

HABITS OF THE MIND.

Valuable Suggestions to Teachers—Concentration of the Pupil's Mind.

Persuaded that some direct means must be found for the development of more intelligent and efficient working power, and aided by the observation and experience gained in contact with the minds of nearly 2,000 pupils, I was led to conclude that the power our pupils need lies in the ability to concentrate the attention. Then arose the question, How may the powers of perception and of concentration be gained at school, and made to become habits of the mind? Plainly, in no other way than by regular and systematic training to this end. Then was formulated a variety of exercises, to be practiced by the pupils from ten to twenty minutes each day, with no effort at learning or memorizing, although these would be attained, but solely to the end of acquiring the power of attention.

To insure quickness and accuracy in seeing, the reversible blackboard may be made a valuable auxiliary. A collection of figures, groups of circles or marks for unconscious counting, lists of words and long sentences may each be presented for an instant, and the pupil be required to write or to repeat precisely what they have seen. These exercises, it must be understood, are as distinct and apart from the work of learning lessons as are gymnastic exercises from the habits which follow their use, and, like such physical exercises, are to be considered only as means to an end.

Various and multifarious are the means to which the awakened teacher may resort to quicken the minds of her pupils, and to obtain that all important result of attention—accuracy in seeing and hearing. One of the most renowned of French educators was accustomed to require the boys under his charge to run with all speed past the shop windows of the streets, and on returning to write the titles of all the articles exposed to view. It has been proved that the power to concentrate the attention may be cultivated and strengthened to such a degree, the mind becoming more and more obedient to the will, that pupils thus prepared are able to learn lessons, within their comprehension, in less than one-half of the time formerly required.

I venture to assert that a very large part of the time spent in studying lessons in school and at home is wasted for lack of early training to habits of perception and attention.

Instead of vexing the mind of the delinquent with persistent questioning, for the mere sake of "hearing the lesson," an endeavor as hopeless as that of trying to pump water from an empty cistern, let the teacher first make clear the meaning of the lesson, emphasizing with marked distinctness the principal points; this done, require the learner either to write or to repeat the precise words, or words of the same meaning, which she has just heard. This requirement, he it understood, is not for the sake of committing the words to memory, but is a means of holding the pupil's entire attention until she has full possession of the lesson to be learned. To know that the results must be produced at once will stimulate the dulled mind to its full measure of activity, and in the effort to recall the exact meaning, and the corresponding words, all other ideas must be laid aside; the teacher is calling her to a quick account, and there is no escape.

The teacher will find it expedient to set apart, each day, short periods of time, varying in length from ten to twenty minutes, according to the age of her pupils, for the single purpose of developing and strengthening these faculties which will, at last, enable them to study, according to the true meaning of the word.

In order to show how much may be accomplished by training the mind to accuracy in hearing, when the power of attention has been acquired, some examples, by way of results, are here given. In my school were assembled about forty girls from 14 to 18 years of age. A poem by Wordsworth, consisting of twenty-four lines, was perfectly recited by the entire class in seven minutes; the teacher, as is her invariable rule, read each verse once only. An extract of seventeen lines from one of Charles Lamb's stories was accurately repeated after nine minutes. Twenty-one lines read from Washington Irving's "Sketch Book" were instantly reproduced without an error.

A part of the description of the battle of Waterloo by Victor Hugo was read aloud once, and the listeners immediately recalled thirty-six lines, or 416 words, precisely as they had heard them; and this was done without the least mental strain. The power had been acquired by a slow and systematic process of training, lasting but a few minutes at once.—Catherine Aiken in The Century.

How Long It Takes to Think.

Dr. J. McK. Carrell has constructed an ingenious apparatus, by which he can determine with a considerable degree of accuracy the time it takes to think, and has experimented with many interesting results. Thus to see white light took one-twentieth of a second; to see a picture, one-tenth of a second; to see a letter, one-eighth of a second; to see a word, one-seventh of a second; to judge between red and blue one-thirtieth of a second. Some letters and words require more time to see than others. The time of remembering can also be measured. The name of a familiar word takes less time to remember than the name of a letter, though the letter can be seen in less time. The name of the next month

can be thought of in less time than that of the last. Sensation travels by the nerves to the brain at the rate of about a mile a minute, which is slower than was supposed. It would be interesting to test some of the numerous memory systems now advertised by this method.—Philadelphia Times.

Facts for Lovers of Birds.

The yolk of an egg has in its middle a jelly like speck or germ, from which a young bird is hatched. The yolk is made that this germ is always opposite, no matter in which position the egg lies; so that when the hen is sitting the germ is always nearest to the armpit. The yolk and the albumen (or white) furnish food to the bird while it is in the shell. At the larger end of the egg, between the skin and the shell, is a space filled with air for the young one to breathe.—Milton Argus.

The Dog's Remarkable Power.

Of all the feats common to hunting life and woodcraft none seems to me half so wonderful as tracking or trailing. As practiced by man tracking is wonderful enough, but far more marvelous is the power by which a dog or fox can follow its prey at full speed, guided only by scent, without erring or being led astray. To us the word scent has but little meaning. It is the name of a power with which man is comparatively almost unendowed. We go into the woods and see nothing but a leaf strewn ground, thinly scattered over with herbs and thickly planted with trees; we see no quadruped and find no sign of any, perhaps, save the far away chatter of a squirrel. But our dog, merrily cowering about, is possessed of a superior power. At every moment of his course he is gathering facts and reading a wonderful record of the past, the present and even of the future. "Here," says his unseen guide, "is where a deer passed a minute ago," or "an hour ago;" "this was the course of a fox a week ago;" "that was the direction in which a rabbit flew by a few minutes ago, and, oh! there was a weasel after him!"

Such is the curious record of scent, revealed to the dog, but hidden from the man, and even inaccessible to him, for though we have theoretical knowledge of the subject it is too imperfect to make us fully understand that not only has every kind of animal, but even individual animals, its own peculiar scent. Thus the dog can distinguish not only the bucks, does and fawns of the deer tribe, but can pick out of a dozen the track of the particular buck that he is following and never leave it or lose it. Moreover, he can tell by the scent which way the animal is going, and he is never known to run backward on a trail.—St. Nicholas.

Papers for Notes and References.

For all kinds of memoranda, notes and references, I use a uniform paper—namely, paper cut the size of a postal card, common paper, such as one can get in any quantity at a printing office for almost nothing, and cut in the bargain. A bunch of these papers, kept together by a rubber band, is always lying at hand ready for use. Whenever I am reading a book I put one of these papers as a mark between the leaves, and it is the work of only a moment to note thereat the number of the page, with a catchword or two as a guide to the character of the passage, whenever I strike anything that I wish to remember. This manner of referring can be used with a borrowed book as well as with one's own, as it leaves no unsightly marks or underlinings. When the book is finished I thus have a list of the parts that are of most significance to me; and the list may be filed as it is, or, in case of references of special importance, its topics may be drawn off and kept in topical or alphabetical order.

On these same papers I keep also my own notes and comments, and all are kept filed under the same alphabet. To facilitate the finding of these afterward, I always give a title to a note or reference, like the side heading of a paragraph. Thus I bring all that I may want to use again, whether lines of thought that I myself have begun, or thoughts that I have collected from others, under one index, ready for use together.—John F. Genung in The Writer.

Fatal Reminiscences.

Col. Fred Grant and Robert Lincoln were conversing in low tones in the Fifth Avenue hotel corridor. Col. Grant pulled a cigar out of his pocket and stuck it in his mouth. From his trousers pocket he drew forth a solid gold match box, studded with diamonds. He touched the biggest stone with his thumb and the lid of the box flew open.

"Quite a match box," said Lincoln. "Yes," said Col. Grant. "It was given to father by the sultan of Turkey. It is very valuable. Father carried it for years. Do you carry anything that was precious to your father?"

"Yes," was the reply, and the speaker pulled out of his pocket an open face solid gold watch.

"It was given to father by mother," said the speaker. The inscription read: "To Abraham Lincoln, from his loving wife."—Foster Coates' Letter.

The charities of London last year amounted to \$22,000,000. They were devoted chiefly to religious purposes, \$5,000,000 being spent on foreign missions.

Children Cry for

ROMANCE OF COTTON SEED.

Its Rise in Agricultural Importance Reads Like a Fairy Tale.

Was ever there a history this side of Cinderella of the uprising of humility, like that of the cotton seed? So! For seventy years despised as a nuisance and burned or dumped as garbage, it then discovered to be the very food for which the soil was hungering, and reluctantly admitted to the rank of ugly utilities.

Shortly afterward found to be nutritious food for beast as well as soil, and thereupon treated with something like respect.

Once admitted to the circle of farm husbandries, found to hold thirty-five gallons of pure oil to the ton, worth in its crude state \$14 to the ton, or \$40,000,000 for the whole crop of seed.

But then a system was devised for refining this oil up to a value of \$1 a gallon and the frugal farmers placed a cask at the root of every olive tree and then defied the Borean breath of the Alps.

And then experience showed that the ton of cotton seed was a better fertilizer and a better stock food when robbed of its thirty-five gallons of oil than before.

And that the hulls of the seed made the best of fuel for feeding the oil mill engine.

And that the ashes of the hulls scotched from the engine's drift had the highest commercial value as potash!

And that the "residue" of the whole made the best and purest soap stock to carry to the toilet the perfumes of Lubin or Cologne!

About this time we began to spell cotton seed with capital letters.

And how it traveled abroad in its various dresses! As meal cakes it whitened the meadows of England with woolly fleeces and lattered the British cattle under the open sky scattered on the steves of the quays in lots of land; it glistered in the cafes of Paris as olive oils under seals and signatures it couldn't even promise to save its life, and from under the oaks in Holland it went forth to parade in all the bravery of butter and buttering.

In our own country it renewed the wasting strength of southern fields and clad them with richness that would shame the flocks of England, or yellow that would pale the flocks of Argentina. It kneaded the western hog into spots and poured the western land out of the Irving pan into the fire. It furnished the Armours and Tanankees with a pure substrate for the rabbit fat they had been shipping us, and suggested the possibility of a clean and cheap lard.

And about this time congress jumped on to cotton seed with its feet and proposed to check its further career by a prohibitory tax.

And now comes a gentleman of this city with a process by which he extracts thirty gallons of the oil from every ton of cotton seed much after the oil mills have done with it. In the "hullings" of the oil mills he finds this unexpected and ample store of wax, he deftly extracts with naphtha, leaving the rest more nutritious as food for bees or milk than before he took \$10 per ton from it.

This process he has proved repeatedly in his laboratory, and soon will approve in wider practice in a mill erected for the purpose near Atlanta. This invention will add 40 per cent. to the quantity of oil taken by the old process from a given quantity of seed.

More than this, it suggests the splendid possibilities yet undeveloped for this rural Cinderella that has risen all so swiftly from the ashes and the waste heap!—Atlanta Constitution.

Copper Poisoning or Ague.

The disorder known as "brassworkers' ague" has heretofore been but slightly investigated, the known facts in relation to it being that after being exposed to the fumes of the molten metals, copper and brass, the workman feels a sensation of discomfort and weakness, followed by muscular pains, and then by a distinct chill, with headache and often cough; after fifteen or twenty minutes a profuse perspiration breaks out, then in a few days the improvement begins, the patient recovering in one or two days, though liable to a relapse. Recently Dr. Allen, an English physician, has reported a number of observations, and from his belief that brassworkers' disease is due to chronic or acute copper poisoning. He finds that almost all the patients who are copper or brass workers have a distinct green hue or stain on the neck of the teeth, between the crown and the gum, the edge of the teeth being also slightly blackened; the gums perspirations of brassworkers are stained green, and white haired workmen often have a greenish tinge to their locks. These signs point to an absorption of copper by the workmen, and from the view that the "ague" is due, in large part, at least, to this metal.—New York Tribune.

Rheumatism and Gout Compared.

I have been lately enjoying the advantage of meditating over the relative discomfort of gout and acute rheumatism, having had both at the same time. Gout is not pleasant; the part affected feels as though an iron band a size too small were being squeezed round it, with an occasional interlude of a hot coal being dropped on it. But, on the whole, I prefer it to rheumatism, when the latter assumes the form of a tearing of the muscles.—London Truth.

Pitcher's Castoria.

Queer Religious Sects in Russia.

M. Tsakni, a Russian writer, has just published an interesting work upon curious religious sects in Russia. It appears that in the empire there are no less than 15,000,000 of devout followers of insane and cranky notions of Christianity; and new religions or sects are constantly springing up in spite of all the efforts of the Russian authorities.

One of these sects is called the Itinways. They fly from their villages and towns. They believe in returning to wild state of existence, destroying their identity as much as possible, and living like savages. Civilization they regard as the great curse of humanity. They all carry on a sort of brigandage, and one of their most sacred duties is to rob churches.

There is another sect, calling themselves Christists. They adore one another. Crazy dancing forms part of their religious ceremonies.

The Skoptzy, another religious body, believe in self-mutilation. They are also expert dancers and tumblers. Barnum would be proud of such a set of acrobats.

There is another sect that never speak. They make signs skillfully.

Bloody sacrifices form part of the religion of other fanatics, and the butchering of sons and daughters to appease the wrath of the Lord is getting rather too common.

There are also missionaries who go around preaching the glories and beauties of suicide, and its absolute necessity for salvation. A Mr. Senckhoff is the leader of this gang. He was arrested for murder some time ago, but managed to escape, and turned up in a village, where he preached so hard in favor of murder and suicide that several of his followers cut each other's throats, and others shut themselves up in their homes and burned themselves to death.—New York Sun.

World Famous Ink.

It was in the latter days of the T'ang dynasty that one of Li-tchao and his brother Li-tung-Kouei, set up a manufactory of ink in the small town of Chu-tye, which was then surrounded by magnificent forests of fir, from which fact it may reasonably infer that the black ink to be made from the consumption of the wood. The father had grown old in the business without making any particular reputation; the son, however, having the processes they employed to the highest pitch of perfection, but he had by his methods a profound secret, and the time the effects of all the makers have been directed to producing an ink as good as his. Yet it is allowed by connoisseurs that nobody has yet succeeded in equalling his makes, especially those in shape of a sword, and of a round cake—what are his masterpieces.

We are told that an infallible means of recognizing the ink of Li-tung-Kouei is to break a piece off a cake and throw it in water. If, in a month, the pieces are still unacted upon at the bottom of the vessel, we may be certain that they are really authentic. This great genius had several qualities, which are distinguished by the characters stamped upon them. Three are of the highest excellence, unapproachable by any modern; and the fourth, which may be considered as the ordinary article, bears his name, together with the title conferred upon him by imperial decree as a reward for the service he had indirectly rendered to literature.—All the Year Round.

Hemlock Belt of Pennsylvania.

The Pennsylvania hemlock belt embraces a tract probably fifty miles square, taking in a part of Potter, McKean, Cameron, Forest and Elk counties. Timber experts claim that this belt contains nearly one-half the timber now standing in the United States east of the Rocky mountains, and to this fact is due the establishing of several new and large lumbereries in the vicinity of Olean. Lumbermen estimate 15,000 feet of lumber and ten cords of bark to the acre in the belt, making 50,000,000,000 feet of lumber and 10,000,000 cords of bark. Besides the hemlock there is a variety of hard woods, including cherry, of the very best quality.—Butler Herald.

Shrewdness of a Mouse.

The wild mice of southern California have a deadly enemy in the snake which abounds there. In order to avoid these reptiles the shrewd old mice take possession of the birds' nests in the cactus plants, and there rear their young. A traveler states that he has seen an old mouse run down the trunk of a cactus with half a dozen young ones holding on with their mouths to various parts of his body. How they do this without being injured by the cactus barks is a mystery. For the barks are so sharp that snakes never attempt to climb the trunks of the plants.—Cincinnati Enquirer.

Light from the Air.

Since total eclipse in excess of two days duration are practically unknown in the United States it is entirely feasible that country houses by wind power. A single dynamo may be operated by wind and storm batteries charge as fast as needed. It will probably be found that the cost will be greater than it has been, but there is no comparison as to convenience and beauty, and it is certain that the whole will be a source of power for lighting the homes of such country people.—Chicago Herald.

The first telescope of Galileo was made of part of a lead pipe, in each end of which was cemented a suitable objective glass.

PERIODS OF CONTAGIOUS CRIME.

Do Criminal Epidemics Have Their Origin in the Secret Springs of Nature?

It has been frequently noted that there are epidemics in suicide and in other crimes. A criminal epidemic peculiar to Chicago, and to one or two other cities having a large floating and vicious class population, is that of Sunday murders, which are the results of a day of idleness spent in the open seasons, where the vilest and most fiery liquors are sold. Murders with peculiar features often occur in groups in all parts of the country. It has been traditional in France that epidemics of suicide return in regular cycles, at each recurrence of the suicidal furor, the successive victims of their own murderous hands vieing with each other in the greater gladiolous of the tragedy that they enact. During one of these periods a suicide literally "snapped the climax" by leaping from the top of a tower, 200 or 300 feet, to the pavement below.

Stories of wife murders in many parts of the country, related by a few exceptional murderers of husbands by their wives, such the press and the public simultaneously from many different sources. "Murder is in the air" has become an habitual expression from the return of these bloody times. In the days of bank burglaries—now much less frequent, owing to the protections that science has provided for money vaults—it was not often that a single robbery was reported—they "came in litchious." This was not because the same gangs engaged in many different enterprises, but because a universal similar impulse permeated the minds of the criminal class devoted to these forms of guilt.

A curious study might be made of the causes of epidemics of crime. In ancient times all evils were attributed to the influence of adverse stars. This may have been an approach to scientific truth, or its advanced shadow. That meteorological conditions seriously affect the health and spirits—and affect some more seriously than others—is a fact of such every day experience that it is no longer regarded as phenomenal. The causes of such epidemics must be the causes of the changes in the prevailing disposition of the times witnessed to commit peculiar classes of crimes. A special atmosphere must have its origin in some of the secret springs of nature.

Advanced speculation has recently attributed epidemics of crime to solar disturbances, earthquakes and other natural disturbances to great changes in the surface of the sun in the super-time the effects of all the makers have been directed to producing an ink as good as his. Yet it is allowed by connoisseurs that nobody has yet succeeded in equalling his makes, especially those in shape of a sword, and of a round cake—what are his masterpieces.

What a Despotism Is.

In Russia every conceivable act of man is regulated by law. No private enterprise can be established, no corporation formed, no business entered into without the consent of the state. This law is not the act of a legislative body, but the decree of the czar. "Some decrees read: 'I forbid'; others: 'It is permitted.'" In other countries what is not forbidden by law is allowed. In Russia everything is forbidden which the law does not expressly permit or the spirit of the executive power tolerate. It is not the good of the people that is studied, but the welfare of the despot. There can be no mistake; it is impossible for the czar or his agents to do wrong. They have an expression in Russia: "He has offended." What? That is nobody's business. He has offended the police, who accept no apologies and seldom forgive. He may not have violated written law, or even custom; he has simply "offended," and that is enough. He goes to prison, perhaps to Siberia, as the tyrants dictate, or no court interferes, and no human corpus is known. There is very little for the lawyers to do but bribe the police.—William Elmer Curtis.

The Power of Memory.

Having once possessed knowledge, we can never lose it; the power to use it may be temporarily lost, but there is no knowing when the proper chord may not be struck, and the old fact of memory or the old problem long worked out may not be regained. All our experiences may fade away into the realm of unconsciousness, yet they are not lost; they are only dormant and biding their time.—Francis Speir in Popular Science Monthly.

India's Sex of Poppies.

The country then took a greener appearance in wheat, grass (I think it is vetch), castor oil, dahl or split pea and poppy. Some of the fields of the latter at a distance in full flower looked like snow fields, so white and pure was the bloom. England will require long generations of piety to undo her great wrong in mining gold as she does out of the mania and misery of so many millions.—Carier Harrison's Letter.