:

“It is not the organ, that is, the form and parts of the body, which have given origin to its habits and peculiar functions, but it is, on the contrary, its habits, its manner of life and the circumstances in which the individuals from which it came found themselves, which have, after a time, constituted the form of the body, the number and character of its organs and the functions which it performs.”

CHEVALIER DE LAMARK—NATURAL HISTORY.

“The general proposition that life has preceded organization in the order of time may be regarded as established. Animal structures have been produced directly or indirectly by animal movements and as animal movements are primitively determined by sensibility or consciousness—consciousness has been and is one of the primary factors in the evolution of animal forms.”

COPE—ORIGIN OF THE FITTEST.

“But mechanism is then in every sense posterior to intelligence and will; it is a means created and used by will. In a strict sense will creates the reflex mechanism to which it afterwards deposes its functions.”

PROFESSOR ANDREW SETH (*Edinburgh University*)
—MAN’S PLACE IN THE COSMOS.

“It is a biologic axiom that function precedes organism. For while we may also say that necessity

develops function in much the same sense that we say it is the mother of invention, it is evident that the use of the means to the given end implies the preexistence of a specific potentiality, having a plan in the abstract, for only the preexisting can be the cause of a necessity. Thus it follows that something of a mind must exist before anything of a brain can be formed."

CHRISTISON—BRAIN IN RELATION TO MIND

"Even the most purely vegetative of the bodily processes are dependent for their character upon antecedent states of mind."

PROFESSOR LADD (*Yale University*)
—PHYSIOLOGICAL PSYCHOLOGY.

"Recent psychologists tell us that all mental states are followed by bodily changes—that all consciousness leads to action. This is true of desires, emotions, pleasure and pain and even of such seemingly non-impulsive states as sensations and ideas. It is true of the entire range of our mental life. The bodily effects in question are, of course, not limited to the voluntary muscles, but consist in large part of less patent changes in the action of the heart, lungs, stomach and other viscera, in the caliber of the blood-vessels and the secretions of the glands."

PROFESSOR C. A. STRONG (*Columbia University*)
—WHY THE MIND HAS A BODY.

"All mental states (no matter what their character as regards utility may be) are followed by bodily activity of some kind. They lead to inconspicuous changes in the breathing, the circulation, general muscular tension and other visceral activity, even if

they do not lead to conspicuous movements of voluntary life. Not only certain posterior states of mind then (such as those called volitions for example) but states of mind as such, all states of mind, even mere thoughts and feelings are motor in their consequences."

"The fact is there is no sort of consciousness whatever, be it sensation, feeling or idea which does not directly and of itself lead to discharge into some motor effect. The motor effect need not always be an outward stroke of behavior. It may be only an alteration of the heart beats or breathing or a modification of the distribution of the blood as blushing or being pale; or else a secretion of tears or what not. But in any case, it is there in some shape when any consciousness is there; and a belief as fundamental as any in modern psychology is the belief at last attained that conscious processes of any sort, conscious processes as such, must pass into motion open or concealed."

"The psychologist acknowledges in response to a logical demand that every single psychical (mental) fact has its physiological counterpart."

PROFESSOR WILLIAM JAMES (*Harvard University*)
—PSYCHOLOGY.

"The physician is daily called upon in the exercise of his profession to witness the powerful effects of emotion upon the body. He recognizes the fact although he may not be able to explain its rationale. He perceives that mental causes induce disease, destroy life, retard recovery, and often interfere with the successful operation of the most potent remedial means exhibited for the alleviation and cure of bodily

disease and suffering. Although such influences are admitted to play an important part either for good or evil, I do not conceive that as physicians we have sufficient appreciation of their great importance.”

DR. WINSLOW FORBES.

“The influence of the intellect and passions upon the health and endurance of the human organization has been but imperfectly understood or appreciated in its character and importance to mankind. Few, we believe, have formed any adequate estimate of the sum of bodily ills that have had their source in the mind. Those of the medical profession ever concentrating their attention upon the physical are too prone to neglect the mental causes of disease and thus may patients be subjected to the harshest medicines of the pharmacopeia, the true origin of which is some moral sorrow which a moral balm alone may reach.”

DR. WILLIAM SWEETSER—MENTAL HYGIENE.

“Even the material nature of man is not wholly material; his very organization is calculated for his higher distinction; and it may be affirmed that not only the philosopher but the naturalist, if he would duly understand the physical nature of man must be strongly impressed with this truth. Body and mind are most intimately blended in every part of the structure of the living individual and as the disorders of the mind are often removed by pharmaceutical remedies, so on the other hand, the disorders of the body as often require the aid of the psychological physician. In the disorders of the nerves especially, the physician can effect nothing if he does

not in the first place direct his treatment to the mind. The numerous and varying symptoms, which under the name of spasms act so conspicuously in pathology and unhappily a still more conspicuous part in real life, are often removed most successfully and effectively by judiciously directing, controlling and taking advantage of the state of mind and how few disorders of any organic system in which the nerves do not at least symptomatically suffer. We see, therefore, how extensive is the application of psychical methods of cure throughout the domain of the healing art."

DR. FEUCHTERSLABEN—PRINCIPLES OF MEDICAL PSYCHOLOGY.

"The special influence of the mind and will upon the general bodily nutrition is daily manifest and acknowledged by every physician. Each mental manifestation has its ultimatum somewhere in the body, its natural language of position and motion peculiar to itself, thus affecting, of course, nutrition of the muscular tissue employed in maintaining that position, but when the mental states are of a disordered and depressing character, they occasion more or less disturbance of the functions and their physiological processes."

DR. C. F. TAYLOR—THEORY AND PRACTICE OF THE MOVEMENT CURE.

"The effect of every kind of passion is to produce some change, some alteration in organic life. Anger accelerates the circulation and increases often in an incommensurable proportion the effort of the heart; it is on the force, the rapidity of the course of the blood that it maintains its influence. Joy affects

the circulation also without producing so sensible a change; it develops its phenomena in greater plentitude, accelerates them gently and determines them to the surface. Fear acts in an inverse ratio; it is characterized by a feebleness in the whole vascular system, a feebleness which preventing an arrival of the blood to the capillaries, produces that general paleness which is observed in the body, particularly in the face. Respiration has no less immediate dependence on the passions. Those suffocations, that oppression, the sudden effect of profound grief, do they not indicate some sudden alteration in the lungs? In the long catalog of chronic diseases are we not often to trace the different passions of the patient to discover the principles of the disease?"

PROFESSOR BICHAT—PSYCHOLOGICAL
RESEARCHES UPON LIFE AND DEATH.

"If a patient dies, we open the body, rummage among the viscera and scrutinize most narrowly all the organs and tissues, in the hope of discovering lesions of some sort; there is no small vessel membrane, cavity or follicle which is not attentively examined. The color, the weight, the thickness, the volume, the alterations, nothing escapes the eye of the studious anatomist. He handles, touches, smells and looks at everything, then he draws his conclusions one way or another. One thing only escapes his attention, that he is looking at merely organic effects, forgetting all the while that he must mount higher to discover their causes. These organic alterations are observed, perhaps, in the body of a person who has suffered deeply from mental distress and anxiety, these have been the energetic causes of the decay, but they can-

not be discovered in the laboratory or amphitheater. Many physicians of extensive experience are destitute of the ability of searching out the mental causes of disease; they cannot read the book of the heart and yet it is in this book that are inscribed day by day, and hour by hour all the griefs and all the miseries and all the vanities and all the fears and all the joys and all the hopes of man; and in which will be found the most active and incessant principles of that frightful series of organic changes which constitute pathology. This is quite true, whenever the equilibrium of our mental nature is long disturbed, we may rest assured that our animal functions will suffer. Many a disease is the contrecoup, so to speak, of a strong moral emotion; the mischief may not be apparent at the time, but its germ will be, nevertheless, inevitably laid."

DR. REVILLE PARISE—MORAL THERAPEUTICS.

Rather than a glittering generality it is a grave generalization of science, that thinking is inextricably bound up with every fiber, function, and faculty of our being, in health and disease. Although long before the day of laboratory psychology, many eminent physicians had written interestedly and interestingly regarding the way we think when we are well and sick; it was not until healthy men and women were hypnotized that the way we think, which makes and keeps us sick, was brought to undeniable objectivity.

For nearly forty years after its discovery, hypnotism was a professional and popular plaything. Eventually the practice of hypnotism made and marked an epoch in medicine. In the hands of its

great and grave masters, Charcot and his colleagues, an incisive investigation of normal and abnormal thinking was made, an investigation equivalent to a bloodless vivisection of the adult human brain. Never before that time had any physicians taken such an enlightening look at the workings of human mentality as this coterie of medical savants. The practical outcome of the findings of the Charcot school of hypnotism was this: The sensations, ideas, and acts of hysterical persons, suggested to healthy men and women in the state of hypnosis brought on many states of mind and conditions of body resembling hysteria. The corollary of the above proposition which was demonstrated is this: Hystericals not in the state of hypnosis suggest to themselves all the abnormal sensations, ideas, and acts that constitute hysteria.

The erratic conduct of hysterical men and women awed the ancient and medieval physicians. The modern physicians stripped the veil of mystery from the whimsically tragic figure of hysteria. Moebius defined hysteria as follows: "Hysteria is the state in which ideas control the body and produce morbid changes in its functions." Charcot said: "We must take hysteria for what it is—a psychic disease par excellence." Hystericals being so well understood now it is useless to put off any longer coming to the conclusion that neurasthenics and melancholics too, make and keep themselves sick, by the way they think.

No authority in our day writes so clearly and convincingly of psychopathogenesis, the way we think that makes and keeps us sick, as Dr. Paul Dubois, (Department of Neuro-Pathology, University of Berne). In regard to the cause and character of neurasthenia,

hysteria, and melancholia respectively, he says: "the most characteristic thing about the nervous prostration patient is his mentality. The functional disorders which he experiences have nothing very special about them and are often found in healthy people. By virtue of his hypochondriacal mentality the neurasthene magnifies things and alarms himself. He is autosuggestible, sensitive and emotional; but the dominant thing about him is his fatigability. That is in large part autosuggested, dependent on a pessimistic state of mind, but it is also real and always still more aggravated by the emotional fatigue which results from thinking about it."

"In hysteria, as in nervous prostration, one must take into account the real fatigue of the nerve centers, which on the one hand results directly from morbid states of mind, and on the other furnishes new food for autosuggestion. Here we have the vicious circle in which the neuroses travel. The real ills give birth to fears and phobias and on the other hand their mental representations of a pessimistic nature create new disorders. I admit there are real functional troubles in hysteria—ailments depending on physical causes, painful sensations born of physical, intellectual and emotional fatigue. But it is just as plain also that these sensations sometimes disappear with such rapidity that one is simply obliged to attribute a mental origin to them, although it may not always be possible to trace the association of ideas which has led to the final auto-suggestion."

"Everyone knows the melancholic patient, plunged in the depths of sadness, sometimes agitated, who gives expression to wandering ideas of ruin both moral and physical."

“What strikes us first of all in those cases is the tenacity of the fixed ideas when there is nothing to confirm the statement of the patient and also the perfect preservation of the intellectual faculties which permits them to reason logically on all other subjects. Sometimes the ideas they express seem to have a certain substratum of truth and it is difficult to tell whether their fears have any foundation and whether they are in the presence of real difficulties. This is the case with the physician who claims that his clientele grows smaller day by day; of the merchant who says that his business is involved and all that he has will be lost. When one has no other information we may wonder whether we have to do with a sick man or not. But more often the exaggeration whether great or small is evident and the denials of the relatives show the wandering nature of the preoccupation.”

THE DIAGNOSTIC DILEMMA

THE efficient physician does all he can to find where and what the disease is in the given case. All the way from Mesmer to Dubois medical men have been about equally divided as to whether neurasthenia, hysteria, and melancholia, are due to a condition of the body or a state of the mind. Accordingly each of the followings are armed and armored with a different general diagnostic term—neurosis or psychosis.

It has often been proved by exact means that the suffering in developing or developed disease is not always in the region or part of the body that is the actual seat of the ailment. There is no better ex-

ample of this referred suffering than that in the knee which comes from beginning, or progressing, tuberculosis of the hip-joint. Nowadays physicians are very much on guard against declaring disease to be in a region or part of the body that is not affected. Nevertheless, in cases of neurasthenia, hysteria, and melancholia it is not the exception to treat some region or part of the body for a distress that is referred from the uncontrolled brain.

The argument that the so called neuroses are wholly physical in cause and character is quashed by the fact that the suffering in the uncomplicated cases, does not lead to the finding of anything wrong physically with the region or part of the body of which the patient so constantly complains. The contention that the so called psychoses are entirely mental in origin and nature is made void by the fact that as yet nothing has been found by which it can be proved physically that there is a connection between said mental state and the suffering in a given region or part of the body. If the physician clings to the theory that the neuroses are always caused by some condition of the body and searching diagnostics prove said condition of the body to be negative or negligible, he declares for a disease that does not exist. If the physician persists in the view that the psychoses are always caused by some state of mind, he is bound to bring forward something tangible to demonstrate the state of mind that causes and characterizes functional disturbances in this or that part of the body. Thus the intelligent and conscientious physician who follows the lead of those who declare a physical or mental cause for neurasthenia, hysteria, and melancholia finds himself between the horns of

a diagnostic dilemma and he cannot make his escape by saying the word psychoneurosis to himself or crying it ever so loudly. Of late psychoneurosis is a word that has been shouted from the housetops, but it is just as hard to explain as neurosis or psychosis.

The impasse to which we have come in the diagnosis of the group of diseases in question begins to give way the moment we assume for the sake of clearness, that fatigue near, or at the point of exhaustion, is purely physical in its effects. Why is it then that when we are very tired for a time that we so easily and quickly translate the sensations of that fatigue, normal enough in themselves, into the symptoms of disease? It is right here that the way we think that makes and keeps us sick begins and goes on and we soon tread the vicious rounds of that way of thinking until we have made inveterate neurasthenics, hystericals, or melancholics of ourselves. In regard to the beginning of this way of thinking, Dubois says: "We make interpolations on the reflex arc." In plain and simple words when we are tired we are very apt to drag in mentally something that is no part of, and has no place, in real thinking. It is all very well to say that we do this very thing, but that does not bring it to physical demonstration that we do so, and what any physician or patient merely says or thinks about it does not make a scientific diagnosis of neurasthenia, hysteria, or melancholia.

Organic disease of the nervous system focalizes so sharply in the brain or spinal cord, that the neurologist makes an anatomical diagnosis of it with all but mathematical precision. By anatomical diagnosis is meant, locating the tissue or organ that is the very

seat of the disease. While physicians have been familiar with the suffering that marks and mars the body of the neurasthene, the hysterical, and the melancholic, the tests they have made so far to determine what this suffering means have not reached the source of these morbidities. Diagnosis in this direction has not gone much beyond the professional and popular notion that neurasthenia is just "a frazzle of the nerves", hysteria is a trick of "the female of the species," and melancholia an obscure but obstinate "biliousness". However, from all that is known about them, these are functional diseases of the nervous system. The insufficiency of function so characteristic of this group of diseases usually appears and settles in the parts and regions of the body in the following order: One or more of the organs of sense, especially the eyes or ears, the heart, the stomach, the intestines, the pelvic organs (male or female), the head, the back, and the extremities.

Escape from the diagnostic dilemma as regards the cause and character of neurasthenia, hysteria, melancholia and the many degrees of their being, mental or physical, begins the moment we stop looking at the body apart from the mind and vice versa.

To hackney the terms neurosis, psychosis, or even psychoneurosis, hinders rather than helps getting at the truth of this matter. There never has been indisputable authority for anyone saying: "Sufficiency or insufficiency of the functions of the human body is purely physical or purely mental." Nevertheless, since the days of Charcot and his confreres, the tendency has been to look upon the insufficiency of function that stamps the neurasthenic, the hysterical and the melancholic from head to foot as mental in

origin. The simple truth is that the living adult human body and mind, well or sick, combine as one to the extent of being perfectly synchronized in their respective activities. The corollary of this proposition is that thinking, normal or abnormal, is as inseparable from the functioning of the brain and the body as the blood is from the pulsations of the heart and arteries. Fortunately, for physicians and patients mere partisan medical terms and theories do not cause the functions of the human body in health or disease or decide the diagnosis of any disease.

From the view-point of structure, the human body is truly "a reflex arc", an inlet to, and an outlet of, the activity of mind. Necessarily the brain is the very center of this arc and mediates in and out the activity of mind called thinking, when there is sufficiency of brain function as it is related to thinking, that is, when there is sufficiency of brain control, all else being equal, there is health. When the insufficiency of brain function is the same as insufficiency of brain control, the way we think then weaves the mantle of misery that has been named neurasthenia or hysteria or melancholia and we wear it until we learn that education prevents and re-education cures these diseases. Insufficiency of brain control first and last is mental in origin and the source of all the other insufficiencies of function from the skin to the marrow in typical cases of neurasthenia, hysteria, and melancholia.

THE DIAGNOSTIC SIGN OF INSUFFICIENCY OF BRAIN
CONTROL

THREE thousand years ago the undertakers knew more about human anatomy than the doctors themselves. Taking the hint from the embalmers, who found the vessels we know now carry the red blood stream were empty in the bodies of the dead, the physicians named these tubes arteries, supposing them to contain air even in the bodies of the living. Today, the pathology and diagnosis of neurasthenia, hysteria, and melancholia, if based solely on the term "nerves" and the theory of "nervousness" is no less mythical, and therefore mistaken, than the physiology of circulation put forward by the ancients.

In typical cases of neurasthenia, hysteria, and melancholia the body, in spite of the appearance and complaint of the patient, is surprisingly free from physical diseases in the common sense of the words. The results of thorough physical examination backed by laboratory tests of the blood, the urine, the stomach and intestinal contents, are usually quite negative. Unless the physician makes too much out of what is a shade off the norm in such cases, or insists that there are physical causes at work beyond detection by the means and methods now at his command, there is really very little upon which to base a scientific diagnosis of these diseases. Consequently, one of two things is true, either the physician must continue to diagnose these cases by his ability to "size up" human nature, or there is a physical, a diagnostic sign of neurasthenia, hysteria, and melancholia.

Modern medical men do not take anyone's word for what is the matter with them when they are sick. Nevertheless, the story the neurasthene, the hysterical, and the melancholic tells of past or present suffering must be listened to, for it points to the uncontrolled brain and the way they think as surely as what other patients say points to the inflamed lung or appendix. When these patients talk about their disease, the workings of their minds and brains are as clearly seen by one who knows the psychology of the cases through and through, as the movements of the works of a watch after it has been taken out of its case. In many words these patients describe their disease, a disease that physical tests prove does not exist in the part or region of the body of which they complain the most. If they are easily thrown off the line of description they so volubly follow, they are sure to come back to it by no matter how round about a course. They can not be blamed for doing this because the hand of suffering has been laid roughly upon them and they do not know when its clutch will be harder and heavier. They often say: "Doctor, when I am at my very best and even think of all that I have been through, it all comes back to me as bad as ever." These patients are not insane and they are not sick in the same way they would be if they had typhoid fever, diabetes, or exophthalmic goiter, but the suffering is just as real to them and it is the uncontrolled brain that is the sunken and unseen rock about which the currents of their lives turn, and above which the physician so often sees the waste and wreck of their health.

From the standpoint of pathology and physical diagnosis, the findings hitherto, in cases of neuras-

thenia, hysteria, and melancholia that run true to type, have been practically negligible. The hidden beginning, the erratic course, and the elusive character of the suffering in these cases has led the physician to believe that there is not very much the matter with them, and has just as often led the patient to believe that the physician does not know what is the matter with them. The diagnosis of these great functional diseases of the nervous system will never be satisfactorily cleared up until it rests on a physical, a diagnostic sign of them. The science and art of diagnostics makes headway only after discoveries have been made that enable the physician to elicit or exhibit a physical sign, or signs, that distinguish one disease or group of diseases from another.

Many years ago Rommanes, the English naturalist, recorded the results of his systematic observation as follows: "All possible mental states have their signs." This statement has been verified by exact experiments in every laboratory of psychology in the world. There is nothing more fundamental in modern psychology than this: Every phase of thinking, every change in consciousness expresses and exemplifies itself in the tissues and organs of the human body. Nevertheless, we transcendentalize so much the thinking related to health and disease that it is all but put and kept out of the realm of the real. Too long, altogether too long, we have held that thinking is something apart from the normal and abnormal functioning of our bodies. As a matter of fact, when we are well and awake we think from head to foot, we are conscious thru and thru, and thinking and functioning of all kinds go hand in hand. It is not merely that thinking parallels the

functioning of the body but that the way of thinking, the mode of consciousness is the cause of much that is normal and abnormal in the functioning of the body. The simple, the whole truth in this particular is that the body of the healthy man or woman mechanistically manifests the way we should think, and the body of the neurasthene, the hysterical, and the melancholic mechanistically manifests the way we think that makes and keeps us sick.

There is no more interesting chapter in the history of medicine than the one that deals with the finding of the physical, the diagnostic signs of disease. It was a long time before the physical, the diagnostic signs of heart disease were found. Today diseases of the heart are not diagnosed from the symptoms of heart disease the patient says he has, but from the physical, the diagnostic signs that almost unerringly point out whether it is the covering or the lining, the muscle or the valves, of the heart that is diseased. Hitherto, quasi diagnosis of neurasthenia, hysteria, and melancholia have been made by skillfully piecing together many symptoms until the picture of each disease seemed complete. We have gone further with neurasthenic, hysterical, and melancholic cases than with almost any others without finding the physical, the anatomical thing that reveals the source of all the suffering. It has been quite worth while to make the diagnosis of neurasthenia, hysteria, and melancholic by exclusion, that is, by proving that they are not other diseases. But that is not the direct diagnosis of these ailments. Physicians are not too rapidly getting away from the idea that neurasthenia, hysteria, and melancholia are the results of obscure structural changes in the nervous or other systems

of organs. Yet they know that the greater the flaw in structure, the graver the fault of function in any disease removes it from the category of these diseases. On the other hand, physicians are not quickly or universally taking up with the idea that neurasthenia, hysteria, and melancholia are mental in origin and that there is a physical sign directly diagnostic of them.

None of the physical signs of the way we think when we are well, observed by Rommanes and confirmed by exact experiments in the laboratories of psychology, are available at the bedside or in the consulting room. What is needed, if the diagnosis of neurasthenia, hysteria, and melancholia ceases to be the reproach of medicine, is a physical, a diagnostic sign of them that means as much to the physician any time, anywhere as the physical, the diagnostic sign of the congesting, the solidifying or solid lung in cases of pneumonia. The part the way we think plays in the sufficiency and the insufficiency of the functioning of every part of the body has been worked out fairly well except for the brain itself, the organ of thinking. Sufficiency of brain function, as far as normal thinking causes it, is the same as the sufficiency of brain control and all else being equal, is as indicative of and as essential to health as sufficiency of heart muscle contractions. Insufficiency of brain function as the neurasthenic, hysterical, and melancholic way of thinking causes it, is the same as insufficiency of brain control and is the *fons et origo* of all the suffering in such cases.

Sufficiency or insufficiency of brain control at present is very largely a matter of terms and theories with the psychologist, the educator, and the phy-

sician. This need not be so any longer. The phenomena of brain pulsation, regular and irregular, properly interpreted brings the functioning of the brain caused by thinking into the realm of the perceptible and demonstrable. It would be strange if the effect of the way we think that favors health, or fastens disease, did not objectify itself in the brain before it is referred to any other part of the body. It would be stranger still if there were no means of directly observing in the brain itself the effects of normal thinking or neurasthenic, hysterical, melancholic thinking. The effect of normal thinking is a habitually regular pulsation of the brain. The regular pulsation of the normal brain cannot be seen or heard, but it can be felt by the hand placed on the forehead and is as easy to feel as a regular pulse at the wrist. In our study of the way we think when we are well, the regular pulsation of the brain was named the physical sign of sufficiency of brain control.

The effect of a neurasthenic, hysterical, melancholic way of thinking is an irregular pulsation of the brain. The irregular pulsation of the brain cannot be seen or heard but can be felt by the hand placed on the forehead, and it is as easy to feel as an irregular pulse at the wrist. The examination of any neurasthenic, hysteric, or melancholic brain, any uncontrolled brain, by this means, shows its pulsations to be habitually irregular. Here and now in this study of the way we think that makes and keeps us sick, the irregular pulsation of the brain is named the physical, the diagnostic sign of insufficiency of brain control, the diagnostic sign of neurasthenia, hysteria, and melancholia. Possessing a knowledge

of the irregular pulsation of the brain as a diagnostic sign, the physician no longer leaves the diagnosis of neurasthenia, hysteria, or melancholia entirely to the imagination of the patient or himself. After examining such cases by the means and methods approved by all medical men and finding no evidences of infection, malnutrition, or organic disease, no marks of defectiveness or degeneracy, the physician can rely on the irregular pulsation of the brain as the diagnostic sign that these patients made themselves sick and keep themselves sick by the way they think.

THE MECHANISM AND THE MECHANICS OF THE UNCONTROLLED BRAIN

IT is easy for all interested in the way we think when we are well, to agree that the normal adult human brain is fully nourished and that sufficiency of brain control goes hand in hand with this perfection of nutrition. It is not so easy for everyone to be satisfied that the malnutrition, the semi-starvation of the brain that everyone admits in cases of neurasthenia, hysteria, and melancholia is the effect rather than the cause of the insufficiency of brain control so characteristic of these diseases. The fact that tips the brain in favor of the insufficiency of brain control being the cause instead of the effect of the under-fed brain is this: In convalescents from diseases in which the starvation of the brain must equal or exceed that in neurasthenia, hysteria, and melancholia, there is nothing to indicate that the way these patients think made them sick in the first place or retards their recovery. The neurasthenias, hysterias, and melancholias that crop out after other diseases have run their course are ingrained be-

fore in the very cells and fibers of the brain. In order to begin to settle this finely balanced question it is best to frankly grant the slight malnutrition of the cells and fibers of the whole nervous system in neurasthenia, hysteria, and melancholia and assume for the time being that insufficiency of brain control makes and maintains it. The practical conclusion one arrives at in this matter is shaped by the fact that the uncontrolled brain does not respond to the unaided efforts of the thinker the way it should any more than it would if it were a mass of gelatin moulded to the size and shape of the given neurasthenic, hysterical, or melancholic brain.

It is this passive, this uncontrolled brain that refers its waste and wear to any or all parts of the body. In such a case there is no difference between inactivity of the brain and insufficiency of brain control. The passive, the uncontrolled brain, the very core of every case of so called neurasthenia, hysteria and melancholia, is foreshadowed even by the state of the healthy brain in deep natural sleep. As to the passiveness—the inertia of the brain in sleep and other states, Professor Judd (Harvard University) writes as follows:

“In the first place, the condition of fatigue in the nerve cell has been found to be a condition of somewhat depleted tissue in the cell body. There are also certain chemical changes resulting from fatigue. These are indicated by the different reactions of fatigued and normal cells to the coloring substances which are used in staining microscopic sections of the tissue. The protoplasm of the fatigued cells, is in part exhausted as a result of the process of stimulation through which they have passed. Sleep must be a condition in which those cells are supplied with

nutrition and return to their normal state of energy and activity. During the period of deep sleep, each cell seems to be capable of insulating itself from the neighboring parts of the nervous system. There are some extreme conditions, probably pathological in character, in which dendrites of the nerve cells, curl up and form instead of extending branches, little knotty balls across which stimulations cannot easily pass. This curling up of the dendrites is probably a very much more radical change than occurs under the ordinary conditions of sleep. The synapses or interlacing of fibers which connect a cell with other cells or incoming fibers, are interrupted in most cases, not by any gross movement of the dendrites but rather by some chemical change in the tissue which makes it difficult for the stimulation to pass across from one cell to another."

"The external characteristics of a sleeping individual are clearly intelligible in terms of the physiological changes which have been described. In the first place, the individual becomes less and less susceptible to stimulations from the outside world. This means that when any form of external energy acts upon the nervous system, it finds the nervous system relatively inert. The receiving organs are closed and their cells are probably in a chemical condition unfavorable to any vigorous activity. Even when stimulations are received at the periphery and are transmitted to the central nervous system, they make headway through the tissues with the greatest difficulty. They do not follow the well defined pathways which are used in normal life, but are diffused throughout the whole organ."

"The condition of the individual need not be a

condition of complete sleep in order to show this insensitiveness of the nervous system. There are many conditions of fatigue in which the nervous system shows before sleep sets in more or less of a tendency to resist external stimulation. Furthermore, the different stages of sleep are by no means equal in their degree of dissociation."

"Not only are the cells of the sleeper's nervous system impervious to external stimulation but they are uncoupled in such a way that the stimulations which succeed in entering the nervous system do not follow the ordinary paths of discharge. This uncoupling of the central nerve cells does not occur in equal degrees in all parts of the nervous system. The large cells of the spinal cord are able to resist the effects of fatigue and the spinal cord may be said never to sleep under normal conditions. For this reason, stimulations which reach the spinal cord from the surface of the body are always transformed into reflex impulses and sent to the muscles of the trunk and limbs. The spinal cord is in this case uncoupled, not within itself, but only with reference to the higher centers."

"One effect of the uncoupling of the various nerve tracts in the organs of the central nervous system above the medulla is, that any process which takes place in these higher organs, because of strong stimulations or because of some abnormal excitability in the nervous system, are fleeting and irregular. The higher centers do not all of them sink into the same degree of inactivity even in a normal individual, and the slightest abnormality may result in a heightened activity in certain parts. The facts of consciousness which correspond to these irregular detached activi-

ties in the central nervous system during sleep are easily understood, when it is recognized that the nervous system is acting, not as a single organized system but as a disorganized group of centers."

"It is a familiar fact that certain narcotics induce a condition very closely related to sleep. The narcotic drug closes the avenues of sensory reception, reduces central activity, or renders its processes irregular and incoherent and suspends muscular contractions."

"There are certain conditions produced in nature, which are quite analogous to these conditions produced by drugs. Such conditions appear in fevers when the organism is under the influence of certain toxic substances and is rendered hypersensitive through the chemical action of these foreign substances on the tissues."

"The condition known as hypnosis has long been the source of superstitious wonder, and much that has been said and written in regard to it which would tend to increase the mystery attached to it. In many respects it is a condition closely related to normal sleep. On the other hand it has certain peculiar characteristics which differentiates it from ordinary sleep. These peculiarities can, however, be fully understood under the formula adopted in explanation of normal sleep, provided that formula is slightly modified to include certain specialized forms of dissociation."

"While normal sleep involves the uncoupling or dissociation of the nervous elements, especially of the type that suspends activity in the higher centers, hypnosis involves a dissociation which is partial and leaves a part of the higher centers in action. To put

the matter in simple terms, we may say that in normal sleep the cerebrum is dissociated from the lower centers and various centers in the cerebrum are dissociated from each other."

The terms and anatomical facts in the above quotations, help us to visualize the mechanism and the mechanics of the uncontrolled brain. It is evident that normal sleep stops our thinking, our complete consciousness of normal sensations, ideas and acts, by dissociating, uncoupling the structural elements of the brain—the brain cells and the nerve-fiber ends in the brain. It is more than an inference, since the rhythmic pulsation of the brain is the physically demonstrable sign of normal thinking, which cannot go on without the energetic contacting of brain-cell branches and nerve-fiber end branchings, that the brain of the neurasthene, the hysterical, and the melancholic is at last partly dissociate, uncoupled. The dissociation, the uncoupledness of the brain in these cases is not as complete as in deep natural sleep or these patients would always be in a state of stupor, semi or complete. However, the dissociation of the brain goes far enough to account for the half-waking, the semi-conscious condition of these invalids and the irregular pulsation of their brains. The dissociation may be greatest in the sense or the idea or the act brain. Be that as it may, in this connection the practical thing to always keep in mind, is that the uncontrolled brain is dissociated not altogether all the time.

It is one thing to take the dead adult human brain—the mechanism of thinking, apart in the laboratory and describe its makeup, normal or abnormal. But it is something else again to watch the way it

works in the living healthy man or woman or in the living neurasthenic, hysterical, or melancholic man or woman. To do this by taking the regular pulsation of the brain as the physical sign of the controlled brain and the irregular pulsation of the brain as the diagnostic sign of the uncontrolled brain, is worth more to the teacher in the classroom and the physician at the bedside than the gross or minute examination of dead animal or human brains ever made in all the laboratories of anatomy or psychology in the world. The regular pulsation of the brain is the physical sign that the student is learning or has learned to control the brain. The irregular pulsation of the brain is the diagnostic sign that patients do not control the brain, that they are not thinking the way they should but are merely "mooning," just dreaming the bad dream that has been called neurasthenia or hysteria or melancholia.

The teacher and the physician by means of the trained and experienced sense of touch can feel the irregular pulsations that mark "the tense" or "the excited" or "the torpid" brain, the three types of the uncontrolled brain pointed out by Vittoz. These irregular pulsations of the brain must be felt in order to be appreciated. It is only after feeling the irregular pulsation of many uncontrolled brains many times that the investigator becomes familiar with them. Then it is easy to distinguish that the pulsations of the "tense" brain gives "the feel" of a swelling that breaks now and then, that the "excited" brain elbows its way in the skull, and that the "torpid" brain surges heavily, falls back and then strikes very lightly.

Through all such examinations one must remem-

ber that the sensibility of the controlled brain has given place to the irritability of the uncontrolled brain. The irritability of the uncontrolled brain accounts for the erratic contacting of brain-cell branches and nerve-fiber end branching and the jerkiness in the running of the short circuited mechanism of thinking. Without a knowledge of this fact, the character and the cause, the meaning and the use for the irregular pulsation of the brain would remain unexplained and inexplicable.

For the victims of the uncontrolled brain the pith of this whole matter of brain dissociation is that the way they think, according to whatever term suits their fancy, tires, fatigues, exhausts, dissociates, uncouples, incorrelates, incoordinates, shatters or scatters the brain, and that this fragmented brain is the bitter root and the noxious flower of their so called neurasthenia, hysteria, or melancholia.

PSYCHASTHENIA

THE uncontrolled brain, the brain that is "shot to pieces" as the slang of the day puts it, is made and kept so by a way of thinking we easily fall into but do not as easily get out of. This way of thinking is not only mirrored in the irregular pulsations of the brain but is reflected to any or every part of the body. This being the case, it is very evident the terms neurasthenia, hysteria, and melancholia do not satisfactorily describe or define these diseases. Each disease, or the group of diseases should have a name that expresses and explains exactly its cause and character. The names as they stand really mean very little for the reason that in their beginning said

diseases are not diseases of the nerves, the uterus, or the liver as the Greek physicians guessed and straight-way named them neurasthenia, hysteria, and melancholia. Any new name or names for these diseases, to be scientifically exact must be colored by and moulded to not only the condition of the body in these cases but the way of thinking that produces it. The word psychasthenia proposed by Professor Pierre Janet (University of Paris) meets every requirement. Psychasthenia pictures the weak way of thinking that makes and keeps the body weak.

With reference to just how liable anyone is to be the victim of this weak way of thinking, it may be said that the human adult population of the earth is divided into three classes—those who have had, those who are having and those who will have psychasthenia. These sweeping statistics should not alarm us, for they forwarn us of the inevitable attack and forarm us for the conquest of psychasthenia, the commonest enemy of health and happiness.

Psychasthenia is so stealthy in approach, so subtle in its manifestations and so stubbornly resists the ordinary medical treatment that every one should be ready to meet and deal with it the moment it appears. The attack of psychasthenia may come after some infection, autointoxication, or injury. Most often it follows some disappointment of ambition or affection, some business strain or burden of occupation, in a word, something that weighs us down and wears us out.

When we realize that with most of us at best there is some see-saw of brain functioning, some wavering in the process of thinking, some degree of insufficiency of brain control, it is no wonder that we are

always on the verge of psychasthenia. The last word of the psychology accepted today as to the cause and character of psychasthenia is to the effect that it is due to the way we think when we are tired. This dictum—an echo of the once popular materialistic physiology that the brain forms sensations, ideas and acts, as the liver makes bile, has led and still leads us far away from finding out just what happens to us when we do not control the brain. It is true we become tired, even quite exhausted and from this natural fatigue of whatever degree, when we are well, we react readily by resting and sleeping. But there is a kind of fatigue that does not let us rest or sleep, a fatigue that becomes a daily burden in bearing which we feel all but the same as those who are said to have this or that disease, and this fatigue is bred and born of a weak way of thinking which is the tap root of insufficiency of brain control. The suffering that comes to us from this extra fatigue is all but the same as and often as hard to distinguish as far as its symptoms go, from the suffering we have in all the other diseases that have been given a name. This is why psychasthenia, the Proteus of pathology, has foiled and fooled the very elect among physicians and patients from the time the first man or woman lost sufficiency of brain control. The healthy man or woman in the waking hours controls the brain, and all else being equal, the brain and the rest of the body do not falter or fall below par. The controlled brain habitually responds and reacts to what is in our surroundings and what is going on by way of thinking. The rhythmically pulsating brain is a controlled brain and floods itself and the whole body with the tone and energy. In case we do

not control the brain, that is to say, when we let our thinking waver and weaken, when we allow sensations, ideas, and acts to come and go hap-hazards, a well-spring of wretchedness opens within us. Then we are easily depressed, become irritable, misanthropic, even grouchy and filled with fear and worry and needless anger. The head and back ache. Strange sensations come and go here and there in the body, no part of which is exempt from this disturbance and distress. The organs of sense, especially the eyes or ears jangle with over sensitiveness. Irregular heart-beats terrify us. Dogged dyspepsias, stomachic and intestinal, follow us day and night. We are weary when we do not work, we cannot sleep when we feel most like it. In extreme cases of psychasthenia we feel that we are cut off from family and friends and we wait in deepest gloom for the end that never comes, or spend our time conjuring thought of suicide or talking all the time about how sick we have been, are or will be.

The sufferings of the psychasthenes are not imaginary as friends, relatives, and physicians have so often thought and said. These patients are aware, very much aware, that they agonize without relief or release in sight. The Roman galley slaves chained to their oar locks were never more helpless, and hopeless prisoners than those of us today in the toils and coils of psychasthenia, the disease caused by insufficiency of brain control, the essence of which is not a weakness of the mind or nerve but a weak way of thinking.

THE PSYCHOLOGY OF PSYCHASTHENIA

AFTER gathering some of the basic facts to support the proposition that there is a way we think that makes and keeps us sick, it remains to bring that way of thinking to indisputable physical demonstration.

The physical examination of any number of psychasthenes, patients who are sick because they do not control the brain, shows that the pulsation of the brain is habitually irregular, arrhythmic. The physical examination of any number of healthy men or women reveals that the pulsation of the brain is habitually regular, rhythmic. If any number of healthy men or women are tested, while they are experiencing a distinct sensation or forming a definite idea or carrying out a decisive act, the pulsation of the brain becomes faster and firmer but always remains regular. But on the other hand, if the attention of any healthy man or woman is turned aside while they are sensing, ideating or acting, the pulsation of the brain wavers, weakens, and for the moment becomes irregular.

This last test, easy to make, demonstrates physically as nothing else does, the slightest degree of brain dissociation; the minimum of insufficiency of brain control and, therefore, the mildest imaginable form of psychasthenia, from which anyone who is well recovers almost instantly. But the people, who eventually become chronic psychasthenes, unsuspectingly follow the line of this experiment with themselves as subjects, until the habit of not giving their whole attention to normal sensations, ideas, and acts becomes second nature to them and their weak way

of thinking correspondingly inveterate. Mind wandering causes brain wabbling.

Beyond question the irregular pulsation of the brain is the physical, the diagnostic sign of psychasthenia, the disease caused by our indistinct, indefinite, and indecisive way of thinking. For the reason that we can elicit from, and exhibit in, even the well man or woman this irregular pulsation of the brain, so characteristic of the sickness named psychasthenia, brings to undeniable physical proof the inattentive, the weak way of thinking that dissociates, shatters, and scatters the brain as it is found in every case of psychasthenia.

The psychology of psychasthenia is easy to understand after viewing the mechanism and mechanics of the uncontrolled brain. The central fact to keep always in mind is that when we do not control the brain, we are not really thinking, not fully conscious of normal sensations, ideas and acts and in consequence we struggle and suffer mentally and physically as in a nightmare.

When we are well, we control the sense-brain, the part of the brain by means of which we become conscious that we see, hear, taste, smell, and touch things. When through inattention we do not control the sense-brain, we are not fully aware of what is in or what is going on in our environment, not even fully conscious of the most intimate thing, in it—the body. It is then, having eyes, we do not see, having ears, we do not hear, taking food we do not taste it, odors annoy us or we ignore them, handling things we do not feel them. In a word, we do not contact anything closely enough to report accurately the common or the special sensations—we live

in a fog and all sensing is indistinct.

When we are well we focus the idea-brain to one idea at a time and the idea is as definite as the view in a set camera. On the other hand, when we do not control the idea-brain our ideas take one of the following courses: An idea may come partly into the field of consciousness and before we define it another or several others shade in; or an idea may be brought fully to view, but before we are ready to let go of it, wavers, and wastes to nothingness like a whiff of smoke; or an idea may take up its abode in the brain and depress and distress us, as an unwelcome visitor upsets the harmony of a household, the members of which do not know and cannot find out how long the visit is going to last; or an idea may suddenly flash into and out of the brain without seeming connection with anything that goes before or comes after, and this may go on until we are in a state of confusion that borders on frenzy.

When we do not control the act-brain we have very little initiative or executive ability. We scarcely begin to do one thing before we start to do something else. We do not carry on but leave everything unfinished. The desire to act often fades the moment it is felt. The impulse to move even may be absent entirely so that we are like logs carried here and there by the flow of a river, or so fitful that our acts are as undetermined and indeterminate as the movements of a wagon wheel that has run off the axle. Incomplete consciousness of some normal sensation or idea, through inattention, is the source of our indecisive, our ineffective acts.

The healthy man or woman, the strong thinker, shuttles the thread of thought smoothly and swiftly

through the woof of tonic brain cells and fibers weaving distinct sensations, definite ideas, and decisive acts. The psychasthene, the weak thinker, tries to put the thread of thought through a woof of slack and sagging brain-cells and fibers and it sticks, frays, knots, and often breaks so that the patterns turned off are ragged sensations, shapeless ideas and sprawling acts, so characteristic of psychasthenia.

The psychology of health and disease has been given out in as many forms as there are writers on the subject. In general, it has been set forth that there is a way of thinking that favors health and another way of thinking that fosters disease. It has come to be commonly understood, that a robust optimism is all there is to the mental side of well being, and that cowardly pessimism is all there is to the mental side of disease, especially the diseases of the nervous system that are not organic in cause and character. Usually it is not explained, much less brought to physical demonstration, as in these studies, that an attentive way of thinking held to, through thick and thin, develops and reinforces sufficiency of brain control, or that an inattentive way of thinking makes and maintains an insufficiency of brain control. As a balanced ration is the natural and necessary stimulus to normal gastric and intestinal digestion, so an habitual complete consciousness of normal sensations, ideas and acts is the natural and essential stimulus to brain health. The inattentive, the weak way of thinking is the poison, the mental narcotic that numbs the brain, and we addict ourselves to it until we are only partly conscious of normal sensations, ideas and acts, and, therefore, only half wake, half alive. The most terrifying preachment any of us

can hear as a warning against inattention, is that by indulging in reverie, day-dreams, mooning, wool-gathering, mental wandering of any kind, we gradually fill the seven vials that soon or late empty upon us the wretchedness of psychasthenia.

Psychasthenia, the forms and phases of which have been known technically as neurasthenia, hysteria, and melancholia, is no longer to be mistaken for a disease of the body itself. The psychasthenic mind and brain can no more baffle and balk the diagnostician. Nature herself offers the irregular pulsation of the brain as the physical, the diagnostic sign of the uncontrolled, the psychasthenic brain, which has no more hold on the current of our thinking than the heart with crippled valves has on the bloodstream. The irregular pulsation of the brain is as reliable a diagnostic sign of insufficiency of brain control as the signs that indicate valvular disease of the heart, "the leaky heart." The psychasthenic brain is a leaky brain because of our habitual inattention to normal sensations, ideas, and acts.

Psychasthenia is often the sequel to some other disease, but it is always some other disease that takes the life of the psychasthene. At that, one may well wonder if it will not be found sometime that psychasthenia paves the way for bacterial invasion, vitiates the very chemistry of nutrition, and spoils or spends the secretions of the ductless glands. Be that as it may, if psychasthenia never kills us, it fills the cup of our misery to overflowing. As long as they live, psychasthenes hope to get and stay well. We shall soon see that when we are "hipped", as the English say, it takes more than optimism, which more often than anything is merely playing at being

well, to overcome insufficiency of brain control. Now that we begin to know that lack or loss of brain control is the result of a weak way of thinking we can begin to find out what can be done for us, or better yet, what we can do for ourselves when we are psychasthenic.

BOOK III

THE WAY WE THINK THAT CURES US OF PSYCHASTHENIA

CONTROL OF THE BRAIN REGAINED

"A sympathetic person is placed in the dilemma of a swimmer among drowning men, who catch at him and if he give so much as a leg or a finger they will drown him. They wish to be saved from the mischief of their vices, but not from their vices. Charity would be wasted in this poor waiting on the symptoms. A wise and hardy physician will say: "Come out of that", as the first condition of the advice. —EMERSON.

THE SHORT HISTORY OF PSYCHOTHERAPY

EVERYONE who reads is more or less familiar with what is known among physicians the world over as psychotherapy. Broadly speaking, psychotherapy is the treatment of disease by mental means or methods. Four events made and mark the eras in the short history of psychotherapy.

In 1841 Dr. Braid of Manchester, England, found that he could put some people in a peculiar condition of body and state of mind by gazing steadily into their eyes. Later, he found that the same result could be obtained by having them gaze at a small object, held a little before and above their eyes. The effect of "gazing" and "the gaze" being superficially so much like natural sleep, led Braid to call it "hypnosis", and the means of bringing it on—"hypnotism".

At once hypnotism was expounded and exploited by many both in and out of the medical profession as a means of treating disease. Many patients were repeatedly "put to sleep" with seeming benefit. There are authentic records of many surgical operations successfully performed under hypnosis as the anesthetic.

In 1880, Doctor Charcot, "the Napoleon of neurology" in his day, opened a clinic at the Salpetriere, for the study and treatment of disease of the nervous system. Here, after conducting quite to the finish a long series of hypnotic experiments, then and still considered the classics of their kind, he and his colleagues declared:

"Only diseased people can be hypnotized." The basis of this sweeping statement was that "nervous" people not organically diseased, were much more amenable to the hypnotic gaze and gazing than healthy men and women and that their "nervousness" was very much exaggerated and aggravated by suggestions made to them while they were in the state of hypnosis.

In 1884, Professor Bernheim (University Medical School of Nancy) after the most extensive investigation ever undertaken in this direction, gave out an explanation of hypnotism and hypnosis, the very opposite of the one that had been made by Charcot and his followers. After observing thousands of cases, Bernheim declared as follows:

"Hypnosis is induced by suggestion, and suggestibility is natural to all people except the defective, the idiotic, and the insane." Charcot himself came to view the matter in this light before his death which occurred in 1893.

From Bernheim's clinic at Nancy a tidal wave of psychotherapy by suggestion swept over the world. Almost everybody was very much taken with the idea that children could be educated, criminals reformed, drug addicts rescued, sinners converted, business transacted, juries won, and the sick cured by suggestion.

In the first years of our own century Doctor Paul DuBois, Professor of neuro-pathology (University of Berne) proposed to put in the place of the hypnotic and suggestive psychotherapies brought out by Charcot and Bernheim what he called a psychic pedagogy, that is an education, a training of the reason by persuasion for the purpose of successfully treating neurasthenia, hysteria, melancholia, and their various forms and phases.

In substance, DuBois says there is no such thing as suggestion, but there is persuasion on the part of the physician, and as a result there is conviction of cure on the part of the patient. The method of treatment advised by DuBois is this: Having decided by diagnostics approved by all medical men, that the given case is a candidate for cure by persuasion, the physician proceeds by a series of persuasive conversations to lead the patient to the conclusion that his disease is merely what he thinks about how he feels, and that cure begins and continues the moment he comes to that conclusion. While there is much that is simple, direct, and above all rational in DuBois' psychotherapy by persuasion, that is lacking in the hypnotic and suggestive psychotherapies of Charcot and Bernheim, they all fall short of effectiveness in most cases of psychasthenia.

In less than fifty years psychotherapy turned

slowly but surely from the stagy hypnotism and the hit-and-miss suggestion, to rational means and methods. It is safe to predict that in the very near future, psychotherapy will adopt the principles of education and adapt them to the practices of reeducation to prevent and cure psychasthenia, the only disease it can prevent and the only disease it should ever be called upon to treat. The message and mission of psychotherapy by reeducation, charged with immense scientific value and practical appeal, is in no danger of running short of clinical material, for the civilized world is a lazaretto containing half a billion psychasthenes, men and women who at times are sick or sickly because of insufficiency of brain control.

WHY PSYCHOTHERAPY HAS FAILED

A CRITIQUE of psychotherapy in general to be valid in itself and fair to all concerned, considers first of all the claim of rational psychotherapy the best form of it that ever had a vogue in the world of doctors and patients. Nowhere in his writing does Dr. DuBois, who brought out the principle and practice of rational psychotherapy, expound it more clearly and convincingly than in the following paragraphs:

“Well no: it is easier than one would think to change the mental state of a patient, to inculcate in him healthy maxims of medical philosophy; and if the natural state of affairs comes back it is by no means at a gallop, and it is easy to chase it away again. It is evident, that in order to obey these indications successfully and bring about a cure one must have

time—the physician and the patient must hold personal relations for a sufficient length of time.”

“It is necessary, then with nervous patients to know how to get hold of the patient at the start and inculcate in him the fixed idea that he will get well. It is necessary also to maintain the fixity of this idea until the cure, to lead his conviction by means that are always more cogent. In short, in the course of treatment, one must study the mentality of the subject, detect his lack of logic, his exaggerated susceptibility and in the daily conversation modify his natural mentality, for it is to this mentality that one must look for the first cause of the trouble.”

Put in practice, the acid test for all things medical—the generalizations and specifications, laid down by the founders of the hypnotic, the suggestive and the rational systems of psychotherapy—disappointed many an earnest doctor and many a faithful patient. Always at first the physician was liberal enough to lay any failure to relieve or cure the cases in which psychotherapy seemed surely called for, to his inexperience in carrying out the treatment. In due time, however, it was made plain that the failures piled up in spite of long thorough experience in the practice of hypnotism or suggestion or persuasion. Then naturally the physician asked himself the question: “What is the matter with the patients that do not respond to suggestion or persuasion?” The question was all the more pointed in the circumstances for the reason that eminent and reputable practitioners had reported the cure of many similar cases by some kind of psychotherapy. Time came also when many patients asked the physician this question: “Doctor, what is the matter with psychotherapy that it fails

to relieve or cure me—my case is one in which such treatment is indicated?” As a matter of experience it became very evident to many physicians and patients, from the low percentage of relief and cure, that the final principle and practice of psychotherapy had not been found.

It would simplify matters very much for everyone interested in this subject, if there were any reliable statistics by which to measure the failure of psychotherapy. Such figures simply do not exist. Over zealous psychotherapists have always attempted the impossible by treating all kinds of chronic diseases that no therapy has ever cured. Naturally, the number of failures in these cases was very great and the psychotherapists, not the psychotherapies were at fault. Allowing for these inevitable failures, nevertheless, there remains the class of suitable cases in which psychotherapy has failed so many times because of its own deficiencies and defects. In the last analysis, the psychasthenes, the people who are sick because they do not control the brain, belong to the psychotherapist exclusively and as surely as appendicitis patients belong to the surgeon. Even then, what has been considered theoretically as the irresistible force of suggestion or persuasion, meets what for it is practically the immovable obstacle—the uncontrolled brain of the chronic psychasthene. In this deadlock the failure of all the psychotherapies in and out of the medical world, began and continues. If there are no figures that tell just how many psychasthenes out of every hundred, suggestion or persuasion does not cure, there are what is even more to the point, the defects and deficiencies in principle and practice that do show us exactly why psycho-

therapy has failed.

Psychotherapy by hypnotism was not only the first but the most sensational and superficial of the official psychotherapies that failed to keep its promise to cure psychasthenia. In regard to the specific shortcomings of hypnotism as a means or method of cure, Dr. August Forel (Professor of Psychiatry and Director of the Provincial Lunatic Asylum, Zurich) in his book *Hypnotism and Psychotherapy*, published in 1909, said:

“Naturally, when anyone is repeatedly hypnotized for a long time, and especially when the same experiment is always carried out again with him, the phenomena of accustoming appear as they would with any other nerve activity. The most idiotic suggestions appear to him to be plausible. It all becomes more mechanical and automatic, as accustomed achievements, impressions, et cetera, do with us. That is the general law of psychology—i.e. of the work of the brain.”

“After a ripe experience, I maintain that the direct influence of the hypnotist eventually diminishes after long continued and increasing training. The hypnotized gets to know his hypnotist, and his weaknesses well, the fascination of the beginning is gradually lost and auto-suggestion and the contrary suggestions increase. While the suggested portion of the brain activity becomes more automatic and more mechanically adapted, the remaining parts collect themselves together to form an increasingly conscious reaction, to form a not suggested second ego. In this way the belief in general in suggestion and its influence will rather tend to become less. For this reason, one retains more power if one hypnotizes less frequently and if

the suggestion is not given mechanically and not always in the same way. The experiments on persons hypnotized for the first time are, therefore, the clearest and prove to be the best."

Experience also proves that the phenomena of "accustoming" so aptly described by Forel, are not peculiar to psychotherapy by hypnotism. Psychasthenes as easily and quickly get used to the subtlest formulas of the suggestionist and the most benevolent humanities of the persuasionist as to the melodramatics of the hypnotist. There is more to the phenomena of accustoming than appears at first, to account for the failures of all the psychotherapies that medical men have sanctioned. There is another very good reason, the main reason why hypnotists, suggestionists, and persuasionists find themselves marking time before most psychasthenic patients. It has been well known for a good many years that hypnosis is a state of brain-dissociation. It is becoming better known from year to year that the brain of the psychasthene is dissociate, i.e. the parts of it connected with sensing, ideating, and acting stand apart from each other like cogged wheels thrown out of gear. How absurd then it has been for the hypnotist to deepen this state of brain-dissociation in the psychasthenic man or woman and expect them to heed what they can scarcely hear about getting and staying well. Hypnotism when it works to the depth, literally disjoins the cells and fibers of the whole nervous system. Hypnotizing to cure psychasthenia is like pounding the body all over with a hammer to heal a bruise on the hand. Nature resents such an insult. No wonder hypnotism has been called "the great psychological crime."

It took the followers of Charcot, the hypnotists, at least thirty years to find out that they must cure their cases in a few sittings, or they exaggerate and aggravate an ailment they fail to cure by longer treatment. It always takes so long to turn dyed-in-the-wool systematists aside from or around in their course, that there is no telling how long it is going to take the followers of Bernheim and DuBois, the suggestionists and the persuasionists, to find out that they too do very little to lastingly benefit most of the cases of psychasthenia committed to their care. If Bernheim had declared that only healthy people receive and respond to suggestion instead of declaring: "All people are subject to suggestion except defectives, idiots and the insane"; and if DuBois had affirmed that psychasthenes are unreasoning and unreasonable because the brain is dissociate, uncontrolled instead of insisting: "There is nothing but but persuasion, there is no such thing as suggestion", not so many physicians and patients would have been disappointed in the use and effects of psychotherapy by suggestion or persuasion. It is very doubtful if what any psychotherapist says, or the way he says it, has any lasting effects as far as the relief or cure of of psychasthenia is concerned. The formulas of psychotherapy by suggestion, backed by the kindest personal interest and intent have no more effect on most of the living-dead people, scientifically known as psychasthenes, than the same would have on mummies a thousand years old. Persuasive psychotherapy, serenely poised as Dr. DuBois himself, its daily conversations gleaming with the axioms and maxims of a philosophy of health, gets about as much response from a bed-ridden psychasthenic

invalid as it would from a stone image after handing it a rope of pearls. There is no malice, no ridicule in referring to psychasthenes as "dead ones." They have come to a stand-still mentally and physically. They are neither awake nor asleep in the ordinary sense of the word and, therefore, they are not as alive as they would like to be or as all their relatives and friends would like to have them. We know now very well that the healthy adult brain, the sufficiently controlled brain responds perfectly to impressions from without and to impulses from within because the pathways into in and out of it are unbroken in the waking hours. We know just as well also that there are breaks in the pathways into in and out of the psychasthene's uncontrolled brain and that, therefore, it is not responsive to normal sensations, ideas and acts. Psychasthenia is brain-bloc, mind-cloture.

Psychotherapists who know what they are about do not try to hypnotize or suggest or persuade morphine addicts, while deadened by their full daily dose, to help them give up the habit of taking the drug. Yet it is not less difficult to lodge suggestion or persuasion in the brain of psychasthenes habitually "doped" by their deadening and deadly way of inattentive, weak thinking. The life of most psychasthenes is a phantasmagoria of insufficiency of brain control from which they do not rouse themselves, and no words spoken by another never so fascinatingly or forcefully rouses them. It is the dissociate, the uncontrolled brain, that resists and routs, that makes vain and void the psychotherapy that relies solely on word of mouth.

THE FUNDAMENTALS OF THE PSYCHOTHERAPY
THAT SUCCEEDS IN THE TREATMENT
OF PSYCHASTHENIA

ONE by one what were taken at first for the verities of psychotherapy proved to be mere vagaries that did not even point to the true means and methods of treating and curing psychasthenia. Looking back through the light of the facts about the way we think when we are well and the way we think that makes and keeps us psychasthenic, it seems strange that anyone ever believed that real psychotherapy could even get a start much less reach its goal by way of hypnotism, suggestion, or persuasion.

None of the psychotherapies that have place and power in the world today, not even the ones sanctioned by medical men themselves, are any too sure of the diagnosis that leads to the prescription of the mental treatment they propose and profess to give. Furthermore, no psychotherapist of any cult or school in or out of medicine, has any means of knowing positively that the command of the hypnotist or the formula of the suggestionist or the argument of the persuasionist takes hold of the patient, "touches the spot" as the vernacular puts it. The burden of proof to the contrary falls on those who do not agree with these statements.

The day of scientific diagnosis and treatment dawned when physicians began to find the physical signs of health and the diagnostic signs of disease. Medicine will reach its zenith when all the physical signs of health and all the diagnostic signs of disease have been discovered. The modern physician does

much more than listen to what patients say about their sickness, he examines and tests the body of the patient region by region, organ by organ. He enters practice thoroughly trained to recognize almost at once, as far as they are known, the physical signs of what is normal and abnormal in the structures and functions of the human organism. His exact knowledge of physical signs insures the early diagnosis of disease, reveals the condition of the body in the stages of disease, guides, and guards treatment throughout the course of disease and informs him when Nature and medicine are working together for the recovery of the patient. Hitherto, psychotherapy has had no such exact and exacting diagnostic as the above for its mainspring and mainstay. Psychotherapists, even though they may be physicians and properly qualified in every other particular, do not contact directly, positively, physically, the uncontrolled brain of psychasthenia as they do the congesting, the solidifying and the solid lung of pneumonia. Psychotherapy as known at present, makes its appeal to the mind of the patient by strictly verbal means and methods, and it is no wonder that psychotherapists say so much and do so little to find out what is really the matter with the patient that a real psychotherapy can really cure.

The physical diagnostic of it not being generally known as yet, the diagnosis of psychasthenia given out by the conventional neurologist is still quite nominal, symptomatic rather than anatomic, vaguely pathological and does not contain at all the psychological element that causes and characterizes psychasthenia. "Nerves", is the blanket term for neurasthenia, hysteria, and melancholia, all of which

are but forms and phases of psychasthenia, the disease caused by insufficiency of brain-control, and it covers a multitude of diagnostic mistakes. This diagnosis of psychasthenia leads to all sorts of physical treatment and psychotherapy, as a last resort, but without lasting results. There is not the slightest doubt about the whole body of the psychasthene being somewhat under nourished, that the cells and fibers of the entire nervous system are wilted and slightly shrunken but all this is really quite beyond the ken of the physician at the bedside and in the consulting room. All this and very much more can be inferred and gathered into glittering generalities while the patient still lives or can actually be demonstrated by microscopic examination of preserved and mounted sections of the brain anytime after the patient dies, but that is not the time to make the diagnosis of psychasthenia. The question that comes up right here, the question that will not down, the question that must be answered before any real science and art of psychotherapy arrives and achieves is this: Is there anything in the body of the living psychasthene that is the physical sign, the diagnostic sign of the uncontrolled brain? Yes: There is one thing—the irregular pulsation of the brain. The physician, then, after making all the appropriate and approved tests to rule out all other diseases, perceiving by the sense of touch the irregular pulsation of the brain, drives and clinches the nail of diagnosis in case of psychasthenia.

It is not enough, however, to make an accurate diagnosis of a disease—something must be done to cure it after diagnosis decides that cure is possible. In the battle with curable disease the diagnostician

locates, but the therapist attacks and reduces the strongholds of the enemy of health. The chief objective of scientific treatment is to turn what is abnormal towards what is normal. Effective treatment does more than amuse the patient while Nature works the cure—it compels Nature to make the cure. While therapeutics takes its cue from Nature, diagnostics shapes the means and method of cure. There comes a time, for example, in the pneumonia case, when if all is going well, the physical signs of lung disease, begin to give place to the physical signs of lung health. The physician meets the demands of scientific treatment in any sickness if what he does for the patient brings about some such favorable change, sooner than Nature would if left alone with the case.

In the psychotherapy of yesterday or today, there is nothing like the above diagnostic and therapeutic working together for the restoration of health. Psychasthenia has never been diagnosed, never been treated as it should be. Psychasthenia is a functional disease caused by insufficiency of brain-control, an habitual incomplete consciousness of normal sensations, ideas and acts, even as pneumonia is a disease of the lung caused by bacteria. Although psychasthenia and pneumonia are as far apart as the poles as to their causes and their diagnostic signs are not at all alike, they are, nevertheless, physical and demonstrable to the senses. The physician by the sense of hearing compares the sounds of lung disease with the sounds of lung health and thus arrives at the diagnosis of the disease and directs treatment accordingly. It is possible now for the physician, by the sense of touch to compare the irregular pulsation of the un-

controlled brain of the psychasthene, with the regular pulsation of the controlled brain of the healthy man or woman, and then decide what to do for the given case of psychasthenia. We have seen already that the irregular pulsation of the brain as the diagnostic sign of insufficiency of brain control, is found in every form and phase of psychasthenia. It is now in order to demonstrate physically, that this diagnostic not only reaches to and through every stage of the disease but that every step in the treatment that cures psychasthenia corresponds with and conforms to it.

In view of the fact that most cases of psychasthenia relapse after the physical therapies and even the psychotherapies of the day have done their best, there is very little to encourage these patients in regard to getting and staying well. It goes too far, however, for anyone to say: "Once a psychasthene always a psychasthene." Diagnostics of other diseases go far enough to enable the physician to know when the patient begins to show the physical signs of the process and progress of becoming well. Examining the pneumonia patient day by day, the physician hails with delight the physical signs that the lung begins, continues and finally "clears up." As yet there is nothing of the kind in any psychotherapy in the world, to help the physician as a psychotherapist, decide that the uncontrolled brain is becoming controlled, that recovery from psychasthenia is beginning, continuing, or completed.

After determining by the sense of touch that insufficiency of brain control has made the brain "tense" or "excited" or "torpid," if the brain of any psychasthene is examined repeatedly by the same

means it is found at times that regular pulsations take the place of the irregular ones. The alert observer meets this phenomenon often enough to be struck by its significance. This is the hint Nature gives us that insufficiency of brain control can be overcome, that the cure of psychasthenia is possible. It is doubtful if many cases of psychasthenia would get and stay well if left to this seemingly spontaneous change for the better, which at best is very fitful and fleeting. Nevertheless, these momentary stabilizations of the brain do occur. In other diseases the physical signs that foreshadow the return of health, no matter how feeble they are at first, become pronounced and progressive. This is not so in cases of psychasthenia, unaided. Psychasthenes "sit at home with the cause" of their disease, are better one minute and worse the next, so that the physical sign of their possible restoration to health, mentioned above, is set aside almost as soon as it appears. The tug of war between sufficiency and insufficiency of brain control goes on most of the time and deadlocks the brain and mind activities of the psychasthene. At that, in the interests of all psychasthenes, the investigator follows from the beginning to the end this momentary change from insufficiency to sufficiency of brain control, this instantaneous recovery from psychasthenia, seeing in it the clew to what can and must be done to stop insufficiency of brain control which means the end of psychasthenia.

The problem before psychotherapy by reeducation is to find a mental means or method of standardizing and stabilizing the pulsation of the uncontrolled brain. In the studies we have made of the way we think when we are well and the way we think that

makes and keeps us psychasthenic, it was set forth clearly enough for every practical purpose, that the regular and irregular pulsations of the brain are respectively the physical signs of sufficiency and insufficiency of brain control, the indexes of the habitual, complete or incomplete consciousness of normal sensations, ideas and acts, the physical proofs that we are thinking or not thinking the way we should. In the light of these data, all physically demonstrable, it is very evident that when the uncontrolled brain suddenly, if only for an instant, exhibits the physical sign of being controlled, it is because the psychasthene for the time being is fully conscious of some normal sensation, idea or act, is thinking the way a healthy man or woman should think. Psychotherapy by reeducation, the only psychotherapy worth and worthy the name, seeks a mental means or method of bringing on and lengthening these periods in which the psychasthene controls the brain. If any psychasthene earnestly makes the effort to become fully conscious of some normal sensation, idea or act, it being a simple matter to arrange for such a series of experiences, examination of the brain at the time by the sense of touch, shows that the pulsation of the brain not only becomes regular and energetic but runs on that way for some time. Here we have the physical sign of brain control regained, pronounced, and progressing. Here we see the psychasthene deliberately take the first steps away from that path of painfulness, *via doloroso*, called psychasthenia. Here we also find in the rough the models of the way we think that cures us of psychasthenia.

In treating other diseases, the physician does every thing for the patient that rational experience and

scientific research warrants. As a psychotherapist he is bound to do the same for cases of psychasthenia. With a thorough knowledge of what the regular and irregular pulsations of the brain signify, the psychotherapist proceeds systematically to teach and train the psychasthene to make the efforts to regain sufficiency of brain control. Ordinarily, after a month or so of such treatment, the practical details of which we shall take up very soon, it is physically perceptible, that the pulsation of the brain has become habitually regular which means that insufficiency of brain control has been overcome, that psychasthenia is a thing of the past for the given individual.

In order to bring about this most desirable result, psychotherapy forsakes the mysterious and the traditional verbal means and methods of hypnotism, suggestion, and persuasion. Psychasthenes, the victims of brain bloc, do *not* "take in" as a rule what any hypnotist, suggestionist, or persuasionist says to them about getting well and staying so. The psychotherapy by reeducation, to which we are about to commit all cases of psychasthenia, spares its words except to tell these patients how to intelligently make the efforts to regain control of the brain. Properly taught and trained, psychasthenes do the work of curing themselves or it is never done. The psychotherapists who reeducate psychasthenes, know when the teaching and training "goes home" for the reason that momentarily or permanently the pulsation of the brain changes from the irregular to the regular type. The very fact that repeated efforts to become fully conscious of normal sensations, ideas and acts turns insufficiency into sufficiency of brain control, motivates anew the principle and practice of psychother-

apy. The innovation amounts to this: In order to regain sufficiency of brain control, psychasthenes must be taught and trained to think again the way they did when they were well. As the normal man or woman gains sufficiency of brain control by education, so any man or woman abnormal as far as psychasthenia goes, regains sufficiency of brain control by reeducation.

Observation, experiment and experience form the tripod on which rests all therapy—the treatment of disease. Following the same lines with reference to the pulsations of the brain, brings us face to face with the desiderata in and the fundamenta of the psychotherapy that succeeds in curing psychasthenia. This psychotherapy adopts the principle of education and adapts it to the practice of reeducation. This principle and practice guided and guarded by thorough knowledge of the regular and irregular pulsations of the brain, as the physical signs of sufficiency and insufficiency of brain control, allies and aligns psychotherapy for the first time in its history with the diagnostics and therapeutics of modern medicine.

PSYCHOTHERAPY BY REEDUCATION THE HOPE OF THE PSYCHASTHENE

A little over a generation ago Dr. George M. Beard, an American physician, wrote a great pioneer medical book entitled—*Neurasthenia*. Before that time, in this country at least, the disease he defined and described as neurasthenia, was known among medical men and people in general as “nerve weakness”, “general neuralgia”, “spinal irritation”, “neu-

rosis", "nerve trouble", "nervous excitement", "nerve exhaustion", and "nerves". No name for any disease was ever more warmly welcomed by all concerned than neurasthenia and being magically elastic was often stretched to cover almost every thing obscure and obstinate in the domain of disease. People afflicted with lack of nerve strength as the word *neurasthenia* literally means, felt sure that at last their sickness was fully understood and that its cure was certain by treatment that quieted or braced the nerves. Dr. Beard wrote of the sickness, we now commonly call nervous prostration, as a physical disease to be treated by physical means and methods. That practice has generally been followed, and now more than ever before, we are rested, dieted, massaged, exercised, electrified, bathed and dosed to "build up" "broken down" "nerves". Some cases of the kind recover by such treatment, but most of them, although they seem to improve for a time, soon or late fell back again and again, until in addition to nervous prostration, those who can afford it, have the "nerve specialist" and "rest cure" habit. Nothing has been done to really prevent so called nervous prostration and almost nothing has been done to actually cure the patients Beard chained to doctors with the word—neurasthenia.

"Appearances are deceptive", as the old saying goes, and they were never more so than in the instance of the symptoms grouped under the name neurasthenia. Though all physicians admit the disease thus described is purely functional in its nature, they accept and use the term neurasthenia as if it were the true name for the most elusive of all ailments and treat it as a disease located in the nerves themselves.

This is only one of the many examples medical history records of a disease named and treated before its real cause and character was known. Until fifty years ago physicians were treating with poultices and opiates a disease they called "inflammation of the bowels". The almost hundred percent death rate in these cases, eventually led to the post-mortem discovery that the disease was inflammation of the vermiform appendix—appendicitis—the real name for a disease, the remedy for which is surgery. The futilities and fallacies of the physical and the mental treatment that has been given to date for so called neurasthenia, are slowly but surely leading both physicians and patients to realize that there is a way of thinking that causes and characterizes this disease and that there is another way of thinking that cures it. While the name of a disease in itself has nothing to do with failure or success in treating it, the contention here is that the name of any disease should be the crystalized outcome of fact instead of fancy and this applies to the treatment of it as well. Exact diagnosis and effective treatment justify changing the name neurasthenia to one that signifies where or what the disease really is. Neurasthenia has been a misnomer from the very first and is on the way to the limbo of obsolete medical terms.

The physical and mental treatment prescribed even by their ablest and most advanced advocates for the miscalled neurasthenia, being without lasting results in most cases, it is very evident that said treatments do not reach the cause, are not carried out in accord with the real nature of the disease. No one has ever set down in black and white, the vast number of the sick who have had some region or

part of the body treated for a disease that was not there. The modern diagnostics of internal medicine reduce to the minimum the possibility of many such mistakes in the diseases with which the physician ordinarily meets, except the misnamed and mistreated neurasthenia. In typical cases of nervous prostration, as neurasthenia is ordinarily called, although the findings of thorough physical examination are negative or negligible, it is peculiarly and particularly unfortunate for these patients, that physicians still try to relieve or cure them by giving them something to take for or by something to put on some region or part of the body that is not the seat of the disease. This mediaevalism prevails in the medical practice of today, simply for the reason that as physicians and patients we are slow to accept the fact that a weak way of thinking rather than a weakness of the nerves distresses and disturbs the body in so many regions and parts which in and of themselves are not diseased at all.

In the almost invariably fatal cases of what used to be called "inflammation of the bowels" only a few post-mortem examinations were needed to set the whole medical fraternity right in regard to the name, nature and treatment of the disease we know now is appendicitis. As there are no fatalities in cases of what have been called neurasthenia, treated or untreated, the cause of death being some other disease, it is very doubtful if the post-mortem study of any number of such cases, even if that were possible, would yield anything very much more worth while than what the physician has already observed in the uncomplicated living cases. Even so the ante-mortem examination of any nervous prostration

patient is bound to become more searching than it ever has been, and it never will be complete until the diagnostician gauges physically the phase and degree of weak thinking, the insufficiency of brain control, that is reflected in and referred to so many regions and parts of the body by way of the nerves distributed thereto. At present there is no way of doing this except by means of the trained and experienced sense of touch, and it suffices for every practical purpose. If all the coverings of the living adult human brain were the clearest glass, we could not learn as much about insufficiency of brain control and its effects so vividly objectified in the body of the psychasthene, as any intelligent investigator, professional or lay, can learn about it by systematically feeling the irregular pulsations of the brain. As abdominal section bares the diseased vermiform appendix, so the experienced sense of touch contacts the dissociate, the uncontrolled brain, made and kept so by a weak way of thinking, the weakness of which expresses itself first in the collapse of brain functioning and then in every or any region or part of the body to and from which nerve fibers run. For the very reason that this causal mental element, this characterizing psychic factor, thus brought to light, is lacking in the name neurasthenia, it should be erased, and psychasthenia, which describes the weak way of thinking and its effects, put in its place. Furthermore, as the condition of the appendix indicates what the surgeon must do for the case of appendicitis, so insufficiency of brain control that has gone to the point where the brain is "tense" or "excited" or "torpid", shows the psychotherapist what to do for the case of psychasthenia.

In cases of psychasthenia, the physicians who have tried to make the mind well by treating the body have as signally failed as those who have tried to make the body well by treating the mind. As a matter of too frequent experience, after long rest, regulated diet, skilled massage, all the modalities of electricity, special baths, active or passive exercise, sedative or stimulant drugs, and then something called psychotherapy have been tried and taken in good faith, most psychasthenes remain psychasthenes, the victims of insufficiency of brain control. Face to face with this stubborn fact these patients go on seeking treatment that will cure them, while liberal and rational physicians are bound to do everything in their power to relieve or cure sickness of any kind, in cases of psychasthenia, they must be doubly sure that they minister to health and that they do not encourage, exaggerate, or aggravate disease. Psychasthenia is a brooding dragon of delusion, and both physicians and patients must wield weapons against it that have both point and edge. Physicians themselves are deceived and without intent deceive psychasthenes when they treat some region or part of the body not diseased in or of itself but which merely mirrors the misrepresentations of a weak way of thinking, an habitual half consciousness of normal sensations, ideas and acts.

The ineffectiveness of the physical and mental treatment of psychasthenia, as given at the present time, comes under the following counts: Interning psychasthenes to rest the body, even though they are placed at the sea shore, the mountain side, or any where fashion, convenience or necessity decides, does not stop the restlessness of the mind that races them

over the courses of past, present, or possible future suffering.

Forcing nutrition to the point where the body weighs exactly what it should, does not at the same time fill out the very lean inclination and ability so characteristic of psychasthenes to think the way they should, steady or strengthen the faulty and faltering consciousness with which these patients try to carry on in the battle of life.

Using all the seemingly sensible systems of manual, mechanical, and medicinal treatment, merely spurs a badly jaded mentality and does nothing directly to reorganize and reenergize the dissociate, the uncontrolled brain to the point past the possibility of immediate or remote relapse into psychasthenia.

Turning to the hypnotism of Charcot, the suggestion of Bernheim, or the persuasion of DuBois as a last resort, none of these verbal psychotherapies revive and restore the dissociate brain, the dissociate consciousness of most chronic psychasthenes, any more than the dead can be quickened by talking to them ever so compellingly, insinuatingly or logically.

The very great failure of the physical and mental treatment of psychasthenia has been inevitable so far for the reason that neither those convinced of the mental cause and character of the disease, nor those sure it is nothing but a semi-starvation of the nervous system, have known the physically demonstrable diagnostic sign of the weak way of thinking that is the cause of and the clew to the care and cure of it. Now that there are physically demonstrable signs of the mental cause, character and cure of psychasthenia, it follows that the psychotherapy, the effects of which can be physically proved in every step and stage of the

treatment of any case of the kind, supplants rather than supplements any other treatment for psychasthenia.

Obviously, unless psychotherapy makes radical remedial changes in the weak way of thinking, the psychasthenic habit of thought, there are no lasting results from it. The flaw in and the fault of all psychotherapy, hitherto, has been that psychotherapists have had no reliable means of knowing, whether those seeking or needing such treatment were conscious or unconscious of normal sensations, ideas and acts or capable of becoming or continuing to be conscious of them. Psychasthenes are not well, and they are not sick in the sense that they are defective, idiotic, insane or otherwise functionally or organically diseased. Psychotherapy has done so little for this class of patients for the reason it has never taught or trained them to hold on to normal sensations, ideas and acts long enough to become habitually fully conscious of them. This cannot be done merely by the use of words in any shape or form. There is need, urgent need for a psychotherapy that is something more than catch words often repeated, set phrases rung in endless changes, formulas that have no spark of truth in them, or doctrines that deaden when applied to life and living. For educational purposes in general, we rely not so much on what the teacher says on the subject but how conscious the student becomes of the aim and object of the teaching. Why should it be otherwise when it comes to psychotherapy? Physicians who follow the hypnotic suggestion or persuasion psychotherapies have heard despairing psychasthenes say: "Doctor, I realize, as you say, that all my troubles come from not controlling my-

self, my thoughts, but you have not shown me how to do this." These patients soon find out that what is said to them about getting and staying well, no matter how suggestive or persuasive the words, does not lodge in the brain, does not become ingrained in the mind or work out in the daily living but runs in one ear and out of the other. Psychotherapy is a poor thing, indeed, if it is not equal to putting a stop to this leak which is a loss of life itself.

Healthy people gain sufficiency of brain control by education or experience. Education at its best is systematized experience. Sufficiency of brain control that insures the habitual complete consciousness of normal sensations, ideas and acts, gradually develops. Infants, children, and adolescents are what they are as far as thinking, consciousness, is concerned because the brain is not fully grown. Healthy adults come into the fullness of sufficiency of brain control because structurally and functionally the brain is mature. In such individuals the pulsation of the brain is habitually rhythmic, the physical sign of the sufficiency of the control they have over it. When there is lack or loss of brain control, the pulsation of the brain is habitually irregular, the diagnostic sign that the individual does not fully experience sensations, form clear ideas, or carry out acts effectively. What reason is there for believing that the ability to control the brain can be regained except by using it in accord with the methods of education adapted to the needs of the psychasthene? As "Education" is the slogan of the civilized world to stress the culture and improvement of the healthy brain, so Reeducation becomes the watchword of the psychotherapy that gets and keeps the confidence of physicians and

patients, when they come to deal with psychasthenia, the sickness caused by insufficiency of brain control.

Filled with the new wine of ultra psychology, cultists declare that disease is caused by a wrong way of thinking and that all diseases from baldness to cancer can be cured by a right way of thinking. It is very doubtful, however, all moral considerations aside, if any part of the human body is as directly influenced for the worse or the better by the way we think as the brain itself, the organ as mobile to any kind of thinking as mercury is to varying degrees of heat. Already we have witnessed an experiment that can be repeated any number of times with the same good results, viz: that the psychasthene making the effort to think as when well, trying to be fully conscious of normal sensations, ideas and acts, elicits and exhibits temporarily a regular pulsation of the brain, the physical sign of returning sufficiency of brain control and consequently, the physical sign of returning brain health. The evoking of this physical sign of recovering or recovered brain health by the patient's own efforts is a phenomenon of returning health without precedent or parallel in the whole range of therapy, physical or mental. Brain functioning as the regular and irregular pulsations objectify thinking or not thinking the way we should, is barometric of the fair or foul weather of the mind. There would be no hope at all for those who are sick because they do not control the brain, ever getting and staying well, if it were not for the invincible fact that anything that gets and keeps their attention on a normal sensation, idea or act long enough for them to become fully conscious of it, instantly or constantly regains for them sufficiency of brain con-

trol. In general it may be said, that the means and method of regaining sufficiency of brain control, of starting and finishing the cure of psychasthenia, is for the psychasthene to learn to think over again the way they did when they were well, that is to say, to renew the habit of being fully conscious of normal sensations, ideas and acts as they had it before the weak way of thinking, which is psychasthenia, had its way and overwhelmed the functioning of the brain. We are now in possession of the basic facts, that clear the ground for the advances and achievements of the science and art of psychotherapy by reeducation, which is the hope of the psychasthene.

When sickness, by all diagnostic signs and tests, proves to be psychasthenia, is what it is because of a physically demonstrable insufficiency of brain control—*reeducation is the scientific method of healing and curing it*. From the standpoint of the physician, as a psychotherapist, the treatment and cure of psychasthenia is a matter of reestablishing the rhythm of brain pulsation. From the standpoint of the psychasthene as a patient, reeducation is learning to think distinctly, definitely, decisively once more. These standpoints are the poles of one principle and practice. In the psychotherapy by hypnotism, suggestion or persuasion, the psychotherapist is a monologist and in the slang of the theater, "the whole show". In the psychotherapy by reeducation, the patient plays the star part. After being told and shown how psychasthenes make the effort themselves, or it is never made, to wipe the stigma of insufficiency of control off the brain and thus free themselves from the aches and pains, the fears and worries, the despairs and despondencies so characteristic of psychasthenia.

No matter what formal exercises may be designed to stimulate and standardize mind or brain activities, soon or late, psychasthenes in order to complete the regaining of sufficiency of brain control must apply the principle and practice of such exercises to becoming conscious of their own normal sensations, ideas and acts. Why not begin and carry on the reeducation of psychasthenes by pointing out to them to begin with this very natural principle and practice? It is just as easy for any psychasthene to try to become fully conscious of some normal sensation, idea or act as it is to try to become fully conscious of something that is supposed to awaken normal sensations, ideas and acts. The education that in the first place develops sufficiency of brain control in young normal adults follows the former natural method. The reeducation that regains sufficiency of brain control for the psychasthene and cures psychasthenia does not go outside of this simple and spontaneous way of doing it.

This primer of education and psychotherapy by reeducation broadcasts the simple and easy way for psychasthenes to bring the brain to instant and constant control by their commencing to grip at once with normal sensation, ideas and acts, long enough to become fully conscious of them. It may seem rather kindergartinish, especially to university graduates who have become psychasthenes and have been the despair of themselves and the defeat of their physicians, that the cure of their psychasthenia starts the moment they resolve to sense and ideate and act not as if they were well but as they did when they were well. The results of doing this systematically are often so surprising, and so satisfactory all the time, as to set aside any objections to following such a course

in reeducation.

It may disappoint many imbued with the psychotherapy that proposes and professes to avail itself of the powers of a super or sub consciousness, that somehow comes down or up from somewhere to somehow cure human ills, to find that as far as the treatment and cure of psychasthenia is concerned, the every day waking consciousness is all and does all that they claim for the ultra consciousness. The thinking, the consciousness we have always with us normally during the hours we are awake, is what we so very often let lag and lapse to the point where we become and remain psychasthenes, weak thinkers, until we learn better. In reeducating psychasthenes it is never a question of the lack or loss of mind with which they have to contend but the uncontrolled brain that uses them and temporarily prevents them from using it. Normally the brain is the bridge that the train of our thinking crosses. The uncontrolled brain functions in parts widely enough apart to prevent the traffic of thought from crossing as it should. That the brain of the psychasthene can be rebuilt, can be made associate, coordinate, viable for thinking by repeated efforts on the part of its owner to be conscious of the thinking, is the central concept in the psychotherapy by reeducation. In the psychotherapy by reeducation mind and brain are considered inseparable and inseparable and in effect reeducation is the reformation of the brain. It is always possible for psychasthenes to have this work in hand until it is done, and for that reason we shall follow them rather than their psychotherapists, through the steps and stages of the reeducation of the brain that cures psychasthenia.

THE REEDUCATION OF THE SENSE BRAIN

TELLING and showing psychasthenes that a weak way thinking rather than a weakness of the nerves makes and keeps them sick, prepares them to take up and carry on the work of treating and curing themselves. The first stage of this work is the reeducation of the sense brain.

The term sense brain specifies collectively the parts of the brain in and through which, when we are well, we think about, become conscious of normal sensations—special and common. These areas of brain cells and strands of nerve fibers form the bulk of the under and back sides of the brain and are the central mechanisms, the internal organs of sense by means of which we actually see, hear, taste, smell and touch things. It should be clearly understood that in health a system of intercommunicating nerve fibers associate and coordinate the structures and functions of the sense brain with those of the idea and act brains.

Psychasthenes, preoccupied with their peculiar sufferings, left to their own devices are not really thinking but wandering mentally. This weak and weakening way of thinking, this painfully ingrowing consciousness, cuts them off from their surroundings and their bodies, dissociates, uncouples the cells and fibers of the sense brain itself and breaks the connections with the idea and act brains. This breaking up of the sense brain impairs its functioning and veils, muffles and numbs sight, hearing, taste, smell and touch. The healthy man or woman gains and keeps the keen ability to think as far as sensing goes, develops sufficiency of control of the sense brain by paying strict attention to the impressions made upon

them by the objects of sense. The whole of the primer lesson in the reeducation of the sense brain centers in the principle and practice of intently and intentionally sensing. The psychasthene regains sufficiency of control of the sense brain, simply by learning over again to think about, to be fully conscious of what they should see, hear, taste, smell and touch.

Psychasthenes do not have to go out of their way to exercise the sense brain to regain control of it. The routine of the day offers many opportunities and occasions for doing this effectively. It is often the case after a day of utter wretchedness and a night made worse than wretched by sleeplessness that the psychasthene is "a dead one" in the morning. It is then, instead of getting up and going about the affairs of the day half asleep or lying in bed half awake, bemoaning their fate or dwelling on how battered they look or how beaten they feel, they should decide to wake themselves up, all over through and through by putting themselves in direct contact with what is in their surroundings that naturally and normally appeals to the organs of sense, the eye, the ear, the hand, etc. It is really very easy for them to do this, and to begin with they are only asked to try to do it. All they need do is to look at something and be actually conscious of seeing it, to listen to some sound and hear nothing but that, to eat something and get its flavor and odor, to touch something and really feel it. This is not saying that the first time psychasthenes try to "bring themselves to" by this reeducational method that they will succeed or if they do that the effects will last all day; but it is saying without the fear of successful contradiction that this is the very

natural and the very best way to think to overcome the inertia of the uncontrolled sense brain. If, the first time they try, psychasthenes do not clear the head from "the hang over" of fear, worry, sadness or suffering that so often follows the debauch of weak sensing, let them remember that maybe for years they have had no control of the sense brain. Then they will be the more inclined to try again and again to get awake and stay awake by making and keeping the conditions for the full response and reaction of the sense brain so necessary to their recovery of health.

Psychasthenes that have been disappointed in the results of much physical and mental treatment, usually cling to the illusion that they will be better or well at some other time in some other place, in some other circumstances or conditions or by some other treatment they have never tried or that will be discovered for their special benefit. Psychotherapy by reeducation comes forward here to tell and show such patients that the time for them to begin to get and stay well, absurd as it seems to them at first, is when they are sickest, that the place in all the world most favorable to this is just where they are, that the very easiest and most effective means and method of treatment is always at their beck and call and consists to begin with in their making intelligent, earnest efforts every little while every day to be fully conscious of normal sensations, thereby regaining control of the internal organs of sense grouped as the sense brain. It is really easy for them to do this by actually seeing what they look at, by hearing what they listen to, by noticing the flavors and odors of food and by feeling what they touch. In a word, they must learn to Fletcherize sensations. In this as in all

else, that is really worth while, "there is no excellance without great labor." At any cost of time and taking care, psychasthenes must learn anew to be fully conscious of normal sensations by paying strictest attention to them. Until psychasthenes realize how much of the time they are withdrawn from their surroundings and are not connected with their bodies and that this habit sometimes is a peril to life and limb and that it is always a source of suffering, they do not give themselves without reserve or complaint to the principle and practice of reeducation of the sense brain. Then their listlessness, which easily becomes a bare laziness, gives way to interest and intent and their recovery in this particular often dates from the very moment they realize the difference between having and using both the external and internal organs of sense. Ordinarily many trials are undergone before this is clear to them.

Even when the brain and the body are intact and, therefore, capable of sufficiency of functioning, carelessness in the way of thinking, in the mode of being conscious of normal sensations, ideas and acts, causes some phase or form of psychasthenia. An insufficiency of control of the sense brain is the gateway to much suffering. As the full consciousness of sensations is essential to the full consciousness of ideas and acts, education and reeducation logically begins with the sense brain. In order to gain or regain sufficiency of control of the sense brain, even those who are well and especially those who are psychasthenic, must carry their training of it to the point where what they see, hear, taste, smell and touch is reported in consciousness with photographic accuracy. Habitual distinct sensing is the proof to any-

one that they have gained or regained sufficiency of sense brain control.

THE REEDUCATION OF THE IDEA-BRAIN

EVEN though many years of weak sensing may have littered and cluttered the pathways into in and out of it, the psychasthene easily and quickly regains control of the sense brain, by intent and intentional use of the external and internal organs of sight, hearing, taste, smell, and touch. The reeducation of the sense brain, however, is child's play compared with what every psychasthene must do to regain control of the idea brain.

The term, "idea brain" specifies the areas of brain cells and tracts of nerve fibers that form the mass of the five lobes of the brain. These are the mechanisms of ideation, the organs in and through which, when we are well, we think about, become fully conscious of ideas. Intercommunicating nerve fibers associate and correlate the cells and fibers of the idea brain with those of the sense and act brains.

The *Psychasthene* thoroughly taught, soon learns to take the mental steps that lead to and end in distinct sensations. Sensing our surroundings and our bodies is a very vivid experience and unless we willfully ignore it, sufficiency of sense brain control develops very naturally and satisfactorily. When it comes to ideating, the process of forming ideas, which some psychologists say is indirect experiencing, none of us well or psychasthenic, realize any too much about becoming or being fully conscious of it. Our system of education fails chiefly in that it does so little to train students to be as fully conscious of ideas

as they are of sensations. The futility of all psychotherapy, except by reeducation, is that it does nothing to bring us to the habitual full consciousness of ideas that prevents and cures psychasthenia.

Leaving it to the psychologists to split hairs over where an idea comes from, what it is in itself or what becomes of it after leaving consciousness, the psychasthene seeks first aid to regaining control of the idea brain, and finds it in the meaning of the word idea and its derivatives as defined in standard dictionaries. Quoting one authority, an idea is:

1. Any mental image regarded as a copy or representative of some really existing thing or condition.
2. A supposition or impression; as, he conceived the idea that his children hated him; I have an idea that it can be done.
3. A mental picture of something desired, proposed or planned; a contemplated performance or procedure; as, he went to London with the idea of going into business there.
4. A mental picture of something excellent: ideal; the American idea of government.
5. A mental image picture, or representative of a sensible object, especially an object of sight; hence, the mental representation or notion of any spiritual and unpicturable object; as, an idea of a house.
6. Philos. In Platonic thought, the true archetype.
7. The embodiment of a conception; Gr. *idea*, form, *idein*, to see. "Idea" is in Greek a form or an image.

The present popular use of idea makes it signify any product of mental apprehension or activity, considered as an object of knowledge or thought; thus it coincides with the primitive sense at but a single point—that an idea is mental as opposed to any thing substantial or physical; thus, almost any mental

product, as a belief, conception, design, opinion, etc., may now be called an idea." From such authoritative definitions one gathers that in Greek an idea meant something the mind sees. From the viewpoint of psychology, it is safe to say that when we are well and awake and not sensing or acting we are ideating—thinking about, conscious of an idea, a definite mental image, a clear mental picture. It follows that for the practical work of education or reeducation, an idea is a mental picture, ideation is mental seeing, and the idea brain is the mind's eye.

Psychasthenes are what they are and suffer as they do largely because they have lost or never had the habit of being fully conscious of their ideas. When such patients are closely questioned, it is hard for them to tell just what they are thinking about at the time. They know that something is going on in the brain, that there are shadows that shift in the mind. This confusion of ideas often leads them to believe that they are thinking altogether too much for their good and they say: "If I could only stop thinking, I would be all right." In this particular they are greatly mistaken. As a rule they are not thinking at all, but letting a half-consciousness of ideas fog and fag the brain. Thinking implies and involves the full consciousness of ideas, a sufficiency of idea brain control. This fact puts an end to the argument so often made that "nerve breakdown" comes from over work. We do not "breakdown" from that cause as often as we have been led to and like to believe. There is a natural fatigue that comes from work or play but by resting, we react and are as good as new. It is the feverish rushes of work and play from which we do not readily react that wears

away our ideas like the gold pieces shaken in chamois-bags by the old time money changers. We are "broken down" and face to face with some form or phase of psychasthenia, the moment it becomes more than work or play to use the idea brain the way we should when we want to or need to. In addition to the stomachic and intestinal disorders we almost invariably have then, for which ordinarily digestants and diets are prescribed without effect, there is an indigestion, a non-assimilation of ideas for which nothing is or can be done until we train ourselves back to sufficiency of idea brain control. These who sow the wind and reap the whirlwind of the strenuous life and thereby become psychasthenes, weak thinkers, are ready to reeducate the idea brain, the moment it is brought home to them that they can regain control of it, simply by seeing to it that their ideas are habitually definite.

Psychotherapy by reeducation has no pet ideas to exhibit or exploit for the purpose of preventing or curing psychasthenia. Psychasthenes are not fully conscious of their own ideas and they do not easily become fully conscious of the ideas someone else proposes and promotes to cure them. Psychasthenes have all they can possibly do to begin with to even try to become and be conscious of the ideas normally part of their own lives. Years of weak thinking may obstruct but do not obliterate the pathways into in and out of the idea brain, and it is the aim and achievement of psychotherapy by reeducation to cause the normal functioning of the many cells and fibers of the idea brain where none or not any were functioning before.

Usually chronic psychasthenes have defects and

defaults in the process of ideation that led to and keep up the insufficiency of idea brain control. When this insufficiency of brain functioning works havoc in the body, the physician finds on closely questioning the patient, the flaws and faults in the mode of ideation that correspond with and is the cause of the irregular pulsations of the brain in the given case of psychasthenia. As the film of ideas unreels, psychasthenes are often very painfully aware of one or more or all of three things as follows:

1. That they do not keep ideas in the proper course and connection with other ideas—there is a lack of continuity.
2. That they do not hold ideas in the field of consciousness to the exclusion of all else—there is lack of concentration.
3. That they are distressed by ideas that recur or become fixed without relation to other ideas—there is lack of elimination.

It has been said: "The physician who treats his own disease has a fool for a patient." Experience proves, however, that anyone who tries until they succeed in curing themselves of psychasthenia by reeducating the brain, is far from having a fool for a doctor or a patient. Instead of it being merely morbid probing that prompts psychasthenes to study the way they think, to watch the train of ideas go by, it is rather the only means they have of regaining sufficiency of idea brain control. Many of them who have not been psychasthenes too long recover control of the idea brain, almost as soon as they are told and shown what their glaring faults are as regards continuity, concentration, and elimination of ideas.

When the weak thinkers do not feel equal at first

to even try to become conscious of the ideas that should play a great part in their daily life, thinking about, becoming conscious of something that stands for an idea paves the way for continuity, concentration, and elimination of ideas. In short, the psychasthene can exercise the idea brain in a way that makes for continuity, concentration, and elimination of ideas. The psychasthene in the course of reeducating the sense brain always has at hand some object or event upon which to fix attention. In reeducating the idea brain the difficulty is to find an ideate, something that vividly and vitally represents, symbolizes an idea and which at the same time is simple and easy to handle mentally.

When we are well, the process of ideation is far from being an exhibit of still-life. An idea is a living image, a moving picture—it begins, changes and fades, but it is clear, definite to the last. When we have sufficiency of idea brain control we connect, define and dismiss our ideas. Psychasthenes paint their mental pictures impressionistically and they are not even truly blotesque but daubesque.

When we look at a picture there is a part of it, a point in it, from which the eye begins to take in the whole of it. For the purpose of reeducating the idea brain let us reduce the idea, any idea, any mental picture, to a point such as can be made on paper with a pencil. This mathematical point having position but no parts or dimensions, serves to attract and attach the attention, which is the desideratum in the reeducation of any part of the uncontrolled brain. The mathematical point seen physically or mentally may be used as a basic for the science and art of educating or reeducating the idea brain. From

such a beginning it is easy for anyone to gain or regain the ability to mentally extend the point to a line, or to center all consciousness in it or to place it on and then wipe it off the slate of consciousness. It is really very easy for any psychasthene to begin the reeducation of the idea brain by doing all this with the mathematical point as a mental pace-maker for the steps that naturally lead to the consciousness of ideas in continuity or concentration or elimination.

Lack of continuity is very characteristic of the weak way of thinking. The weak thinker very often lets the idea run off the main track. *It is the habit of side-tracking ideas, that has much to do with keeping up the insufficiency of idea brain control. The right kind of training of the uncontrolled idea brain clears the main lines into in and out of it and insures the through routing of ideas.*

It helps a psychasthene very much to keep ideas in continuity to put a point on paper with a pencil and from that start, draw an endless line.

If the eyes follow without a break the making of this line, the seeing part of the sense brain is used, controlled as it should be in seeing anything physical. But that is sensing and not ideating, which is mental seeing and every psychasthene's mental sight is dim. However, tracing such a line on paper with a pencil familiarizes one with what must be done mentally to keep ideas connected. With this in view, the point representing the idea itself and the symmetrical looped line the course the idea takes when continuity is perfect, the psychasthene closes the eyes, sees the point mentally and from that beginning carries it without stopping over the course of the looped line. When this is accurately done, the idea brain is used, con-

trolled as it should be in keeping any idea in bounds and linked with other ideas.

After a little practice almost any one can draw the looped line quite well on a sheet of paper but when those who need reeducation of the idea brain, try to do it mentally, they make hard work of it. They make a physical movement out of what was conceived first and last to be a simple mental exercise to redevelop the ability to keep the continuity of ideas. They ask all sorts of questions, such as: "Do you want me to see in my mind all of the looped figure at once? Must I draw mentally a white or a black line? How fast or how slow must I trace this line in my brain? These and other similar questions are natural enough and they come up simply because such people, in fact most people, are not used to the slight changes, the short steps and stages so marked in normal thinking. When they come to do a mental exercise which so exactly represents what goes on in the mind and brain when there is no lack in the continuity of ideas, they must not expect to overcome lack of continuity in their ideation by doing this exercise in a careless manner a few times a day for a few days. It is not until the line they trace mentally is sharply and symmetrically drawn that their ideas begin to move in the normal direction and connection. It may take weeks even months to free the brain and the body from the effects of the lack of continuity in thinking.

Lack of continuity uncouples and switches ideas on to side tracks. Lack of concentration deforms and wrecks ideas. *Continuity is thinking in one dimension—unbroken length. Concentration is constructive thinking in three dimensions. Concen-*

tration is stereoscopic mental seeing, making the idea, the mental picture, stand out in full relief. As the uncontrolled brain and mind are dissociate, do not work together, the psychasthene's ideas are indefinite most of the time.

Any psychasthene can learn to refocus the idea brain for clear mental seeing by practicing concentration. All that need be done at first is to sit in a quiet place, close the eyes and see the mathematical point mentally as clearly as if it were set down on paper. Hold the point steadily in the mind's eye by paying strict attention to it. For an instant the point should be the only thing in the mind.

It is quite easy to make the first effort to concentrate by following the instructions but there is more to this idea brain exercise. Having made one effort to see the point mentally, another should be made at once and so on until a series of such efforts have been made at regular intervals. The efforts may be timed exactly by a metronome beating seconds, quarter, or half seconds. If no metronome is at hand, the psychasthene by a little care soon finds the rate at which to make these efforts best suited to individual needs. The object in repeating these efforts at regular intervals is that it "warms up" the cold idea brain. Anyone who can make the above efforts perfectly ten times in succession is rapidly gaining or regaining the ability to concentrate.

The above exercise may be modified by substituting the letter 'a' for the mathematical point and learning to see, say and hear it said mentally all at once. A little practice soon gives anyone the "knack" of doing this. Close the eyes and see the letter 'a'. At the same time say 'a' mentally. If this is well done,

one is sure to hear 'a' said mentally. Repeat this effort ten times.

The exercise may be made even more progressive and searching by using the words *an*, *and*, or any other words in the same way as above. Almost at once psychasthenes begin to experience what these exercises of the idea brain do to free them from the listlessness and the languor that has been their bane for many years. These exercises tire anyone unused to them but it is not the cumulative morbid tire that comes from the futile effort to concentrate without a definite thing in mind and that is just what the psychasthene tries to do most of the time. The healthy man or woman has sufficiency of idea brain control and, therefore, sets aside, rejects, eliminates every thing that interferes with the continuity and concentration of their thinking. It is very characteristic of the psychasthene to do the very reverse of this in general and in particular to hang on to morbid ideas that keep coming back to or become fixed in the brain. For example, the idea that some organ of the body is diseased, may suddenly and repeatedly terrify or the idea that health is utterly lost may constantly agonize the psychasthene. The morbid idea that comes back from time to time strikes through and disturbs some part or region of the body. The fixed morbid idea pierces the brain and pins down the whole body of the psychasthene like unto the tent stake Jael drove through the head of Sisera. From recurrent or fixed morbid ideas come the paralyzing fears, the agitating worries, the leaden despairs and depressions that prostrate the body of the psychasthene more than anything else. The lack of ability to eliminate such ideas is the exact

measure of insufficiency of idea brain control. Psychasthenes taking such pains to coddle rather than to cast out irrelevant, illogical, obsessing ideas, have often baffled and balked the psychotherapists who have tried to cure them by suggestion or persuasion, and they have been called incurables and other names not so polite. *Psychotherapy by reeducation would miss the mark altogether if it failed to give the psychasthene the ability and courage to oust the morbid idea that lurks in or lodges in the brain.*

Psychasthenes must understand clearly what they must do to rid themselves of the morbid idea that at times or all the time, racks the heart or stomach, the intestines or pelvic organs or what not in the body. Even when we are well, it is not always easy to eliminate an idea that is indefinite, an idea that is not fully in the mind. Normally, concentration brings the idea we are forming, the mental picture we are painting, into the clear light of complete consciousness and then it is quite easy to erase it if there is need. Concentration is the first step toward elimination. The psychasthene must see *mentally* the idea that is to be eliminated as the surgeon sees the diseased tissue he is to cut off or out.

Having already learned how to consciously keep ideas in their course and connection and to make them solidly visible in consciousness, it still remains for the psychasthene to learn how to cast out the health destroying recurrent or fixed idea. The exercises for regaining the ability to think connectedly and concentratively, break the habit of weak thinking to the point of clearing the pathways into in and out of the idea brain. There is an exercise of the idea brain that fits one to eliminate both normal and morbid ideas

and it combines concentration and deconcentration. As a microscope can be adjusted so that an object is clearly seen or lost to sight altogether, the idea brain can be used so that a psychasthene becomes conscious or loses consciousness of an idea.

At first the psychasthene may not seem able to deal directly with the morbid idea itself. In that case the mathematical point can be dealt with mentally as if it were the idea that darts through the brain so painfully at times or rankles there all the time. Before any normal or any morbid idea recurrent or fixed, can be eliminated for good, it must be deliberately brought to consciousness and then be as deliberately lost to consciousness. The preliminary training to regain this ability, temporarily lost by every psychasthene, is simple but effective.

The mathematical point may be used to represent the idea to be eliminated. To do this, sit in a quiet place, close the eyes and look at the mathematical point mentally. The instant the point becomes fixed in the mind is the critical time in this exercise, for the point then tends to slip out of the mental grasp. Hold it steadily and then wipe it out.

It is easy enough to do all this with the point once but there is more to the exercise. Having put the brain through the movements of concentration, deconcentration, and elimination once, the effort should be repeated several times at regular intervals of a second, half or quarter seconds, timed by the ticks of a metronome. If no metronome is at hand, a little practice enables one to space the efforts to slow or fast to meet the needs of the individual. Any psychasthene who can make the above efforts perfectly ten times is rapidly regaining the ability to

ward off or pluck a morbid idea from the brain.

When we are well the building-up and breaking down processes in the body balance at least, and usually there is a reserve on the side of what has been built into the tissues and organs by the assimilation of food. These days medical men and rightly too, make much of the nutritional aspect of health and disease. If all else were always equal to a perfect balance of the chemistry of nutrition, none of us would ever be sick. In health the wastes of the tissues and organs, the ashes of the fires of human life, do not accumulate in the body, but in disease some of the body wastes and disease poisons are sure to gather and remain in the body longer than they should. The removal of natural wastes is essential to the maintenance of health. The removal of the poisons of disease is necessary to the recovery of health. The poisons of disease especially those found in the gastro intestinal tract and other organs are easily detected now, and when the physician does not ascribe disease to infection of some kind, he lays it to auto-intoxication. Even the cause and character of psychasthenia is thought by most medical men to be due solely to acidities of the body. In current modern medical parlance, psychasthenia is an acidaemia, an acid condition of the body. But after the sourness the laboratory men insist underlies the symptoms covered by the term psychasthenia, has been neutralized and its recurrence forestalled by the regulation of nutrition and all other sensible curtailments of living, the patient still has an insufficiency of brain control that has gone to the point where there is no ability to eliminate morbid ideas. Anti-acid treatment does not cure psychasthenia.

As physicians and psychasthenes we have yet to learn that the cause and character of psychasthenia is not to be found in the body. As physicians and patients we have yet to realize to the full, that a morbid idea viciously returning is as real a cause of disease as the aggravations of an acidosis that comes on occasion from eating too much meat or starch, and that a morbid idea that sticks in the brain causes as much suffering after its kind as an impacted gall stone. The contention here is not against detecting the poisons of auto-intoxication, or against any sensible means or method of neutralizing and removing them from the body, but for this means and method of detecting and eliminating morbid ideas recurring or fixed,—the ideas that fret and madden us like angry wasps that sting every time they light on us, the ideas that fester the brain.

Intelligent observation notes that the inability to eliminate such ideas more than anything else makes the chronic psychasthene the despair and defeat of the doctor. The auto suggestibility or the impressionability made so much of by Bernheim and DuBois as the cause of psychasthenia in the last analysis is not super sensitiveness of brain or over activity of the mind but rather a passive brain, a static mind. When we are well the brain reacts instantly, that is springs back to form after the stresses of sensing, ideating and acting, like a rubber ball released from pressure. When we get sick and stay sick because we do not control the idea-brain, especially after the assaults and sieges of morbid ideas, the brain does not come back to normal form or function but stays flat and full of dents like a lump of moist modelling clay that has been struck by a mallet

many times. One of the aims of the psychotherapy by reeducation is, so to speak, to work the dents out of the mass of the uncontrolled idea brain. One can begin to reshape the idea brain by practicing the deconcentration exercise just described. The reconstructive movement of the brain that follows the effort to lose consciousness of the mathematical point paves the way for the elimination, the moving off and out of the brain the morbid idea, recurrent or fixed. This is the basic of the science and art of forgetting.

Experience has proved that it takes more than the command of the hypnotist, or the formula of the suggestionist or the argument of the persuasionist to help psychasthenic men and women get out of the vagrant into the straight way of normal thinking. Any means or method devised for doing this must eventuate in restored rhythmic pulsation of the brain. The periodic feature in the foregoing brain exercises insures this. It is not to be understood in the least that these brain exercises, the pace for which is set by mentally handling the mathematical point, the simplest imaginable thing to attract and attach attention, can do more than start the reeducation of the idea brain, but let no psychotherapist or psychasthene think for a moment that they are too simple to be effective in showing psychasthenes once more the way of becoming and being conscious, fully conscious of normal ideas in continuity, concentration and elimination. Systematically experiencing the effects of these exercises soon breaks the spell that weak consciousness of ideas casts over the mind and body of the psychasthene.

THE REEDUCATION OF THE ACT BRAIN

AFTER all the theorizing and the experimenting, *voluntary* and *involuntary* are still the words that most aptly describe the cause and character of all the movements of and in the human body. This time-honored classification serves us even better than ever before, if we take it to mean that thinking has everything directly to do with all the activities of the human organism that are voluntary, willed, and nothing directly to do with those that are involuntary, not willed. The physiologists have shown that the smooth muscle of the human heart, arteries, veins, and other tubular organs moves as rhythmically as it naturally does in the living, when stimulated mechanically, chemically and electrically in the body not too long dead. It is not all all likely that the psychologists will ever be able to prove that striated muscle, the kind used in willed acts moves anything like as energetically, expressively and effectively, when stimulated artificially in the living or dead body as it does when we are thinking which is its natural and necessary stimulus. The farther we go into what a voluntary, a willed act is and what brings it forth, the sooner we come to the worth while conclusion that thinking is willing. If, as many say, our thinking has no more to do with causing and characterizing our acts, than it has to do with the source and course of a stream that runs under a bridge on which one may be standing, it is useless to even talk about sufficiency or insufficiency of act brain control or of developing the one by education and overcoming the other by reeducation. However, as it is now possible to demonstrate physically that to think is to act and

to think is to will, we have the key to our behavior when we are well and when we are psychasthenic.

It is the motive and the mechanism of our willed, our decisive acts, with which we have to deal in the education and reeducation of the act brain. The term "*act-brain*," specifies the areas of brain cells and the tracts of nerve fibers growing out of them that form the convolutions at the middle of the side of each hemisphere of the brain. This is the motor brain, the act brain, the organ by means of which when we are well, we carry out the acts we think about, the acts we are fully conscious of, the voluntary, the willed acts. Nerve fibers connect cell center with cell center in the act brain itself. Other nerve fibers connect the cells of the act brain with the cells of the sense and idea brains. It is this system of intercommunicating nerve fibers, known among anatomists, physiologists and psychologists as the mechanism of association, that binds the cells of the sense, idea and act brains together as one brain, correlating and coordinating its functions. This complex nerve arc mediates the decisive, the willed acts of the healthy man or woman.

Many psychologists and philosophers today follow the biologists and physiologists who teach that the motive and the mechanism of human acts and animal movements are alike. This animal physiology and psychology seems to apply to humans before the brain is full grown, and even after that to some extent for there are many movements of and in the human body that do not imply or involve a brain, a spinal cord and a sympathetic nerve system more fully organized than in the most highly evolved animal. However, after the mechanism of associa-

tion is fully developed, and it is not until we are of adult age, our life ceases to be wholly one of sensation, becomes more and more one of ideas, and in consequence then, our acts have a design, an adaptability, a determination, a direction, an element of control in them that animal movements never equal or exceed. Furthermore, the normal adult human brain is not merely an animal brain plus, for the reason that the mechanism of association is only partly or not at all developed in the brain of the organisms in the scale below our own. Therefore, it cannot be said that animals think as we think, will as we will, and their movements at best are more in the nature of reflexes than direct acts. It is the unique and unequalled and probably the never to be equaled development of the mechanism of association that distinguishes the structure and functions of the adult human brain.

When even a shadow falls suddenly across the face the eyelids close quickly and some other defensive movements follows. When a mouthful of food is swallowed the movements of the stomach necessary to digestion begin. These are reflex movements and do not illustrate that all the movements of the human body are reflex in cause and character. Granting when we are well that there is sufficiency of control of the act brain and that its functioning is direct and not reflex, we mount at once from the physiology of animal movements to the psychology of human acts. Modern education aids and abets industrialism and commercialism, to make human acts as machine-like as the reflexes. Such automatism no matter how acquired or applied wears and wastes the body and the brain and if we let it will make blockheads of every

one of us. Before the motor brain, the act brain of the healthy human adult functions as it should, a distinct sensation or a definite idea comes in to change, what might be merely a mechanical motion or movement into an intelligent, efficient, right or admirable act. It would simplify the principle and practice of the education and reeducation of the act brain if its functioning were purely reflex in its nature, that is to say, if something outside of it always led us to act. It is very characteristic of reflex mechanisms functioning too often or too long at a time to finally fail to respond at all. It is well for us that the act brain is not purely a reflex mechanism for then we would soon fall by the wayside at work or play. As it is the act brain, the mechanism of the decisive, the willed act, as long as distinct sensation or definite idea stimulates it, functions to, through and out of the very last ditch. This is the every day experience of using the will.

The scientific aspect of motor thinking—willing—must now be considered. The full consciousness of sensations and ideas is the very pitch of the force of the will. Sensationless or idealess will or willing is simply unthinkable. Willing is not a cyclonic gathering of the energy of our being on occasion. The sensation we distinctly experience, the idea we definitely form when there is need brings out an act as surely as water runs down hill. The act brought forth in accord with a normal distinct sensation or a normal definite idea is a decisive, a willed act. It is a great mistake for psychologists and psychotherapists to stress the physical rather than the mental side of the will and willing. The will is mental rather than muscular. Willing is a matter of brain instead of

brawn. The use of the will for any purpose whatsoever is very much more than setting the jaws, squaring the shoulders, stiffening the spine or bracing the whole body when we are going to act or are acting. All this is the physical evidence of the effect of the effort of willing rather than the cause of willing. In proportion it takes just as much will to think to become and be fully conscious of a normal sensation, idea and act itself as it does to walk a tight rope or lift a heavy weight. When we are sensing, ideating, and are fully conscious of doing so we use the will to the limit of the norm and any thing beyond that strains the brain. To the healthy man or woman these basics of the psychology of the will and willing are self evident and for them there is no problem of using the will for their acts are instantly and constantly the output of the full consciousness of normal sensations and ideas. As an electric spark explodes the gas that starts and keeps an automobile engine going, so a distinct sensation or a definite idea of normal character fires the charge of will back of the acts of the healthy man or woman.

It is not surprising then that psychasthenes instantly or constantly lacking the full consciousness of normal sensations and ideas, act so indecisively, so will-lessly. Even though necessary and ordinary acts of daily life wilt and wither them and they are often told by the physician: "You are all right but you need a little tonic and you must use your will."

After a time such patients finding both the medicine and the do-or-die advice of the physician to be without effect, turn to the do-and-live dictum of the psychotherapists of every stripe and badge outside of medicine. Then they are told by one or another:

"You must be hypnotized a few times so that you will act the way you should in spite of yourself"; "You must often suggest to yourself that you act the way you should"; "You must be convinced that you can do what you want or ought to do"; "You must deny that you act unnaturally and affirm that you act naturally"; "Let the subconscious mind shape your acts"; "Allow the superconscious mind to move you to act." From a-to-z this is asking a wretchedly immobile although not paralyzed psychasthene to act without being told or shown anything about how to do so as in health. In so far as they are weak actors, what psychasthenes are "up against" is a dissociate, an uncontrolled act brain, the pathways into in and out of which have become blocked and barred by an habitual weak way of acting. In a word the mechanism of association, the bridge across which a normal act a willed act comes when we are well, is broken, is down altogether as long as we are psychasthenic.

Neither the words the physicians uses ordinarily, nor the extraordinary wordiness of self appointed psychotherapists unblocks or unbars the uncontrolled act brain and releases the decisive, the willed act. Suggestion or persuasion may move the healthy man or woman to act with a will but suggestion or persuasion alone usually fails to open and keep open the nerve paths into, in and out of the uncontrolled act brain, the inert will brain if one chooses to call to call it so. Psychasthenic people are so unused to doing what they should do the way they should do it that they can not be turned or turn themselves around in the uncontrolled act brain by anything that is merely said to them or that they can say to

themselves any more than the Knights of old could at the word of command, "*about face*" inside of their close fitting suits of chain mail. The uncontrolled act brain is mechanically, physically obstructed, a reality pseudo-psychotherapy does not contact and therefore, cannot cope with successfully, but to the last particular it accounts for the indecisive, the will-less acts so distressing to psychasthenes themselves and the cause of so much anxiety on the part of their relatives and friends. The uncontrolled act brain halts the impulse and impetus of the will as wet punk stops fire, but as fire finally gets to and through the punk so repeated efforts to will at last kindles the whole of the inert act brain.

It is here that the psychotherapy by reeducation comes forward to tell and show the psychasthenes how to start and finish the decisive, the willed act and thereby regain control of the act brain. For the benefit of those who are well, and none of them are any too sure that they will their acts, and especially for those who are psychasthenic and, therefore, will-less in varying degrees, it is in order now to sketch unforgetably as far as it is known, what happens from the beginning to the end of the decisive, the willed act. When the healthy man or woman wills an act the breath is drawn and held for the fraction of a second, there is full consciousness of a normal sensation or idea and at the same time somewhere in the body muscles begin to contract coordinately. In the main these are the factors in willing and when they are all on the stage at once and working together they very vividly dramatize the act that is the outcome of sufficiency of act brain control.

Many difficulties beset us the moment we try to

find out what the will is, how we use it when we are well or how to learn to will in order to complete the cure of psychasthenia, a very distressing phase of which is weak, will-less acting. The physiologists, so much taken up with the unveiled activities of the human organism, tell us very little about the ones that are willed or how the will works. The philosophers put forward so many theories in regard to what the will is in itself and use so many words that provoke debate and promote differences of opinion that after studying their writings one is not sure whether it is whim or will or something else that moves us to act. The modern laboratory psychologists, however, connect motives, normal sensations and ideas with a mechanism, an organ, viz; the motor, the act brain. For all practical purposes it clears up the problem of the will and willing to name the mechanism of association, the very core of the structure of the normal adult human brain, as the instrument of the will, the organ the thinker uses in willing. Without such a mechanism and thinking to activate it, there is no basis for a science of the will or an act of willing. As the scientific investigation of the acts of the healthy man or woman resolves itself into the investigation of the will and willing, so the education and the reeducation of the act brain becomes virtually the education and reeducation of the will.

With the real facts about the will and willing clearly in mind, we have the guide to the right practice of willing, which overcomes the insufficiency of act brain control so necessary to the lasting cure of the psychasthene. The reeducation of the sense and idea brains fits the psychasthene to become and be conscious of the sensations and ideas that prompt and

promote decisive, willed acts. If the reeducation of psychasthenes stopped with the regaining of control of the sense and idea brains, their acts would continue to be stillborn, indecisive, will-less. The reeducation of the act brain points directly to this: Willing, as separate or separable from thinking, the full consciousness of normal sensations and ideas and acts themselves, is nothing at all.

After the psychasthene regains control of the sense and idea brains, it is still necessary to overcome the insufficiency of control of the act brain in order that the acts may be said to be willed. In other words repeated efforts must be made to coordinate the functioning of the sense, idea and act brains. Psychasthenes may be told and shown time and again how to use the will, but it takes on their part exact and exacting practice in willing before any of them actually learn how instantaneously the willed act springs from the full consciousness of the sensation or idea essential to it. It is easy to begin to reeducate the act brain. At first not too much should be made of the mental part of willing an act. Merely mechanically making some simple movement, such as closing the hands as in taking hold of something or putting forward first one and then the other foot as in taking steps, brings the act brain in play and paves the way for willing. Let any psychasthene make these movements, even carelessly and examination of the brain at the time shows that its habitually irregular pulsation tends to become regular at once. If the same movements are made with vigor, the hands actually gripping something and five steps briskly taken forward, then examination of the brain shows that its pulsation has become not only regular but energetic.

While such movements serve to teach one the difference between casual and causal movements, they by no means even illustrate the whole of the effort the psychasthene must make to really will an act. The mechanical element of willing is present and operative, but the mental element of willing, the thinking about making the movements, the consciousness of making the movements, and this is the very life of willing, is not present or operative. No psychasthene can regain control of the act brain without imitating what actually happens when a healthy man or woman wills an act. We have already seen the model of normally willing an act. Now, if any psychasthene draws in and holds the breath, becomes conscious of taking hold of something with both hands or of taking five steps forward, all the elements in a willed act are combined and an examination of the brain shows that its pulsation is remarkably rhythmic and energetic. The academic analysts of the will have drawn this picture of willing, but they did not demonstrate *physically* that when we will an act, the pulsation of the brain is more energetically rhythmic than at any other time and that this pulsation of the brain is the *physical sign* that there is sufficiency of control of the act brain, that the will is being used.

While this physical sign that the will is in the act guides the psychotherapist in the reeducation of the act brain, psychasthenes themselves are more interested in the health giving effects of willing. It is possible, when the effort to will an act just described is made intelligently and earnestly a dozen times, for most psychasthenes to break the chains of their willessness. This is not merely an experiment that

may or may not turn out well but an experience that floods the brain and body with a vitalizing current for the first time in many years perhaps. If the first efforts to overcome the inert act brain do not restore will-power to the psychasthenic invalid, persistence in willing wins in the end.

Having learned once for all, the way to will an act, the psychasthene then applies the principle and practice to all the acts of work or play. The reason why physical exercise as a means of cure is such a ghastly bore to all psychasthenes, is that they go through it without thinking about it, without being conscious of the sensations and ideas naturally connected with it. If this vitalizing element is ignored the acts of the psychasthene continue to lack "pep" and "punch" and they live on with the same feeling of helplessness they have in a terrifying dream in which they are unable to lift even a finger. The languor some have called laziness, so characteristic of psychasthenes, falls away from them the moment the habit is formed of always making a move the instant they are conscious of the sensation or idea that demands an outlet in normal action. For psychasthenes to suggest to themselves or try to persuade themselves that they are acting with a will and make no move in the right direction to do anything, is "bluffing" and not willing the act. The effort to move on the instant in accord with the sensation or the idea that is the very life of the willed act can be made almost anywhere without going to Europe or a rest-cure. The acts the psychasthene fears to do or worries about doing can be rehearsed until the will to do them develops. The very inmost secret of putting the will into an act is

to make the required movement the very instant the sensation or idea that prompts action comes fully to mind. "Do it now" is the thought that opens the way for the issue of the decisive, the willed acts, the acts that overcome insufficiency of act brain control, the acts that complete the reeducation of the psychasthene and the cure of psychasthenia.

THE PHYSICIAN AS A PSYCHOTHERAPIST

THE materialism of modern medicine without which no one in the world would be as well as they are, nevertheless does not encourage physicians to be as good psychologists and psychotherapists as they are anatomists, physiologists, pathologists, diagnosticians, surgeons and physical therapists. On the other hand modern psychology and the psychotherapy based on it, is often a little too psychic, a little too vague to get the attention and keep the confidence of the busy doctor. Between these extremes physicians do not exhibit any kind of psychotherapy with the same assurance and insistence as they do the physical means and methods of treatment. So the mental side of health, disease and cure goes begging for advocates and adherents and finds them mostly outside the circle of licensed physicians. There is no good reason why this should be so any longer, for some of the teachings of modern psychology can be translated into the terms *practical medicine* and nothing helps the physician to do this so quickly and so well as the scientific study of the way we think that causes and cures psychasthenia.

Physicians have never been any too well pleased with the methods and the results of the psychotherapy

they have practiced. Even those who have specialized in hypnotism, suggestion and persuasion frankly admit failure in more than half of the seemingly appropriate cases treated. The failure of intelligent and conscientious physicians as psychotherapists has been mostly the result of trying to do more than can be done with the mental means and methods at their disposal. Observation and experience make it very doubtful if psychotherapy can prevent or cure any disease except psychasthenia in its many forms and phases.

Compared with the short comings of legitimate psychotherapy, the utter failure of what passes in the world for psychotherapy, carried on by men and women who elect themselves to give "psychic treatment" to every case that comes along, looks more like an out and out swindle than anything else. The disappointment and the victimization of the psychasthenes by official and unofficial psychotherapy, very sharply calls the attention of medical men to their responsibility in this matter—a responsibility that should bring them out on the side of a scientific psychotherapy, the psychotherapy by reeducation that physically demonstrates the prevention and cure of psychasthenia.

Physicians already deeply imbued with the psychotherapy that proposes and professes to avail itself of the powers of a sub or super consciousness that some way or other comes up or down from somewhere to somehow cure the psychasthene, may find at last that the every day consciousness is all and does all that they claim for the ultra consciousness. Most physicians today are too rational to stand for or by a psychotherapy the effects of which depend on a mere

word of mouth appeal to a sub or super conscious mind, the organ of which no anatomist has found and the functioning of which no physiologist or psychologist has brought to light. Better than ever before, physicians today know that the brain is the organ of mind, the mechanism of consciousness, the instrument of the effective thinking we do when we are well and not asleep. Apropos of the further needs of physicians when they are dealing with the human brain, Dr. Alexis Carrel (Rockefeller Institute of Medical Research) says:

“Although the adult individual has fewer chances of dying from smallpox, cholera, tuberculosis, or typhoid fever than fifty years ago, his expectation of reaching the age of 75 or 80 has not markedly increased. He surely has more prospect of being tortured by some form of cancer, afflicted with slow diseases of the kidneys, the circulatory apparatus, the endocrine glands, of becoming insane, suffering from nervous diseases, or of making himself miserable by his lack of judgment and his vices. Modern medicine protects him against infections which kill rapidly but leaves him exposed to the slower and more cruel diseases and to brain deterioration.

“There is no great hope of immediate improvement in this situation, in spite of the remarkable advances which have been made recently in physiology by the discovery of the active principles secreted by endocrine glands, by the building up of the science of nutrition, and by a better conception of respiration, of metabolism, of the acid base equilibrium of the blood, etc.

“Although great progress has been accomplished in the treatment of diabetes and of the disturbances of

the thyroid gland, it is far from possible to cure these diseases or prevent their occurrence, as we still are absolutely ignorant of their causation.

“The insufficiency of medicine is more flagrant when it deals with tumors. What are the determining factors of cancer? What is its nature? What are the causes that render the human organism susceptible to malignant tumors? No one today can give a scientific answer to these questions. We do not know what brings about arterial hypertension.

“Our ignorance of the cause of chronic nephritis and of most of the diseases of the circulatory apparatus is practically complete. It is possible neither to cure nor to prevent them. Our lack of knowledge is still greater in the field of the nervous and chiefly of the mental diseases, the nature of which remains almost as mysterious as it was during the middle ages.

“It is clear that the future progress of medicine must consist in finding the nature and causation of some of these diseases and their prevention. Medicine should attempt to lead men to extreme old age without suffering, and also to increase their moral and intellectual value, because the quality of the individual is far more important than the quantity for the happiness and the progress of the community.

“To expect this from medicine does not appear to be asking the impossible when we consider what already has been accomplished. If our civilization does not crumble and if scientific research goes on at increased speed, we can reasonably believe that our expectations will be fulfilled.

“But fundamental principles have to be discovered; entirely new fields must be opened, and this can be

accomplished only by pure science.

"Science when connected with medical or industrial research does not go far enough beyond the beaten road and is often handicapped by its attempts to make useful discoveries. On the contrary, pure science has no immediate practical purpose. Its object is merely to find the truth and to understand the universe. It does not attempt to make discoveries which could be applied to industry or medicine but seeks an accurate conception of the world in which we live and of our relations to it.

"Pure science classifies the empirical knowledge of nature that we already possess. Beyond the apparent and often puzzling complexity of phenomena, it detects the common element which underlies this seeming diversity. Then it can draw the generalization which we call laws and predict and reproduce the phenomena at will.

"The understanding of nature always leads to its control. Pure science which seeks knowledge in an absolutely disinterested way becomes, almost in spite of itself, the great power of this world. There is no other manner of obtaining a thorough knowledge of nature and of mastering it.

"If physiology were studied as a pure science far from hospitals and medical schools by men possessing the creative imagination and the spirit of the discoverers of the fundamental principles of physics and chemistry, the secrets of the functions of the body that we still lack would be brought to light.

"These discoveries would indirectly lead the physician to understand the nature of the disease of the organs whose functions are incompletely known today and to prevent them. At the same time an insti-

tute of pure science, where physiologists, physicists and chemists could devote themselves to the investigation of fundamental problems, would create the proper conditions for the building up of the science which will occupy the summit of the hierarchy of human knowledge, the science of thinking matter and energy.

“The development of this new psychology is our only hope of improving the quality of human beings. But it will be an immense task, because the structure of the central nervous system, as unveiled by Ramon Cajal, is of infinite complexity.

“It is probable that the discoveries which will open this field to scientific investigation will be made on the frontier of physiology and physics, and will require the development of entirely new methods by some man of genius. Modern psychology, in spite of its progress will have the same relation to this supreme science as alchemy to the chemistry of our day.

“Our knowledge of cerebral physiology is in the embryonic stage. We are still entirely ignorant of the properties of nerve cells, the nature of nervous energy and the significance of telepathic phenomena. No one suspects the manner in which memory, intelligence, courage, judgment, and imagination are connected with the brain cells. The possible affinity of certain structures of the brain for chemical substances secreted by endocrine glands and other tissues has never been studied. Courage is probably not an inherent property of some nervous cells but may be due to the effect of the sex glands on those cells.

“Creative imagination, judgment, and other quali-

ties possibly require for their development the action on the nervous system of substances produced in other parts of the body or introduced into the organism with the food.

“The knowledge of the conditions that permit the evolution of judgment, imagination, kindness, our courage in a race, family, or individual, or of the conditions that bring about the disappearance of the qualities, would give the human race far more happiness than the complete eradication of plague, cholera, and typhus from the earth. At the same time the discovery of some of the fundamental properties of nerve tissue would enable medicine to prevent many of the nervous and mental diseases.

“It is obvious that the functions of the brain must be better understood in order that, without intellectual or moral deterioration, the human race may stand the new conditions of life imposed on the individual by modern civilization. The spiritual progress of man could be greatly promoted by a scientific knowledge of the physicochemical phenomena which take place within the brain cells.

“Instead of merely increasing the number of human beings, we could increase their quality. The progress of medicine, understood in this manner, would be the most important factor in the development of civilization.”

No matter what else works out for the benefit of mankind, in accord with this pronouncement of America's medical savant, education that develops sufficiency of brain control and reeducation that overcomes insufficiency of brain control, is sure to play a leading part in the improvement of the structure and the function of the individual human adult brain.

The means and methods of that education and reeducation, even though in rudimentary form as yet, are available now. Psychasthenes do not have to wait any longer for the discovery of the means and method of their cure. Psychotherapy by reeducation and the physician as such a psychotherapist are theirs to serve here and now.

While physicians indirectly reach the structure and function of the living human brain in health and disease, it is altogether another matter for them when it comes to contacting directly the functioning of the living adult human brain when thinking is going on normally or when thinking lags and lapses to the point where we become and stay psychasthenic as when we are thinking the way that cures us of psychasthenia. For the reason that now by means of the trained sense of touch physicians can feel the pulsations of the controlled or the uncontrolled brain there is at last a firm foundation for a science and art of psychotherapy. Physicians should not risk denying that the brain pulsates regularly when we are well and irregularly when we are psychasthenic for in all the world none are so able as they are to prove this to the last detail. Nothing but indifference or prejudice can prevent them from interpreting for themselves that the regular and irregular pulsations of the brain are respectively the physical signs of sufficiency and insufficiency of brain control. Thus psychotherapy gains the status it deserves and the physician as a psychotherapist grasps the technique for the prevention and cure of psychasthenia.

As long as physicians let psychasthenes come and go without pointing out to them that insufficiency

of brain control made and keeps them sick, they must not be surprised or make complaint, when these patients, after taking the physical treatment ordinarily prescribed for them, without effect, turn to *ists* and *ologists* who lie in wait for such with luring literature that foists and fastens on them some system of mental treatment that is also without effect.

Ethical physicians respect the right the sick have to seek relief or cure where they think they can get it. However, there are ethical patients as well as ethical physicians. Patients "on the square" expect physicians to give scientific advice and treatment in sickness even if it is psychasthenia. After all is said and done in this particular, it is not these patients who are to blame for the disastrous results of pseudo-psychotherapy but the physicians who are blind to everything except the body and its physical treatment. Even though psychotherapy by hypnotism, suggestion or persuasion fails as a routine practice in most cases of psychasthenia, it has demonstrated that there is disease of mental origin and that it can be cured by mental treatment. What physicians must decide is to drop psychotherapy altogether or take up with the psychotherapy by reeducation in order to protect the patients that are now the prey of unqualified psychists of every stripe and badge.

Nothing in the world balloons the egotism of the layman or woman as much as a smattering of the psychology of hypnotism, suggestion or persuasion that leads them to believe they have the power to cure disease. Theirs is the voice of ignorance calling and enslaving the psychasthene to daily treatment for aches and pains that any man or woman can banish almost instantly by becoming familiar with the prin-

principles and practice of brain control. Psychotherapy by reeducation is not a daily sale of the goods and graces of the psychotherapist's personality. The many unqualified men and women, failures as psychotherapists, would be howling successes as book agents and dressmakers. Nothing unsells pseudo-psychotherapy to the point of driving it out of the market as the psychotherapy by reeducation which demonstrates physically the prevention and cure of psychasthenia and this is a work for the physician first and last.

The conclusion is unavoidable that only those who have the credentials and qualifications as physicians should be psychotherapists, those who by education and experience have made the spirits of diagnosis and therapy their familiars from their freshman days. Today we do not trust physicians very far unless what they do for a patient is in accord with the physical signs of health and disease. We ought not to trust any psychotherapist who treats psychasthenia without an exact knowledge of the physical signs of brain health and disease insofar as the brain can be said to be diseased when the patient is a psychasthene. By taking the view that the regular and irregular pulsations of the brain are respectively the physical signs of sufficiency and insufficiency of brain control—the guides and guards of the psychotherapy by reeducation, physicians keep to the line of their march in the conquest of disease, even though the prevention and cure of psychasthenia is only one of their objectives.

THE PSYCHASTHENE AS A PATIENT

PSYCHASTHENES change doctors oftener than any other patients. Even after making the round of nerve specialists, hypnotists, suggestionists, persuasionists and psychoanalysts, most of them are still psychasthenes. By that time they have become deeply in-ground with the belief that there is an obscure and obstinate weakness of the nerves connected with the region or part of the body from which their sickness seems to spring or in which it seems to have settled. This belief, quite universal, is not only the axle on which the wheel of the psychasthene's life turns with so much friction and creaking, but it is the greatest obstacle to the cure of psychasthenia even by reeducation of the brain.

While the functioning of some region or part of the body always bears the brunt of the psychasthenia, the weak way of thinking, it also appears that what is done for some people by way of physical diagnosis and treatment either induces or confirms this way of thinking. Regarding a certain class of these cases, Dr. Evans in his article, *The Chronic Abdomen*, (Chicago Tribune, January 3, 1926) writes as follows:

“Hutchinson's lectures on dyspepsia have a chapter on this subject. In this country, maybe the slang term most used is 'dropped stomach.' He says: 'The symptoms of the chronic abdomen are many, varied and ever renewed. Many of them referred to the stomach, many to other parts of the abdomen and many to other organs, but wherever they may be referred to they are always described in great prolixity and in minute detail.'”

“There are abdominal pains of various sorts and in various places. Many complain of insomnia, undue susceptibility to cold and a constant catarrh. The road to chronic abdominalism is paved with operations. The usual sequence seems to be about this:

“Pain on the right side, low down. Appendicitis. Better for a few months. Soon the pains return. These are put down to adhesions. These may be operated on. Then come pelvic pains and operation. Then operations to fix the colon, to raise a dropped stomach, and so on. The skin of the abdomen is a maze of scar—a regular map of Europe.

“But the detailed history that the patient gives with such quiet happiness and joy is not limited to surgeons and operations. The patient has been thoroughly investigated, often at a team work clinic. She has a set of X-ray pictures all set to draw. She has records of barium meals, fluoroscopic examinations, dye tests and test meals. She has the reports of laboratory tests galore. She has been psyched and has taken more than one rest cure. She has been given vaccines, ductless glands and most every diet fad.

“Says Hutchinson: ‘In a word, she has run the whole gamut of modern therapy, has submitted to every stunt and conformed to every fad—but is none the better.’

“On examination the muscles are flabby, abdominal wall relaxed and soft, the stomach can be made to splash and the kidney to move. The mental state is one of general discontent, peevishness and intense egotism. There is an intense craving for sympathy. Her incessant demand for sympathy makes the ab-

dominal woman a veritable vampire sucking the vitality of all who come near her.

"The reference is to women because most of the cases are in women, with nurses leading the procession. The few cases in the male, Hutchinson says, are found in Jews and in doctors.

"In treatment, the most important thing is to catch them, early. The war cured many cases in England. They had to get busy on other matters; they developed other interests and they got well. The poverty which followed the war cured even more cases; suffrage cured many. Marriage and the responsibilities of a family of children cures many. What Hutchinson calls the fancy religions—Christian Science, New Thought, Theosophy and Spiritualism—cures many. The great need is for something which will dislocate the patient's mind from her umbilicus and set it to other horizons.

"But once a chronic has become all 'sot' in her ways, there is little hope for her. There was a play—'The Mollusc'—which portrayed the chronic abdominal graphically. Dr. Hutchinson sent many of his patients to see it, thinking it would reveal themselves *to* themselves. They all came away saying: 'How absolutely like Mrs So-and So.' So far as any help to themselves was concerned—'It never touched me.'"

The point in these cases most favorable in comment is that some of them get well when their attention is attracted by and attached to something worthwhile either outside or inside themselves, something above and beyond the history and the experience of the fallen stomach, the floating kidney or the kinked

colon. In effort this is the very mode of the operation of the psychotherapy by reeducation, which should have been resorted to not for the dropped stomach, the floating kidney, the kinked colon or pelvic organ not "at home" or that requires surgery for other reasons, but for the insufficiency of brain control that was present before or after modern physical therapy mobilized completely the mentality of the persons who so eagerly and cheerfully take to toting a chronic abdomen. It is all the more difficult to relieve or cure the splanchnic, the abdominal psychasthene, by mental means or methods for the reason that there is always something physical for the patient to point to as the evidence that their disease is of the body, even though it is only the external scar of abdominal section. On the other hand, psychasthenia often crops out to complicate the course of and the convalescence from any disease. The foregoing may well be considered as the complicated and complicating cases of psychasthenia.

Sex, class, occupation and nationality have very little if anything, to do with causing or characterizing typical uncomplicated cases of psychasthenia. The whole history and condition of any psychasthene as a patient, evolves from and revolves about the chronic head, the core of which is an uncontrolled, a collapsed brain, and this, until now, has not been directly contactable by physical diagnostics.

When it is first brought to the attention of the psychasthenes that an insufficiency of brain control, a weak way of thinking, instead of a weakness of the nerves, made and keeps them sick, most of them fairly prickle with resentment and bristle with opposition.

However, even this reaction is not at all unfavorable to the final outcome of psychotherapy by reeducation. More than likely this balking at the thought that they are in every way responsible for their own suffering, is the first real thinking many of them have done for a long time and is often the wedge that enters and breaks through the knot of the uncontrolled, the unused brain. Usually this surge of antagonism against psychotherapy by reeducation begins to subside soon after the diagnostician threshes out and sifts these cases and assures them that they are not organically diseased in body or mind but are used by instead of using the brain. Very few psychasthenes are so bereft of common and scientific sense as to throw away the one last chance to get and stay well by learning how to control the brain.

As a matter of fact the psychasthene taking up psychotherapy by reeducation as a last resort, has to learn and do more to regain and retain health than anyone else who is sick and curable. For this reason, it should be made clear to all of them in the very beginning, that all there is to insufficiency of brain control is the habit of not being fully conscious of normal sensations, ideas and acts and that this is an addiction as much as snuffing cocaine or eating opium. Strange as it may seem, weak thinking and narcotic taking affect the brain in the very same way. The daily dose of indistinct sensing, indefinite ideating, and indecisive acting, numbs and dissociates the cells and fibers of the brain as surely as the daily dose of "snow" or "the pill". The brain of the psychasthene is like the brain of the drug addict in the particular that the nerve pathways into, in and out of it are in

a condition of bloc. In dealing with the drugged brain for the purpose of cure, the physician stops "the dope" outright or gradually withholds it. The psychasthene drawing life away under the weak, the lethal habit of thought, must be suddenly or gradually roused. There is nothing finer in the whole range of therapy, than the physician as a psychotherapist using the means and methods of reeducation to help a psychasthene clear and clean the brain that has been "doped" by the weak, the will-less way of thinking.

It is safe to say that fifty out of every hundred men and women sick because they do not control the brain, can get and stay well almost as soon as they are told and shown how to take and keep hold of the brain. This is as near as the psychotherapy by reeducation ever comes to working miracles of cure. With the other fifty it is very different and often very difficult for them to regain brain control. Full of faith these patients have run the gamuts of rest cures, diets, exercises, massages, electricisms, tonics, sedatives and what not that claims to be psychotherapy and although none of these therapies cure them, when they come face to face with psychotherapy by reeducation they are full of doubt about it being known what is the matter with them and what will do them good. The chronic psychasthenes have been disappointed so many times by so many kinds of treatment that at last they are wary and take the "show me" attitude towards any new treatment, especially if it is mental in means and methods. Very well, they soon find that psychotherapy by reeducation has something to "show them" about getting and staying well that is very much worth while.

It is the privilege and the pleasure of the physician as a psychotherapist to give all psychasthenes a full view of what stands in the way of their recovery. It must be made plain to them at once that the uncontrolled brain is what has tripped and thwarted them every time they have sought health. It must be explained to them seventy times seven, if need be, that the aim and object of reeducation is to move and mould the brain back to unity of structure and unison of function. In the very beginning is the time to settle it for them once and for all, that when they feel well they control the brain, and that when their peculiar and particular suffering comes back or is worse, they do not control the brain. When the brain is controlled its pulsations are regular, and when the brain is not controlled, its pulsations are irregular. Let no psychasthene or any one else for that matter, imagine for a moment that the physician can possibly be deceived in regard to the reality and meaning of these physical and diagnostic signs of suffering and insufficiency of brain control.

When chronic psychasthenes begin to realize that the brain is inert, unreactive, unresponsive, they are usually deeply discouraged for it seems to them that they might as well be put to the task of shaping a brain out of modeling clay and then to animate it, as to even try to reform and revive their own brains. While it is nothing like as impossible a task as that, it is, nevertheless, best for psychasthenic people to know beyond doubt that the burden they bear and must cast off is a brain they do not use and, worst of all, that they do not know how to use. Psychotherapy by reeducation not only points out to these patients what is the matter with them, but then and

there helps them take the first steps away from a sickness that is no more or less than exquisite torture.

Before reeducation of the brain actually begins, for the everlasting encouragement of all psychasthenes, the psychotherapist should envision for them the effects of the efforts they make to regain control of the brain. The whole truth as to how a psychasthene gets and stays well is very simple. When we are well and go to sleep, the short branches of the brain cells and the short branchings of the individual nerve fiber ends in the brain, fall away from each other, curl up and thus isolate and insulate themselves to rest and feed. Thinking stops when we are really asleep. When we are well and wake up and stay awake, the branches and branchings of the brain cells and nerve fibers ends in the brain uncurl, stretch themselves to make and keep constant contact. Now thinking begins again and goes on. Now there is full consciousness of normal sensations, ideas and acts; that is to say there is sufficiency of brain control. Now the pulsations of the brain are regular and forcible. When we are psychasthenic, we are never wholly awake or asleep. Then the short branches of many millions of brain cells and the branchings of many millions of nerve fiber ends in the brain have lost contact. Then thinking does not go the way it should, there is a clouded consciousness of normal sensations, ideas and acts, there is insufficiency of brain control. Then the pulsations of the brain are irregular and forceless. But even then, any time we give our whole attention to a normal sensation, idea or act, the pulsations of the brain become regular and energetic, as in health. This restored rhythm of brain pulsation is the physical sign that the brain cell branches and

nerve fiber end branchings in the brain have again made and are keeping contact, as in health. By deliberately making a systematic series of efforts to be conscious of normal sensations, ideas and acts, renews and reestablishes the rhythmic contactings of brain cells and nerve fibers, takes up the slack and sag of the brain itself and all the organs and tissues connected with it. In brief this is rationale of brain reeducation and visualizes the way the psychasthene returns to health.

Fortunately, to regain sufficiency of brain control, that is to recover health, psychasthenes do not have to pin their faith to a sub or super conscious mind that cures in some unexpected and inexplicable manner. The principle and practice of brain reeducation, first and last an appeal to the brain itself, is open and above board, shows no favors and dispenses no cures except to those who earn them. Nothing brings back morale to any psychasthene so quickly and lastingly as an actual and exact workout of the brain. Any policy of waiting for instructions to "soak in" as by suggestion or persuasion falls in only too well with the habit of procrastination of which the psychasthene personifies and postpones still longer the so much needed health. The very first treatment, the psychotherapist can help the psychasthene "turn over" and "warm up" the uncontrolled brain. All that is necessary is to follow in some manner the principle and practice already outlined in the reeducation of the sense, idea, and act brains. While for both psychotherapist and psychasthene this work is very often much like cranking a "cold" automobile engine, it can be done and the brain started running again as in health. After such a treatment, the patient

notices a new kind of fatigue but soon a feeling of well being follows, that is also new and actual. This first experience of controlling the brain registers deeply enough to turn the tide from the psychasthenic to the normal way of thinking.

In treating the most chronic cases of psychasthenia, psychotherapists have to often renew and reinforce their vows to the principle and practice of brain reeducation and go forth to conquer psychasthenia, not the psychasthene, and then only with the latter's full consent and co-operation. It may be difficult but it is not impossible to cure even these cases, in spite of their expectations to the contrary. In the extreme cases of insufficiency of brain control, there are parts of the brain associate and coordinate enough in structure and function to serve as stepping stones by which the patient can be led across to the shore of assured and avowed health. The physician as a psychotherapist is indispensable here and finds the way to begin the reeducation of the brain best suited to the individual. These are the patients that never stop looking at the tongue, feeling the pulse, taking the temperature, having the blood tested and the blood pressure measured, thinking about this or that part of the body, and repressing and reserving themselves as to the outcome of what ever the physician does for them, and they never do stop these adventures in morbidity until they take themselves steadily and systematically in hand to learn to control the brain, and some characteristic suffering becomes less or lost altogether, and even then sometimes they live in terror lest it return in worse form than ever. It is then that the patience of the psychotherapist and the psychasthene is at the breaking point but both

of them must hold on or all is lost. After psychasthenes have been told and shown time and again what their disease is, and that they can overcome it by sincerely making repeated efforts to control the brain, they may still hang back like bathers before making a plunge into cold water. This is a very critical time in the treatment of these cases but it does not last long if there is a shred of brain working, for these patients have been frankly told: "It is up to you to get and stay well."

There are still psychotherapies that give people to understand that it is what the "teacher" or "healer" says and does that cures disease. Psychotherapy by reeducation, first and last stands for and insists on it that the cure of psychasthenia is accomplished by the patients themselves after proper instruction and training or it is never accomplished at all. This does not leave psychasthenic men and women wholly to their own devices, for psychotherapy by reeducation knows what is the matter with the patients it proposes and professes to treat, and, furthermore, it knows from the pulsations of the brain when the lessons it teaches are being learned or have been learned, when the training it prescribes is in effect, when the cure it wishes and works for is finished.

While the rewards of brain reeducation are not always instantaneous or even very immediate, as a rule, they come as soon as any one earns them and are sure and lasting. When it is first proposed to psychasthenes, especially the ones who feel they are "in for life" that they can get well by learning to use the brain as they did when they were well, it seems to them as impossible as to lift themselves by the ears. Psychotherapy by reeducation neither

advises nor attempts the impossible. It does not pretend to relieve or cure any disease except psychasthenia—the disease caused and characterized by insufficiency of brain control. It only asks the psychasthene to try to learn how to think again, to become conscious, fully conscious of normal sensations, ideas and acts and then to keep on trying until sufficiency of brain control has been regained. If the true diagnosis of psychasthenia and the simple method of treating it by reeducation is explained to the patient in the beginning there will be no contest with the physician in regard to what is the matter or what should be done about it, a contest to which otherwise no physician is equal and out of which no psychasthene can come triumphant over psychasthenia. When psychasthenes once experience the relief, the complete relief that comes the moment they have cleared and opened the nerve pathways into, in and out of the whole brain by efforts of their own, they give up the folly of doubt in regard to recovering health by reeducation of the brain.

*“And when the mind is quickened out of doubt,
The organs tho defunct and dead before,
Break up their drowsy graves and move
With casted slough and fresh legerity.”*

—HENRY V.

There are always some psychasthenes who do not fully or willingly co-operate with the principles and practices of brain reeducation. Their suffering may have been great and they are not at all sure that even if it is stopped, something still worse may not come upon them. They seem loath to part with the painfulness of the psychasthenic—the molluscan life, that

shuts in the destructive and shuts out the constructive way of thinking. They really want to be well but the thought still lingers that any one as sick as they are must have disease in the part of the body of which they complain so much. These are the bed-fast cases of psychasthenia, but they can be rescued from themselves by reeducation. Sometimes only heroic effort on the part of these patients revives and reforms the brain. There may be some peculiar sensation, strange idea, some act they carry out in spite of all they do to prevent or that they cannot carry out no matter how hard they try and life becomes unspeakably wretched—a treadmill on which they go nowhere and get nothing. It is then that both the sympathy of relatives and friends and the ignorant aimless care they take of themselves are no good to them. Now the only help for them is the exact and practical knowledge they can gain concerning the cause, character and cure of their ailment, from the psychotherapist, the physician who knows how to reeducate a brain. Even the most supine psychasthenes, after a life long habit of mistaking normal sensations, ideas and acts, of which they are only partly conscious, for the symptoms of disease, and after waiting many years for physical treatment to relieve or cure them, do well to consider psychotherapy by reeducation, the guides and guards of which are the regular and irregular pulsation of the brain, the physical, the diagnostic signs of brain health, disease and cure as far as psychasthenia goes. It is worth trying once anyway and if the tryout is made sincerely and intelligently the tangled skein of the cells and fibers of the uncontrolled brain gradually from day to day unknots and

straightens out and the psychasthene who was without hope of seeing a well day again is free from the sickness or the sickliness caused by insufficiency of brain control.

Psychotherapy by hypnotism, suggestion and persuasion has had its day and proved its limitations even in the treatment of psychasthenia. Psychotherapy by reeducation, the psychotherapy based on the physically demonstrable signs of sufficiency and insufficiency of brain control has arrived, and here and now posts its challenge.