THE SCIENCE OF THE MIND
APPLIED TO TEACHING.

INCLUDING THE HUMAN TEMPERAMENTS AND THEIR
INFLUENCES UPON THE MIND; THE ANALYSIS
OF THE MENTAL FACULTIES, AND HOW TO
DEVELOP AND TRAIN THEM; THE THEORY
OF EDUCATION AND THE SCHOOL; AND
METHODS OF INSTRUCTION AND
SCHOOL MANAGEMENT.

BY

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ILLUSTRATED.

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DEDICATION.

To the Children and Young Ladies and Gentlemen whom it has been his pleasure to serve as teacher and who by their friendship and their appreciation of the good and the true, have encouraged him and caused him to love his work, this volume is Affectionately Dedicated by THE AUTHOR.
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PREFACE.

It is an almost universally accepted truth that a right education will secure virtue and power, and that virtue and power are the essentials of individual and national well-being. Education is then the supreme interest of the age. It is only recently, since republican principles are accepted as the true foundation of right government, that the education of all the youth has come to be regarded of prime importance. The proper interest in the cause of education is just beginning to be felt by all classes of people. And although in the last twenty-five years much has been written, yet we are a long way from the "Science of Education." In the mean time it is fitting that teachers should help one another, by the exchange of ideas. It is because the principles which are presented in the following pages have been very helpful to me, and the hope that they may be so to others, that I present this volume to my fellow teachers. It has been prepared in the spirit of broadest liberality, appreciating the high aims and valuable thoughts of others. I have freely appropriated what I thought good from all sources; and I ask only the same from others—take the good and reject the spurious. Even though all do not agree with me in all that is here said, if my work tends to arouse a higher purpose, and to quicken a desire for a better knowledge of the truth, my labors will not be in vain.

As far as possible authors have been given credit in the proper place. But I am especially indebted to the Indiana State Normal
School, at Terre Haute, Ind., for ideas on the Theory of Education and the School. Were their views published, I would gladly give the name of publisher that all might see to what extent I have drawn from them.

The mental philosophy here employed is the system known as Phrenology. I have satisfied myself fully as to the correctness of its principles, and think that any one laying aside prejudice and investigating by observation will also be satisfied. Saying nothing as to its value as an index to individual character, yet as explaining mental manifestation it is so simple and so accords with human nature and the experience of mankind that it commends itself at once to the student. The facts pertaining to the human mind and character as set forth by this system are so eminently practical that they will be gladly accepted by teachers who have never studied mental philosophy, and by those who have striven in vain to get some useful ideas from the speculative systems.

This work has been prepared while doing full work in the classroom and caring in part for the interests of a large school. It is, no doubt imperfect in many respects, and I solicit correspondence from teachers asking for criticisms and suggestions of improvement, that should a future edition be called for, it may be much improved.

With the hope that my labor may be helpful, especially to young teachers, I am Sincerely,

Your co-worker, U. J. H.

JENNINGS SEMINARY AND NORMAL SCHOOL,

AURORA, ILL., August 12, 1885.
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CHAPTER I.

FIRST PRINCIPLES.

The Mental and Physical Nature of Man.—Man has two natures: the mental and the physical. By the latter term is meant all those functions and activities which are not engaged directly in the production of thought and feeling. Anatomy and Physiology are the sciences which treat of the physical nature.

By Mental Nature is meant all the activities which constitute thought, feeling and will. Psychology is the science which treats of the mental nature. These natures are not independent of each other, but each is so closely related to the other that they must be studied together. The difference which exists in the mental nature of two individuals, not the result of different training, is the result of bodily difference. The difference is either in the perfection of its structure or the size of the organ.

The Educator.—In Education a change is sought to be made in the mental nature. The Educator seeks to regulate, strengthen and facilitate the action of the mental activities. It is therefore apparent that a
knowledge of the mental nature is of the greatest importance to the teacher. A knowledge of the mind is to the teacher what a knowledge of navigation is to the sailor; and without this knowledge there is as much uncertainty about his work as there was in the voyage of Columbus. The average teacher is too ignorant of man's mental nature to be in the highest degree successful in its cultivation. He works as the unlettered farmer does, according to a model which was set before him, without any definite knowledge of the adaptation of means to secure certain ends. In many of our Normal Schools teachers are taught simply to imitate. Learning methods and then repeating them is mere machine work. The best method will fail unless the teacher understands how to adapt the method to the mind of his pupil. The teacher should do as does the intelligent physician, who studies the human body and its activities until he understands them perfectly. He next studies remedies for bodily ills. Then he is able to prescribe with some degree of certainty as to good results. The teacher should study the mental nature until he understands that perfectly. Next he should study methods for improving it. Quack teachers, like their brothers in the medical profession, have one method warranted to cure every ill.

Influence of the Physical Nature upon the Mental Nature.—There is a great difference in the quality of the material and the perfection of the structure which is to be found in individuals of the same kind, whether among men or among animals.

The butcher can tell at a glance whether the live animal will yield fine-fibered and tender meat, or whether it will be coarse and tough. It is not difficult
to distinguish a perfectly from an imperfectly organized horse. In the well-made animal the head, the body, the hind and fore-quarters, legs and feet are in proper proportion to one another. There is also a fineness and compactness of fiber which indicate good quality. The imperfect animal is loose-jointed, the large legs out of proportion with the slender hind-quarters, the hair and bones are coarse, the muscles slender and flabby. No amount of care, good feeding and training will make him equal to the one that is well made. A little observation will convince one that among men there is as great a difference.

Take for example the lowest classes in our own country. Then are generally the descendants of the helpless and vicious class who were transported by the English government in colonial days; as they are immigrants from the worst classes in the cities of Europe. Their descendants have since lived in poverty and degradation. They are ill-shaped, coarse and ugly almost beyond belief.

In the slums of New York and Chicago there are human beings who bear a greater resemblance to the gorilla than to man. The low quality of their organisms makes them almost incapable of rising out of their deplorable condition. Education can work wonders among many of these in time, but it would take years of good feeding and training to bring them up to an average of ordinary intelligence, refinement and morality.

On the other hand, the religious and political persecution in Europe separated a class of people from the rest. Many of them sought refuge in the wilds of America. The best material is now to be found among
the descendants of the Puritan, Quaker and the Huguenot.

The superiority of these over the "poor whites" and the low class in our cities is the result of superior quality in bodily organization. This high quality is produced by union in marriage of those physiologically adapted, by correct living, education and climate. The quality of one part of the body is also the quality of all the other parts. Coarse skin and hair indicate coarse muscular and nerve fibers. Soft, flabby skin and hair indicate similar properties of brain. Ill-health of any part has a deleterious influence upon the
others. The bodily conditions are most influential upon three qualities of mental manifestation: strength, acuteness and energy.

Strength is given by largeness, compactness of fiber; acuteness is given by fine quality of fiber; and energy is given by good health. The highest mental qualities are the result of a proper combination of these three bodily conditions. Where there is an absence of fineness, the person may be strong and vigorous but is deficient in acuteness, delicacy and sensitiveness. All his faculties are obtuse. He fails to appreciate the finer shades of thought and feeling. If there be a deficiency of size and compactness he will be wanting in strength, but may possess great refinement and delicacy of per-
ception and feeling. If the health of even a good organization be poor, none of the functions can be performed energetically. Some organizations are analogous to cloth made of hemp. These are strong. Others are analogous to cloth made of fine silk. These are deficient in strength, but have great acuteness. Still others are analogous to cloth made of a coarse and a fine material in proper proportion. These possess both strength and acuteness.

Fig. 1.—Strong. Fig. 2.—Acute. Fig. 3.—Strong and acute. Fig. 4.—Low quality. Fig. 5.—Energy.

Corresponding to these three properties of the body and mind there are three systems in the human organism upon which these properties depend. They are
all necessary to the existence of the body, but the relative strength of these systems is not the same in two individuals.

*The Motor System.*—The bones and muscles form the motor system.

*The Nutritive System.*—The alimentary canal, the circulating and respiratory organs, the secretory or-

![Fig. 4.—Very Low Organization.](image)

gans and absorbents, and all the organs which are engaged in transforming food into living tissue or keeping the system in repair, form the nutritive system.

*The Nervous System.*—The brain, the spinal cord and all the nerves form the nervous system.
CHAPTER II.
THE TEMPERAMENTS.

The preponderance of one of these systems over the others gives rise to a peculiar physical condition which we call a Temperament.

The Motive Temperament.—The preponderance of the muscular and osseous systems in the human organism gives rise to the physical condition which we call the Motive Temperament.

Physical Characteristics.—The chief physical characteristics of the motive temperament are large and usually long bones, slender but firm, compact muscles; causing a heavy, tall, angular frame. The features are prominent; large nose, high cheek bones and heavy jaws.

The hands and feet are large, the joints being prominent. The complexion is usually dark and the hair stiff, and sometimes coarse. When the nutritive and nervous systems are deficient, this temperament is marked by extreme angularity and awkwardness.

Mental Characteristics.—This temperament gives great physical strength and it also imparts strength to the mental nature. If a man of this temperament has intellect, it will be noted for great power and force, but not for brilliancy and acuteness. His mental operations will be slow, but his thoughts will have vigor.
If he have temper and will, they will be slow to act, but once awakened, they will act with a force that carries everything before it. It puts iron into the will and force into passion. Such a man is not easily offended, for his sensibilities are so blunt as not to be moved by slight offences. Though he loves his friends with a devotion which would cause him to make great sacrifices for them, yet he lacks that delicacy of feeling which is responsive to finer touches of affection.

All other conditions being the same, the man with the most of motive temperament can bear up under greater responsibility; can conduct successfully greater undertakings; will have greater solidity and positiveness of character. He loves large affairs and spurns all work which requires little effort and strength. He loves farming on a large scale, railroading, steamboating, manufacturing, the hardship and vast responsibilities which attend life in the army and on the sea. Such men find their greatest happiness in such callings, for lighter employments fail to give full action to their great powers.

Orators of this temperament present arguments and thoughts which compel rather than persuade. Their eloquence possesses a force that carries away the hearer against his will. Webster and John Quincy Adams are examples.

The motive is the masculine temperament. A woman having the features of this temperament will lack the rotund and symmetrical form, and the delicacy and quickness of mental activity, which are peculiarly feminine. But if she be well endowed with the other temperaments, with a preponderance of this, she will
possess the delicacy and sensitiveness of woman and much of the strength of man. All women who have been great in literature, in art, or in the world of action, have been women with strongly marked masculine features.

Boys and Girls in School.—This temperament is rare among girls, and when it occurs, unless it be accompanied by a good development of the other temperaments, it forms rather a hopeless case. It is not susceptible of much culture. Boys of this temperament are slow to learn and very restless under the confinement and petty tasks of the school-room. They long for out-door sports and work. Study is irksome to them, which makes it difficult to get them through the little tasks in the beginning of school life; but when they are once interested in History, Science and Mathematics, the studies which reveal the power in nature and man, they push their work with an energy that soon makes them the best and most reliable students in their classes. They care little for literature and art. Their organization is not delicate enough to appreciate these. To expect superiority from them in these studies is like expecting the quick movement and delicate touch of the skilled pianist from a blacksmith.

The teacher must labor patiently with these dullards until he gets them into more difficult work, when, if they have brains as well as bone and muscle, they will make sure progress.

Cultivation.—This temperament is inherited but may be improved in those in whom it is deficient by a plain diet, consisting principally of cereals and lean meat, and by much vigorous out-door exercise.
Fig. 1 is a good example of the Motive Temperament.

The Vital Temperament.—The Vital Temperament is the physical condition which is the result of a preponderance of the nutritive organs in the organism. Large, well organized and healthy digestive organs, a strong circulation, good breathing, assimilating and excretory organs, keep the organism in repair and supply it with vitality, or life force. And where there is sufficient of this life force there will be great activity of every function. Size and perfect structure gives an organ the capacity for great work, but vitality is the force which operates the organ. A
person may have a magnificent brain, but when vitality ceases, it stops for want of a propelling force. A person may have a small brain and much vitality, then the brain is able to manifest all its power. The nutritive system may be compared to the engine in a manufactory. The coal is transformed into heat, the heat changes the water into steam, and steam furnishes the force which moves the machinery. Food and air are taken into the body, the food is transformed into blood, and from the blood is obtained the life force which enables the organs to perform their function.

The Vital Temperament gives activity to every physical and mental power.

Physical Characteristics.—When the Vital organs preponderate over the others in the organism, more nutrition is produced than is used. This is stored away in the form of fat. Every space in the body which can be spared is used as a receptacle of this surplus material. In consequence, the person becomes plump and rotund. The trunk is enlarged, the limbs are round and taper gracefully toward the small ankles and wrists. The hands are small and plump, the fingers tapering. The features are not prominent, but the face is round and full. The head is large in the basilar region, being full between and behind the ears. The hair is soft and usually of a light color.

All except the nutritive organs are usually free from disease and when there is a diseased condition of the nervous system, it is usually because of disease in some of the nutritive organs. When the nutritive organs are free from disease, persons of this temperament are pictures of perfect health. But it is a mistake to suppose that because people are fleshy
they are necessarily healthy. When the digestive and assimilating organs are strong, but the circulation weak, the person will be fat and pale. If there is added to this a weak action of the Lymphatics, it gives rise to the old Lymphatic Temperament. The flesh is soft and flabby and all the energies are weak, lazy and sleepy. If there be a torpid liver, the complexion will be yellow. The weakness of any of the nutritive organs will modify this temperament and produce quite a different effect on the mind from the healthy Vital temperament.

Mental Characteristics.—The healthy vital temperament overflows with activity and good feeling. It impresses one with the fact that it is full of life. It cannot remain quiet but must be moving about, doing something to work off the surplus energy. It is fond of all the physical pleasures. Exercise, rest, eating and drinking, sleep, and every animal gratification. It gives a warm and impulsive nature. Loves and hates with intensity, but is easily thrown from one mood into another. It is free from care and worry; for it possesses the felicity which only good health can give.

There is a disposition to avoid work which is hard and continuous. It likes activity and change. It will never tire of work which accords with its nature, but cannot take pleasure in work which requires close and hard application.

If the person be fat and pale and the flesh soft, it is caused by weak action of the lymphatics and the heart. The vivacity and enthusiasm of the healthy vital temperament are entirely wanting, and all the activities are sluggish and sleepy. Laziness is the
mental disease accompanying this physical derangement. There may be talent, but the languor of all the activities hurls them to sleep. In an educational point of view, one of these fat, soggy persons is as hopeless as the one who is all bones and joints.

*Boys and Girls in School.*—Boys and girls of this temperament are usually bright, and learn easily and rapidly. They, however, are so intensely fond of fun and a good time generally that it is difficult to get them to apply themselves to study. Make the school a kind of play and get them interested in their work and they become good students. Their propensity to have a good time is frequently too strong for them, and they leave school as soon as possible; the girls to enter society with all its pleasures; the boys to engage in some work where there is greater opportunity for activity and pleasure. Boys of this temperament are most given to the follies of youth. They are so full of animal spirits that they rush headlong into every pleasure. The activity and enthusiasm of this temperament are very valuable in the work of life and to turn them to good account should be the teacher’s aim. Make a good man of one of these wild boys and you have done more good than by educating a dozen half dead ones, who can do neither good nor harm. Such temperaments lack depth of thought. Their work is all on the surface. They can make a good show of knowledge although they have but little. Their delight is in doing something and not in deep thought. They love the concrete, not the abstract. They dislike mental Arithmetic, but like solving problems on their slates. The teacher must profit by
this disposition and give them something to do that requires the use of the hands.

Cultivation.—Every thing which tends to increase the health will improve this temperament. Good food, sufficient exercise and rest, pure air and freedom from care.

Children who are deficient in it should be so reared as to develop it to the utmost: for in the degree in which they are deficient do they lack the life force which is essential to life’s work.

The Mental Temperament.—The nervous system is connected more closely with mental operations than any other part of the organism. A preponderance of the brain and nerves gives rise to the mental temperament.

Physical Characteristics.—The most striking physical characteristics of this temperament are a large brain, particularly in the upper part of the cranium, the body is slender, the muscles are thin and soft, the features are sharp and delicately fashioned. The skin is soft and delicately organized. The hair is fine. The expression of the face is intellectual. The forehead is high and wide at the top, and the base of the brain is deficient.

When the other temperaments are also well developed, the fine classical face is accompanied by a well-proportioned body. But when they are deficient, the body is small and weak and the head too large.

It is the temperament that gives fineness to the organism.

Mental Characteristics.—The mental characteristics of this temperament are acute, active, intense, mental faculties. Delicacy of feeling and acuteness of
intellect. The tastes are active and the tendency is strong toward refinement and beauty. Such persons live more in the mental than in the physical world. Their desires crave that which satisfies the mental and emotional rather than the senses and the appetites. Although the minds of those of this temperament are very quick and sensitive, and though they possess superiority of intellect, taste and feeling, they are not always the best: for they lack practicality and force of character. They dwell too much upon the ideal and cannot appreciate practical affairs. They dwell too much above the clouds to be of much practical service in this prosaic, selfish, business world. They can appreciate the abstract and the poetical, but not the real and distinctly human. They have genius in certain directions, but not enough common-sense for any calling which requires an accurate comprehension of things as they are in the world. They are speculative and dreamy, and not matter-of-fact and observing. A flight of fancy often has more weight with them than a stubborn fact. They become great in literature, theology and art.

*Boys and Girls in School.*—Children of this temperament are precocious. At ten years of age they are as mature as those much older. They are predisposed to study and to sedentary pursuits. Their mental nature needs to be restrained and their physical developed. A great mistake is made by parents by putting these children into school early and crowding them along as fast as possible, in order to give them a good education in childhood. They think that the child being so talented will soon reach a high position in literary pursuits. If the child is
not absolutely killed by over-study it never-the-less fails to accomplish what was prophesied by its early brightness. Its vital energies have been so dwarfed that the large and well-trained brain is like excellent machinery propelled by an engine of inadequate power. One can more safely predict a brilliant future for the dullard than for one of these over-educated, precocious children. Many children are hurried into their graves by being crammed to their utmost.

What they need most of all is to build up their bodies, their mental nature is too strong already.

They should not be confined in the school-room nor put to hard study before their bodies are quite well grown. Though they do not begin study before they are sixteen or eighteen, by the time they are twenty-one they will be ahead of the ordinary boy or girl that has been in school from six years of age. They should be taught to read, but should not be put to hard study. They need only what they can pick up, but everything should be done to build up the physical. Teachers should hold them back in their studies and not allow these nervous children to go any faster than the others of their age.

Cultivation.—Study and the culture of all the mental faculties, improves this temperament; where it needs restraint the mental activity must be permitted to remain at rest, and the physical should be cultivated.

Combination of the Temperaments.—The Motor, Nutritive and Nervous systems may be combined in a great many different proportions. The Motive, Vital and Mental Temperaments are combinations in which there is a preponderance of one of these systems over
the others. In a Motive temperament the combination is as follows, in a scale of 10: nutritive organs 7, brain and nerves 6, and bones and muscles 10. The Vital temperament is a combination of 5 of the motive, 6 of the mental and 10 of the vital. The Mental consists of 5 of the motive, 6 of the vital and 10 of the mental.

These organs also have different degrees of strength and perfection. All of them may be perfect in one individual, making him a person of superior quality. So they may all be weak in the same person. Fig. 4. represents such an one. In him, in a scale of 10, the motive temperament is 3, the vital 2, and the mental 1. This is the lowest type of the human being. A combination of Motive 6, Vital 5 and Mental 4, is that of a person of very ordinary ability who can make a living by the simplest work. A combination ranging from 6 to 8, is that of a person who passes, in a comparatively large sphere in business or in the professions, as a man of superiority. But a combination ranging from 8 to 10, is a really superior person, one who by proper education will stand head and shoulders above the rest in the highest walks of life. He has all the qualifications, both mental and physical, to do all that man can do.

What Makes a Great Man.—To make a truly great man there must first be a high degree of all the temperaments. And there must be added to this a large and well-proportioned brain. Other conditions being the same the larger the brain the greater will be the mental power. A man who has a body of good quality and a brain of ordinary size will have a mind that is good as far as it goes. He may possess good
judgment, a clear intellect and be clever in many things, but he will lack depth, and his cleverness will not extend to great affairs. His acumen is all in affairs on a small scale. He may have a reputation among those who know him as being a very superior person, but let him measure strength with the great men of the nation and his smallness is apparent. Many a man who at home appears to be a wonder, attracts no attention and is lost in the Senate.

A large-brained man, if he have a body of size and good quality, may at home be looked upon as only an ordinary person. The greatness which is in him can not be brought out in the small circle in which he
moves. But when an occasion arises where great power is required, he will be found equal to the occasion; while the man of small brain and the better reputation will be found too light. Notable cases are Gen. Grant and Stonewall Jackson. Both were failures. Gen. Grant as a business man, Gen. Jackson as a preacher and college professor. But in the Civil War, when men of great power were wanted, many generals of reputation were found inefficient; these two men were found to have the mental greatness that could endure the weight of responsibility and direct great affairs with ease.

The small brain soon reaches the limit of its power, but the large brain can assume great responsibility, having that solidity, strength and profundity necessary to great achievements.

Effect of Temperament on Judgment.—It is well known that there are men of intelligence and moral worth who are yet incapable of exercising sound judgment. Others there are who are wrong-sided altogether. While others are on the right side of nearly all questions. The temperaments have more to do with this than even education. A man of an abnormal motive temperament may be a good judge in matters pertaining to railroads, but he is not, nor can he be, a judge of art or poetry. A man of an abnormal mental temperament will hold erroneous opinions concerning all practical matters. One of unbalanced vital temperament will be warped in judgment concerning matters which require those powers in which he is deficient. It is he who has a balanced temperament who is capable of the soundest judgment in all
matters. He is not warped by any excesses or deficiencies. His mind is a mirror in which nothing is distorted, but things appear as they are. His mind reflects the truth.