10-1898

Normalia [October 1898]

St. Cloud State University

Normal

SENIOR

Normalia.

OCTOBER, 1898.

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THE NORMALIA.

VOLUME VIII. ST. CLOUD, MINN., OCTOBER, 1898. NUMBER 2.

The Normalia.

Published monthly during the school year at the State Normal school at St. Cloud.

Entered at the post office at St. Cloud as second class mail matter, 1895.

Subscription, 50 Cts. a Year.
Single Copies, 10 Cents.

NOTICE.

Subscribers will receive the Normalia until notice of discontinuance is given and all arrearages are paid.

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Students' Contributions.

It seems necessary that a few words be said on the subject of students' contributions. Now by students' contributions to this paper we do not mean financial contributions only, although that is very necessary to the life of a paper, but we mean here, "literary contributions" especially. The NORMALIA board has decided to make the NORMALIA a student paper more than ever this year. Its aim has been to get as many students as possible on the staff and its next task is to get all the material for the NORMALIA from the students. We do not ask this material from you because we are thinking only of the benefit it will bring to the paper, but we are very altruistic and would not ask you for contributions did we not candidly believe that you will receive some benefit from the work you do in preparing a paper for publication.

Let us look at this matter from several standpoints. First, what benefit is it to you, second, to the NORMALIA, third, to the school and fourth, to the readers?

First, what benefit do you receive from it? Let us suppose that you have a favorite topic or subject, as no doubt each one of you has, in which you take a great interest. You are asked to write a paper on this subject. Now what does this mean? It means that you must do a great deal of extra reading, you have to make yourself familiar with as many phases of the subject as possible. You must make your paper a model of English composition. It is hardly necessary to call your attention to the benefit derived from writing this paper. You certainly know the subject better than you did before you be-

gan. You have widened your range of knowledge, and had excellent practice in English composition. In addition to this you have put forth an extra effort; you have had to do extra work. Has this effort, this extra work been of no benefit to you? You have done something for the good of others. It is a psychological fact that if you have an emotion and you allow this emotion to express itself in action this emotion becomes stronger. Your emotional feeling of doing good to others has been strengthened in writing this paper, in allowing this feeling to express itself in action. You are therefore better, both mentally and morally.

How does it benefit the NORMALIA? It means in the first place that the NORMALIA is going to be a strong student's paper. It is going to make the paper of especial interest to the students and thus help it to gain its end. The NORMALIA has always been known as a student's paper, and by our new scheme it will become more intimately, more entirely a student's paper than ever before. This scheme is as follows: Each one of the classes of the Normal is to publish a number of the NORMALIA. Thus each one in the school will have a share in publishing a NORMALIA. We do not expect each one to write a long paper. Let us have short ones and enough of them, and it will aid greatly to the success of the paper. It is to the student's benefit that the NORMALIA should be a success, and it rests with the students to make it a success. The Seniors have begun the work. This NORMALIA has been gotten out by the Seniors. Everything in it has been contributed by the Seniors. There are only fifteen of them, and if they can furnish enough material there is no reason why the other classes cannot do the same.

How does it benefit the school? To a certain degree the NORMALIA is looked upon by outsiders as a representative of the Normal school, and the work done here. Since this is true we, as students of the Normal, owe it to the institution to make it the best representative possible. By contributing material to the NORMALIA you, as students, will show what kind of work is being done here. You will be giving us only the best work, and as such, it really fulfills its function in showing the grade of work done here. There are some people who are prejudiced against Normal schools simply because they do not see the work that is being done. Many of these cannot and do not visit the school, and so are unable to see the work which is being done. Now if they should happen to pick up one of our papers gotten out by the students and see the work which is being done, they would look at this school from a different standpoint, and instead of being opposed to it would give it their hearty support.

How does it benefit the readers? Those who read the NORMALIA are going to derive some benefit from it. It may call their attention to a phase of the subject which has never occurred to them. It may draw their attention to a subject upon which they have never thought. In either case it will in all probability lead them to look up the subject for themselves, and in this way you will have been the means of widening some one's range of knowledge. In this way the readers get more varied reading and also get the views on certain topics of a number of persons.

Let each class, therefore, do its best, and the scheme that has been started by the Seniors will be a success throughout the year.

* LITERARY. *

Motor Ability.

BY CORA MAYBURY AND JAS. A. PETRIE.

"Knowledge of children is power to the school manager or teacher." In the room there are many different types of children, each having its own characteristic nature and tendencies. We must know how to treat each of them. After learning the natures we know just what to expect from each. If the work is conducted without due regard to the many kinds of minds, to how many of them are we doing an injustice and giving cause for discouragement?

There are signs by which to judge whether a child is dull or bright, nervous or steady. It is essential in this study to know just what to observe in the individual during each exercise. In this test work the physical movements were observed.

All movements in the body are produced by the action of the nerve system upon the muscles. If we see a muscle moving we know that currents of nerve-energy are being sent out through the different nerves to that muscle. So in children we see movements which show the nervous condition of their system. Postures are also signs of the condition of the nerves, as they are the results of the movements. The condition of the child is also shown in the form and proportions. It has been concluded that defect in physical development is often accompanied by dullness. It is claimed that physical exercise, training the children to move with exactness and precision, is doing a great deal for such children by giving them better control of their minds.

In observing postures and movements, attention was directed to their symmetry or asymmetry, the sign of equal or unequal action of the two sides of the brain. Symmetrical action usually means a higher condition of strength than asymmetrical action. In using the arms and hands as an index to the brain action we had the children hold their arms above their heads out of sight. In most cases the left arm was a little lower or moved more than the right, much so in the case of one little girl of six years. One little boy showed that his right side is weaker than his left. "A typical sign of strength is that the hand be straight extended, the fingers straight with the fore-arm and shoulder; the palm of the hand straight, not contracted laterally; the arms parallel to one another, straight at the elbow, and both on a level with the shoulder. This indicates a robust, well-balanced nerve system. In our observations we noticed in many of the children a drooping and tremor of the thumb and fourth finger. The thumb-drooping is due to fatigue or the occurrence of slight weakness, while trembling of the fingers is nervous twitching. In having children stand on their heels, their toes, it was the left foot that seemed to wish to sink first and that, in several cases, trembled so. One boy proved to us that his left is stronger than his right.

There are forms of weakness and fatigue indicated by weakness of the spine. This was tested by letting the children stand with heels together, head up, and hands by their sides.

With but one or two exceptions, all swayed their bodies, moved hands and heads. They were then asked to close their eyes and do the same. All swayed more and increased all movements, showing that seeing seemed to steady their nerves. In walking backwards with eyes closed, four took very short steps, six kept feet close together, four walked to their right, two pretty straight and the other two to their left, showing that the left side was weaker in most cases.

The effort to sit still for half a minute was accompanied by twitching of eyelids, continual slight movements of head, fingers, etc. One boy six years old held his breath. One girl six years of age moved fingers a great deal, shrugged her shoulders and arms, and jerked her head backwards and sideways, besides twitching the corners of her mouth a great deal. Movements of the head have their signs also. The weight of the head makes it fall forward if the muscles do not hold it up, so, as fatigue comes and passes on to sleep, the head may fall more and more forward till it is bowed on the breast. This bowed position, though it indicates something about the condition of the brain, is not solely caused by the brain action. Extension of the head is used in arts to indicate intense admiration. There is a posture of the head indicating weakness of the nerve-system. You may see the head partially bent or flexed, and rotated and slightly inclined to the same side. This is common in weak children, the head bends away from the weakest side.

In most of the exercises the face movements were pronounced. Mental anxiety is expressed mainly in the upper part of the face by vertical furrows, while horizontal furrows are not movements of an intellectual kind. In the facial expression of pain originating in the limbs or body, the signs are mainly, the angles of the mouth being drawn down. Fatigue and exhaustion are indicated in the face by a relaxed, toneless condition of the muscles and scarcely any change of expression, with a slight falling or lengthening of the face. If strong and unequal nerve-currents are sent to opposing muscles, a quivering or tremor of the part moved by the muscles occurs: e. g. A child has hurt his finger, but is trying hard not to cry; we shall see the muscles of the mouth quiver, until, finally, the effect of the injury to the finger acting upon the nerve-centers becomes the stronger force, the angles of the mouth are depressed, and the outbreak of sobbing follows. In the efforts to sit still and stand still the twitchings of the mouth, eyes and fingers were probably due to straining the muscles so as to cause them to tremble.

In watching the movements of the eyes, notice should be taken of whether or not they are guided by the sight or sound of objects around. Irregular movements of the eyes are analogous to spontaneous twitchings of the fingers. In these wandering, irregular movements of the eyes we find an illustration of a common law, that excessive movement is often an indication of weakness, not of strength; the same thing is seen in the twitching movements of nervous children. In one boy of ten years these excessive movements were intense, in trying to stand still or

stand on heels or toes, his eyelids were squeezed, as it were, and his mouth twitched.

In the first and second grades the movements of the body as a whole were intense. But they decreased in the third grade and were hardly noticeable in the fourth grade. The movements that seemed to increase in intensity in the higher grades were the facial expressions.

The swaying movements in a child are natural, but if these movements are noticed in an adult there is cause for fear. If in the adult, movements of the face do not take place there is reason for worry.

So by watching children at work or play, one can readily understand the condition of the nerve-system, and, according to such, can, at least help remedy the deffects. "Do not stop a child's movements unless you know why you do so. You should no more wantonly arrest a child's movements without due cause than throw a stone at an animal without just cause."

Genesis of the Will.

MARY FERRABY.

Different psychologists have different theories as to what Will is. The following are three of the views held: (1) It is a master that can make us do whatever it choses, right or wrong, as it is or is not controlled by the will of God. (2) Will governs our actions but we govern our will. (3) Will instead of being a separate factor is all other psychic factors in action.

Sensations are the first and lowest springs to action. They are constantly pouring into our minds but not all of them are immediately converted into action, some being built up into percepts, concepts, ideas and idea complexes which produce not only action but co-ordinated action.

Will also gives rise to action or non-action, but all actions do not indicate the presence of volition. All actions not willed are called reflexes. In the case of reflex activities a stimulus enters the brain and sets free energy which goes out along oft traveled paths and causes action without the conscious interposition of the mind of the individual.

Reflexes are of three kinds viz., acquired, instinctive and impulsive reflexes. Acquired reflexes or habitual movements are those which once required consciousness and will for their performance but which have been repeated until they have become automatic. They require but dim consciousness and are almost if not entirely removed from the control of the will. If anything goes wrong consciousness and will intervene and set things right and the action again becomes automatic. Instinctive reflexes are still more automatic. They are the result of ancestral effort and are withdrawn from individual consciousness. Impulsive actions may be either of the other two. A good example of reflexes are the activities of young children. These activities are at first purely automatic. If traced back into the race it would be found that in remote ages these activitives had a rudiment of consciousness which has been gradually removed as the race developed; just as the child in his first efforts in learning to walk, is painfully conscious of every movement but by a repetition of the movements he

becomes less conscious of them until finally they become purely mechanical.

There are activities which seem to be directed by the will which we believe are not under its control because they have been performed when the psyche was seemingly absent. These actions often seem to be directed by thought, to have a seemingly purpose and to accomplish useful ends which are related to the external cause. But we cannot judge from the apparent direction, nor by the end gained as to whether an act is volitional or not.

Reflexes and instinctive acts are the lowest kind of activities but they form the basis upon which rest the individual and conscious activities growing out of feelings, desires, passions and appetites which are more complex and less stable than the reflex activities.

In the development of volition the first step is desire. Desire grows out of or arises from a present state of unsatisfactoriness and seems to serve as a motive to bring about the action of the will. It consists of two phases: (1) Present conditions that are unsatisfactory, (2) imagined conditions that would be more satisfactory than present conditions. (There can be no desire as long as we are satisfied with present conditions.)

The transition from the present unsatisfactory condition to an imagined more satisfactory condition is by association. We think about those ideas that contain the remnants of previous conditions that were satisfactory. The desire entertained in our mind sets free energy which tends to accomplish the desire, and if entertained long enough, will accomplish it. To reach a desired end we must see the necessary steps and the order of the steps by which it may be accomplished. We then will perform the act by willing to perform the steps.

There is no such thing as isolated desires. They are all internally connected with each other and when one desire comes up others come with it. Thus arises the possibility of desires conflicting which necessitates a choice because the individual imagines more than one way in which he can satisfy the self. In making the choice the person chooses that which has the least resistance and the greatest attraction. Resistance is lessened by frequent repetition and attraction is increased by associations with self.

When the conflicting desires come up and before the choice is made the person is said to be in a state of hesitancy. When the choice is made the chosen desire becomes a motive for action. We then will to act and the act is performed. If all of the desires are rejected the choice becomes a motive for inhibited action and we will not to act.

Higher still we have complete volition. This is the idea motor activity growing out of ideas which are co-ordinated, very firm and complex. In complete volition we not only have reflexes co-ordinate with reflexes, desires with desires, and rational tendencies with rational tendencies but there is also a co-ordination all of which are direct to a point: the end to be attained.

Our actions may be controlled sometimes by the co-ordination of the higher activities and sometimes by the co-ordination of the lower activities.

When this is the case we have two psychic edifices, the higher and the lower. The lower and the higher activities should be co-ordinated, with the lower subordinate to the higher. We should have them so thoroughly built together that when low thoughts come into our minds, good thoughts will by association, come in and gain the ascendancy. Our actions will then be controlled by the higher instead of our lower thoughts and they will be good instead of bad. We cannot help having low thoughts but we can build such a psychic edifice that with the bad will come something that will overpower it. This is character.

Character may be defined as the psychological expression of a certain organized body. It is a development and not something that comes as a gift from above as some would like to consider it. Ribot says: "It does not come from above, but from below; it is a sublimation of inferior elements."

Volition, considered as the power to act, is the highest form of activity. It is the combined expression of the emotional and intellectual activities. Ribot compares volition to the keystone of an arch, one side of the arch being the external or intellectual side and the other the internal or emotional side. It is an outgrowth of the intellect and emotions but once there it keeps them from falling and to it they owe their existence.

Physiology, Psychology and Development of Vision.

BY W. T. STURE.

In spite of man's great inventive genius it still remains for him to invent an optical instrument that will give as perfect results as the human eye.

In the discussion that follows I have taken for granted that the reader is already familiar with the mechanism, that is, with the structure and arrangements of the different parts of the eye; and I will therefore pass at once to the discussion of the physiology of vision, the question of how we see.

When we wish to get a good view of some object we stare at it. That is look at in such a way that the image of the object shall fall on the yellow spot of the retina. In staring the lens is also accomodated for near or distant vision. In order that there may be a sensation produced in the eye light must enter it, reflected from some object. How does this light enter the eye?. Before answering the above question, let us consider for a moment what light is.

The fact is now generally accepted by physicists that light is due to and consists in vibrations in the ether. The number of these vibrations per second varies from 750 trillion in violet light to 400 trillion in red light. Between these two extremes we have shades and colors corresponding to each wave from 750 to 400 trillion. That is, they vary in vibration frequentcy, and for each frequency there is one color, theoretically speaking.

As these vibrations or currents of energy strike the cornea they pass through the different refractive media of the eye. In the crystalline lens the rays of light are decomposed into the colors of the spectrum. Through the layer structure of the lense with unequal powers of dispersion all these

colors are focused so as to strike the retina at the same time. These rays of light form a perfect image on the yellow spot. This image is real, inverted and diminished. We said a perfect image, because both spherical and chromatic aberration have been overcome; the former by the movability of the iris, the latter by the construction of the crystalline lens. As soon as these vibrations strike the retina the visual purple and visual yellow begin to bleach out into a white. This sets up a current of energy in each nerve fibre running from each rod and cone into the optic nerve and thence into the visual tract of the brain.

It is supposed by some and seems reasonable that each one of these rods and cones responds most readily to a current of energy with vibrations of a given frequency. That is, each rod or cone takes up light vibrations causing a certain color. This explains how we are able to distinguish colors. In that way certain nerve fibres would carry the sensations caused by the different colors. This as well as what we have said before shows the great importance of the rods and cones in seeing. We may even say that seeing without them is impossible, as is seen in the blind spot in the eye; and that the more numerous, especially the cones, the more acute the sense of seeing. This is proven by the yellow spot.

The visual purple in the rods and cones is stored up during the night or in the dark and destroyed by the light during the day. The reason that we cannot see when first entering a dark room is that the visual purple has been destroyed and in a short time, generally, we can see much better because the purple has in part been restored. Again in coming from a dark room into one well lighted our eyes will pain us for a moment due to the breaking down of the visual purple stored up while we were in the dark. Here we see that this dazzling effect of bright light is not due to the size of the pupil as is generally supposed.

Having some idea of the physiology of the eye we will now pass on and consider briefly the psychology of seeing; or how we know that the inverted image of a tree formed on the retina is really the image of a tree and not of a dog or a horse. As soon as a current of energy reaches the brain through some afferent nerve an intense activity takes place in the grey cells of the brain cortex. This explosion starts another current tending to some sort of action. The parts of the brain concerned in seeing are known as the visual tracts and are in the superior regions of the occipital lobes.

An image is formed on the retina of the eye, but is not transferred to the brain. Instead a message is sent, that is, currents of energy. These change the structure of some of the brain cells. The power to know what these messages mean comes only through experience, facilitated greatly, in some cases at least, by hereditary tendencies. From large number of experiences we have learned what inferences to make. The only thing we get directly through the eye without experience, is the ability to discriminate shade of color. This is due to the fact that different nerve fibres are excited by the differ-

ent color vibrations and are carried separately to the brain.

Again in interpreting what we see the muscles of the eye play an important part. There are six pair of these; two pair acting obliquely. These muscles aid us greatly especially in telling distance and direction. In determining the size and shape of objects seen, muscular and touch sensations aid greatly. Before we have experience through these senses we have no idea of shape nor of solidity. Our images are of flat surfaces.

Thus we notice that through experience and a combination of touch and muscular sensations we are able to interpret in terms of knowledge what we see. This is a slow process and the child goes through many disagreeable experiences before he learns the lesson of psychic seeing.

The final point that we wish to consider is the development of vision in the child.

By the end of the fourth or fifth month of the foetal life the parts of the eye ball are completed. The eye lids follow and the whole eye seen externally is complete. As far as we can tell there are no visual sensations during the foetal period. Two reasons may be given for this theory, first the lack of proper stimuli, secondly, total absence of light and air. As we have already said the eye itself is complete and perfect at least two months before birth as has been proven on children of premature birth.

During the first few minutes or hour the child, probably, neither sees nor feels the light. One thing is certain, the child does not see anything during the first hours of life. This seeming inability is not the fault of the eye, but is due to the corresponding nerve and brain tracts not being fully connected.

The first sensation that the child gets through the eye is that of light. This sensation is experienced from the first hours of birth and is one of feeling rather than seeing. The child seems to enjoy a moderate light as is shown by his turning to let the light enter. A real bright light will cause him to close his eyes. If asleep and a bright light be brought near to him he will wrinkle his face, showing that he feels the light.

This action on the part of the babe is purely reflex. We may in part say that all the movements of the eye ball, eye lids and eyes are during the first days reflex. Some of these movements become voluntary later in life.

There is no doubt but that the oculomotorius is complete in every respect when the child is born, but the brain tracts and nerves concerned as well as the muscles have not yet become correlated. All these must slowly be acquired before the movements of the eyes and lids become regular and beneficial. The only movement, according to Tracy, that is inherited complete is "blinking." This is, probably, the only movement that is absolutely necessary for the first few hours of a child's life. Perfect movements of the other parts are slowly acquired and first at the end of from the fifth to the tenth day do we find perfect, correlated movements of these parts.

The feeling of light rather than seeing it goes on during the first days of the child's life. Later he begins to see,

but during the first nine days his seeing or feeling simply consists in staring. Generally he will stare at a light or anything giving the eye a pleasant feeling.

Some children have been observed to look at an object before the end of the first week. This is only staring as has been proven by removing the bright object when the child would still continue to stare in the same direction as before.

Following the period of staring comes the period when the child begins to look at an object. The ability to fix the eye on an object and hold it there does not come until a little later. This ability to fixate an object varies in different children. In one child it was noticed on the 11th day. In another it was fixated on the 14th day. Again a child was found who fixated an object first in the fourth week. Taking an average of the list of experiments made, we find that the ability to fixate an object begins about the fifth week.

The next new step in advance is the child's ability, not only to fixate the object, but also to follow it if in motion. This power is, probably, acquired from the fifth to the seventh week. At first this ability to follow is very imperfect. If the object be moved rapidly the child will lose sight of it, as also if the object be moved vertically instead of horizontally. The head is, generally, motionless in these cases. The following is accomplished by the moving of the eyes.

The fourth stage in the development of the child's vision is his ability of active search for an object, or a person calling him. As in the previous case the first attempts are more or less unsuccessful. Still from the third to the fifth month this power of active observation is acquired. Some children, it is true, have been found who have this power as early as the sixth week, but as a general thing the rule given holds true. During the first stage of this power, it will be observed that the child does not look at anything distant, nor anything moving very rapidly, but with this last named power fully acquired the child becomes a somewhat intellegnt seeing human being. His physiological seeing is at least about perfect. Psychologically he does not at the end of the sixth month see completely. He must wait even yet for his other senses and his own ability to move about before he is able to rightly interpret what he sees with his physiological eye.

As we have said the child does not yet see very much although his eye mechanism is complete. The ability to see psychically comes only through experience. The child at first only sees objects near by. If he sees anything at a distance he does not yet distinguish it, nor is he able to tell anything about the relative distances of these objects from himself. Before the child is able to comprehend distance he must be able to move around.

In order to know anything about size and shape of objects he must bring his muscular and touch sensations together with his visual sensations, and before this is done his visual images are of flat surfaces, merely "patches of color" as Tracy says.

So we notice that although the eye mechanism and nerves connecting the eye with the visual tract are complete-

ly developed during the first year, yet the ability to know what he sees comes only through a longer and more varied experience.

What has been said above of the child's ability to interpret visual sensatians applies also to his ability to distinguish color. Some children have quite early in life shown an appreciation of color in that they have shown that they like bright colors better than dark. Yet very little can be done in finding out what children know about colors until they can talk. Experiments on children from two to four years old have shown that color terms are not easily acquired. He may be able to distinguish the primary colors perfectly if the terms are not brought in, but in associating term and color many mistakes are made at first. In view of what has already been said about the rods and cones of the retina, and that it is possible that each one of these take up vibrations corresponding to the different colors: we readily understand why the child should be able to appreciate the different color sensations before he is able to apply the right color term. Before this can be done, some new association paths must be made in the cortex of the brain,and, until these beome fully established, the ability to name colors as they are presented will be slow and imperfect.

As we have considered this subject of vision we have noticed many disabilities at first on the part of the child, and we may be led to wonder why the child's visual apparatus was not complete from the first. The lower animals are generally able to provide for themselves from the very start, whereas the human babe requires many years for its complete development. Again we say what we said at the beginning of this essay, nature makes no mistakes. If it had been better for us to have been born with all our organs and faculties complete, nature would have made us so. But nature in its process of bringing forth a higher type of manhood and womanhood provided a home training, a training by the mother's side as necessary to bring forth a race capable of love, sympathy and patience, such as she would have. Hence the human babe is born with many inabilities which necessitate that he remain with his mother, and also makes the mother dependent upon the babe. Through this process of bringing up children, the mother of today has slowly been evolved. The first human mother was by no means the equal of the one coming a century later, nor that one with the high type of womanhood that we find at present. What we have said shows one great reason for the inabilities of the human babe at birth. Through these imperfections the savage mother has been changed into the mother of tenderness, gentleness, unselfishness and of love.

The Traveliug Sand Dunes.

BY J. W. CLIPPINGER.

When the glacier retreated from southern Michigan, it left a bay about a mile and a half wide and two miles long at the point where the St. Joseph and Pawpaw rivers empty into the lake. As soon as the ice had retreated from this part of the lake, the waves commenced to build a bar across the mouth of the bay. As time went on the bar rose to the surface of the water and an-

other was formed farther out in the lake. The waves still continued to pile up sand on the newly formed shore and the wind which is usually from off the lake, blew it over into the bay beyond.

This process has been going on for thousands of years, and today if we go to St. Joseph we will find no bay, but a low, level plain. Out in the lake about one hundred fifty yards we notice a line parallel with the shore, where the lake changes in color from its lake blue to a greenish cast. This color changes again at the next bar, about seventy-five yards from shore, to a grayish cast. And again about thirty yards from shore it takes the same appearance as the water of our little lakes.

Just at the edge of the water the shore rises very abruptly two or three feet. Back of this a few yards there is a depression of a few inches where the sand being dryer than at the shore, is blown away. Up the beach about one hundred yards we will find a ridge nearly parallel with the shore, having a gradual slant on the lake side and a very abrupt decline on the land side. Back about an eighth of a mile we will see the same kind of a ridge only on a much larger scale. This ridge is about one hundred fifty feet high.

Suppose we take a walk back across this ridge or dune. We see the dry sand drifting close over the surface, leaving small ripples, with their long slant toward the lake. As we walk up the dune from the lake side, we are somewhat surprised to see how solidly the sand is packed. Our shoes scarcely sink into it at all. But when we have reached the top of the ridge and start down the other side we find the decent very steep and the sand so soft that we sink into it above our knees.

If we watch one of these dunes a little we may detect its mode and rate of motion. Suppose we stain some of the sand near the foot of the dune on the lake side and after two or three windy days go back and look for our stained sand. We shall find it no longer near the foot of the dune where we left it: but drifting over the top or down on the land side. Suppose now that we drive a stake down in the sand at the top of the dune and come back to see it after a few months. We will find it no longer at the top of the dune but some yards down the lake side; with the most of it exposed. Thus we may discover that in the summer, when there is little constant wind this great sand hill travels only a yard per. month; but in the winter, when there are strong northwest winds it sometimes travels ten or twelve yards per. month. Let us go back to the dune again and put a board, on which we have placed our mark in the sand on the lea of the dune, if we watch it a little while we shall see it gradually covered up and we would naturally say, "Well we will never see that again," but let us come back next year and we will probably find our board on the lake side of the ridge.

So we see this huge cylinder of sand about two miles long and one hundred and fifty feet in diameter gradually rolling back over the country, filling up our valley.

By the time this dune has traveled a half a mile back the small one near the shore will have attained its full size and will continue the endless sand invasion of our glacial valley.

The Study of Science.

BY H. WILLIAM HIBBARD.

That science has not always been held respectable or safe is evident from

history. Take for instance the case of Copernicus. Had he advanced his theory that the sun and not the earth is the center of the solar system to the public when he first wrote it he might have lost his head; for the mediocre world had not yet been educated to receive and comprehend such great ideas.

But the world has slowly come to acknowledge the right, yes the necessity of studying nature.

Science is nothing but trained and organized common sense, differing from the latter only as a veteran may differ from a raw recruit, and its methods differ from those of common sense only as the guardsman's cut and thrust differ from the manner in which a savage wields his club. The primary power is the same in each case and perhaps the untutored savage has the more brawny arm of the two. The real advantage lies in the point and polish of the swordsman's weapon, in the trained eye quick to spy out the weakness of the adversary, in the ready hand prompt to follow it on the instant. But after all, the sword exercise is only the hewing and poking of the clubman developed and perfected.

As primeval man begins the study of nature he must know himself in his relations to her, and he discovers that certain laws cannot be broken without bringing inevitable and terrible results upon the law breaker.

Thus we have a beginning, rude as it may be for the foundation of the study of physiology, which imparts to him the information most essential for his well being, and without which mankind would have remained undisciplined in a science, whose subject matter would best develop their powers of observation, ignorant of facts of the deepest importance for their own and others' welfare blind to the richest source of beauty in God's creation, and unprovided with that belief in a living law, and an order manifesting itself in and through endless change and variety.

Thus if physiology is absolutely necessary for the best development of primitive man, ought it not to be more necessary for the child, who in a few years lives the entire life of the human race!

Again systematic teaching in physiology can not be carried on with success, until the student has attained to a certain knowledge of physics and chemistry for as the phenomena of life are dependent not only on vital, but also on physical and chemical forces; they result in all kinds of physical and chemical changes, which can only be judged by their own laws.

Thus it appears that it is quite necessary for the pupil to have some knowledge of the rudiments of science, while in the grades, that he may do justice to himself and to his studies.

Yet it is often urged that while the pupil may do some work in elementary texts on physiology, he cannot understand or master problems in physics or chemistry. Let us examine this assertion. Take for instance the principle of levers. Every boy, who has pulled out a fence post or rolled a log over the ground, knows that he gains a mechanical advantage by using a lever, and that there is a difference in the application of the two levers; but concerning the mathematics of the two cases, he thinks is totally ignorant; But as a matter of fact he really understands the whole problem, mathematics and all, only he is not yet accustomed to the school room way of thinking it.

The same is true of experiments in chemistry, the pupil can see, if sulphur and copper filings are put into a test tube and melted, the result, and may accurately describe it; but he could not write the formula Cu†S=CuS. But his knowledge added to the skill of the teacher ought to bring about the desired result.

From this it is obvious that the pupil does not understand the book knowledge of mother nature, for God in all his omniscience has ordained that nature herself should be his teacher from the beginning; that he should have knowledge first hand, not as it had been interpreted by some one else. Text book knowledge of science is by itself absolutely valueless, for it has not become the pupil's own.

Great respect is due the modern method which brings the child and nature into brotherly contact making them better acquainted with each other and hence better friends. This is the reason why in ninety-nine cases out of every hundred we find students of science more in harmony with nature, thus raising themselves to a higher and better moral plane than their non-scientific companions.

In closing I would like to ask if we should not consider it our highest duty to improve and increase the knowledge of nature, its phenomena and laws and and thus aid ourselves and our successors in our course towards the noble goal which lies before mankind.

PERSONALS & LOCALS

The Seniors are feeling better.

Who is going to bring the crackers and cheese?

Mr. D. Setchfield of '98 visited his alma mater the first of the month. Mr. S. expects to be master of a "normal" school in the near future.

Miss Lottie Thacker will be found at the Home in the future.

The latest kind of a spread—a "bread-spread."

Mr. P. drew a book on fear and left his card on the desk as follows: "Fear Jas. A. P.—Tuesday morning." Nobody was hurt.

Ask Hall if he ever tried to lock his nose in his locker.

Ed. says it wasn't fifteen minutes after eleven that night.

Messrs. H. and S. have a new remedy for flies. A hornet's nest full of live hornets hung up where the flies bother you will soon clear the premises. Interpret it your own way.

Mr. H. W. Hibbard of the Senior class has been engaged by the Unity club of this city to teach physical culture in their gymnasium.

Have you got your library lesson?

Teacher –What is a bat?

Pupil—A bat is a dirty little mouse with India rubber wings, a shoe string for a tail, and bites like the d——.

Andersonville and Libby prisons have been reopened. Does it mean war?

Mac—Where did you get those shoes?

Waite—(Looking at his shoes.) I "bied" those, aren't they beauts."

The girls complain of loss of appetite since Mr. and Mrs. MacArthur left the home. Nothing like jolly company in the dining room.

Mr. H. was caught in a "cyclone" on September 25th and has worn a pale look about the mouth ever since—he lost his mustache.

Miss Margie Fuller left for home on September 26.

Prof. H.—How does lymph differ from blood?

Mr. Cr—n—It is of a lighter complexion.

Miss Margaret Irish left for her home at Sauk Centre to nurse her sick brother just home from Chickamauga.

Prof. M.—Do you think the owl has a wise look?

Miss B—r—I wouldn't know a wise look if I saw it.

Paul says he never walked home so fast before in his life. Wonder who he walked with?

Mr. T— is walking triangles now-a-days.

Inquisitive student—How can we tell a bumble-bee from one of those things? Meaning a robber fly.

Prof. H.—Catch one and see.

Speaker in civics class—Clerk, will please give the result?

Clerk—The vote stands 10 ayes to 2 noes.

Speaker—10 eyes and 2 noses. The "bill" is passed.

The Zoology class went out in search of beetles the other day. Ask them how many they caught.

Phil. Georger of '98 was seen on the normal campus Saturday morning. Mr. Georger is teaching near Rice, Minn.

Miss C-u-u-e in speaker's chair—Why-y-y, where am I at?

The normal foot ball team has finally been organized with Paul Ashley as captain. A change in the "line up" of the team has greatly improved it, and with the present way of going at it the team will soon speak for itself. Two games will be played here in the near future. One with the N. P. team and another with the St. Cloud team.

Mr. Courtney left on October 8th to teach a term of school near Kimball. We wish him success.

H. W.—I would rather go to the reformatory than teach music. But he didn't go.

Can a cat turn a somer-sault in the air? The Science club would like to know.

Miss S., in the Science class—Once in falling, my hands touched the ground a second before my feet.

Prof. Mc.—Where were your feet when your hands touched.

Miss M.—If that had been me it would have been easy enough.

William Owen company at the Davidson Oct. 24 to 29.

Say Mr. M.—What's the matter with your nose? Mr. M.—Nothing, only I tried to take a ride on it.

Mr. P— says there is a willow down the river that's "awful nice."

The best place to buy a hat or bonnet if you want the correct thing is at Mary Kron's.

The Normal school exhibit at the fair attracted a great deal of attention and the students in charge were kept busy explaining and answering questions of visitors.

Wm. Owen who will be at the Davidson next week is acknowledged to be one of the ablest students of Shakespear's great plays.

Mrs. Skelton speaking to the girls—"Each one of you girls have four or more gentleman friends to influence for good or evil."

Girls—"Not at this school, it is 16 to 1 the other way."

William Owen company presents only high-class plays—Shakespear's predominating.

It is claimed that Mr. J—n is quite a f(F)lasher of late.

Two dishes of grapes will not scare the girls at table. No two. Try thirteen.

Messrs. LaRue and Fazendin of St. John's university visited at the Normal during the fair.

The next issue of the Normalia will be an Evergreen number, published by the E. G. class.

Miss Emma Langdon of the E. G. Class has gone home on account of the sickness of her sister who is not expected to live.

All Normal students should see William Owen, the brilliant actor at the Davidson Oct. 24 to 29.

The prevailing question among the E. G.'s for a few minutes after the test in psychology: "Say, what is an adjective pronoun?"

Miss T. (finding two forks at her plate)—I'm going to a wedding. Miss E.—A lady's or gentleman's.

Prof. S-m-r—Now Miss O—r if you and I were walking down the street together and I should leave you, how many would be left?

Voice from class—Nothing.

Why did Miss R— drop the cake?

Mr. Kook was the guest of his daughter, Miss Lillie Kook at the Home.

Lieut. L. R. Holbrook of Boise Barracks, Idaho, was the guest of his sister, Miss Holbrook at the Home.

Miss Lottie Thacker as Eva in Uncle Tom's Cabin.

How did Alma Jess Junelillies get through the transom? What principle in physics did they, evidently, prove?

Don't try to memorize the parts of the brain. They are in your head anyhow—to the E. G.s in Psy.

When you hear that bell go ding, ding, ding—well you know what to do, but don't join hands in the hall.

Oct. 8th, 9 p. m—grand rush for the folding doors.

Why does an ice cream social induce one to join a class in vertical writing? H. W. H. can tell you.

Why is it that Mr. S. attends the Y. P. meetings at the M. E. church of late. Perhaps Miss M. can solve the mystery.

Mr. Costello, one of last year's C.s, visited the Normal a few days last week.

Salutations. A "cow" says moo (?)
We say, How do you do.
Prof. S——r says the French say: Parlez Vous. (Is that the way they teach French in New York?)

The Normal boys in Co. M. 13th Minn., who are at Manilla, were remembered by their felow students at the Normal. A collection was taken up and everybody did his share in helping to send the brave boys a suitable Xmas gift.

Prof. Mc——n showing an owl to the primary: Do you know of any other bird that has feet like the owl?

Bright little boy: Another owl.

Cicero: Quos stare ad curiam.

Mr. A——y: Who stare at the senate house.

Subscribers who do not receive their NORMALIA or change their address should notify the business manager at once and the paper will be sent.

Paul says bridges are allright no matter where they are.

There are quite frequent spreads at the home but the boys are not in it.

Little things lead to great events. For example—a lamp chimney. Fun?

Ask Miss W—n which "snap shot" taken at the lake on Sunday, she likes best.

Impromptu temperance teaching. 'Marcus erat prudens, qui vinum non gustaret."

Miss M.: Marcus was prudent since he would not taste poison (venenum).

The practice teachers were kept quite busy getting the Normal exhibit ready for the street fair.

Paul Ashley as captain of the foot ball team is the right man in the right place.

Prof.: Mr. T., what is the relation between Mr. C. and the chair? Mr. T.: He's sitting on it.

Mr. Sture tried to show the E. G.s how they might study the seed.

It is evident to all that the NORMALIA cannot be published without funds, which must come from our advertisers. In return they expect the trade of the Normal students. Before making your purchases look up the wide awake merchants—they advertise in the NORMALIA, and let them know that you trade with them because they advertise in your school paper.

Mary had a little lamb,
It followed her each day
Till Mary donned her gymnasium suit,
And then it ran away.

Uncle John and Aunt Sal of Wayback Nowhere have come to make a visit with pa, ma and the twins.