NOTES ABOUT SCHOOLS AND THEIR MANAGEMENT.

The College Graduates as Teacher in the Public School-Instructions Telling How to Make Relief Maps-What to Teach Children.

Which Succeeds Best?

It is a current question whether the college graduate or the normal school graduate succeeds best in school work. The difference between them arises in the larger scholarship of one as set over against the professional training of the other. Each has its respective advantage, and also his respective shortcoming. The logical conclusion is that every teacher must have the liberal scholarship of the one and the professional training of the other-should be a gradwate of both schools. One of the most pleasing and hopeful signs in the educational growth of Indiana is the large number who take both the normal and university course.

But it is not my purpose to speak of this matter in general, but to call attention to the conspicuous defect of the college graduate for public school work. This defect is that of failing to take account of the psychological, or chronological factor in education. He has been absorbed in the logic of the subject for Its own sake, and when he comes to teach it the only factor in the process which he is accustomed to consider is the subject itself. He teaches as he was taught. If he began his work in zoology with the microscope and protoplasm, it must begin thus to whatever grade of pupils It is taught, notwithstanding that the child naturally and necessarily begins with the external facts of color and form and parts, in action and habits of the animal. A scientist of the State once insisted that for the child to study the color, forms and external structure of leaves, as was being done in the schools, was worse than a waste of time. He held that a child should begin with the inner, the vital principle of the leaf, by microscopic study, and thus construct logically the botany of the leaf. Yet, up to the time of entering school, mother nature had taken an opposite course with the child. An eminent teacher of botany in a university, who is a graduate of a normal school, said recently that his students do not teach botany well in the public school, because they take the order which he pursued with them to the proper order to pursue with pupils in the grades and in the high school. This university professor differs from the one referred to above, in having considered the child's order of learning in addition to the subject matter to be

Everywhere the logical order of the subject has been forced upon pupils; so that just now there is a general and heroic effort to readjust the course of study to the natural order of the child in learning. We are no longer satisfied to follow, in the course of instruction, the logical order of addition, subtraction, multiplication and division; or that of arithmetic, algebra, geometry and trigonometery. While grammar logically precedes composition, the school course reverses the order. History must not be deferred till geography is completed. The recent fruitful agitation of the question of the course of study-enriching it, correlating it and concentrating it-is only an effort to the psychological order of the growing pupil.

The college graduate is apt to make a mistake in management similar to that which he makes in instruction. He tries to manage children as he would young men and women. He assigns lessons to the child and the adult in the same way, and assumes that children will prepare a lesson by being told to do so. Little precaution, therefore, is taken to secure the full effort of the pupil during the study period. Since college students prepare their lessons at home, the same custom is carried far into the public school. Recently a college graduate was superintendent of the schools of a city, and he required the pupils of the high school to meet only for the recitations, and that in the forenoon. This superintendent was succeeded by a normal school graduate. who immediately changed the plan and required the pupils to attend the full day, and to prepare lessons under the direction of the teacher. No matter which of these was right, their difference illustrates the point under discussion. One who manages a school successfully must consider the development of the pupil. There is a time when the pupil should have the most minute and direct attention from the teacher during the preparation of the lesson; and there comes a time when such attention would not only be useless, but harmful-a time when the pupil should be left wholly free to choose his own time, place and manner of preparing his lesson.

The college man makes in many ways a college out of a high school. He preaches, or has it done, a baccalaureate at commencement. He calls his classes freshman, sophomore, junior, senior. They must organize and have class presidents, and, above all, class colors and class school yells. They have foot-ball teams and oratorical contests. Are they not soon to don the cap and gown at graduation? I do not mean to say that these things are bad, but to point out a natural tendency of the college man in managing a public school.

Of course the normal school graduate tends to make parallel mistakes along the opposite side of the foregoing; but I am not considering those now. They lie in the direction of over-consciousness of method in instruction, over-regulation in management.-Arnold Tompkins, in Indiana School Journal.

How to Make Relief Maps. sached to the value of relief work in the catch sold for nearly \$40,000.

teaching the study of geography, writes Ella J. Douglas, in American Teacher. It impresses upon the mind the conspicuous features of the continent and aids in imagination to picture its surface. It is by all means the best method for securing the attention of pupils and to lead them to acquire a useful knowledge of correct geographical form from

It will be best to first model a map of our own country. Obtain the services of a mechanic who can make a suitable frame upon which to work the relief. It must be made of pine boards well seasoned, to prevent warping. They must be doweled and glued. Rim it

about an inch in height. Maps are made of modeling wax, plaster of paris, putty, and other similar substances. The following material is a very good one and easily worked: For a map about two feet by three feet in size, melt two heaping handfuls of glue, into which place half a pint each of varnish and oil. Into this put more water and stir whiting into it as you would flour in mixing bread. Use as soon as prepared. In order for it to adhere to the board it is necessary that a coat of paint in which there is plenty of oil be applied. Use blue to represent, the ocean, except on the rim, which

may be painted some darker color. With a palette knife spread the material over the whole map which you have previously outlined in pencil. Build up the western highland and the basin between the Rocky and the Sierra Nevada mountains. Let the eastern slope be gradually downward toward the great central plain and at the north and upward toward Mexico. Spread more of the material for the Appalachian system and the height of land north of the Ohio River and near the source of the Mississippi. Next build up the mountains, making the Rocky mountains higher as you proceed southward. Locate some of the principal peaks and cut depressions in the map to indicate the canyons of the Colorado

and Arkansas Rivers. After the work is well laid in put it away to dry. You will be greatly surprised upon looking at it again to discover many cracks and crevices in your work. Do not be discouraged, as it is only the water drying out of the texture. These must not be worked over until thoroughly dry, as there is danger of the under coat being raised from the board. Repeat this process until perfectly dry, when it will be as hard and

firm as a rock. Now give it two coats of white paint in which there is about as much oil as you had for painting the board, and it is ready for the final coloring, which must be of artists' paint.

Your palette should consist of the following colors: Flake white, Naples, strontian, and chrome yellows, Chinese vermilion, Prussian and cobalt

For the flood plains-less than 500 feet-which are along the Atlantic coast, Gulf of Mexico,, and Ohio valleys, the eastern and southern shores of Lake Ontario, the valleys of the Columbia, Sacramento, and San Joaquin and a narrow strip along the Pacific coast, use Prussian blue, chrome yellow, and a small quantity of white.

Next paint the low plains-500 feet to 1,000 feet—which are found on either side of the Appalachian mountains, and the remaining portion of the Great Central Plain not included in the flood plains, also along the Red River of the North and the Colorado. Add white to the previous mixture of green for painting these. Make it considerably lighter for a contrast. For the remainder of the map, the height above 1,000 feet, mix white and Naples yellow. Paint the snow-capped peaks white, and the volcanoes vermilion. Trace the rivers in blue. These will require two coats. The lakes are made with Prussian and cobalt blue, yellow, and white. After all is dry, give it two coats of white varnish and you will have a map which will be of great service to your pupils.-Educational Jour-

"Do It."

Peter Cooper, who founded the Cooper Institute, in New York city, had a hard struggle. As a boy, his health was of the frailest. He went to school but one year in his life, and during that year he could only go every other day. But when he was eight years old he was earning his living by pulling hair from the skins of the rabbits his father shot, to make hat pulp.

He had not "half a chance." It seemed almost literally that he had no chance at all. He went to New York when he was seventeen years old. He walked the streets for days before he got a place, and then apprenticed himself to a carriage maker for five years for his board and two dollars a month.

He had neither time nor money for what the world called pleasure of hope. While he was working for fifty cents week he said to himself, "If I ever get rich I will build a place where the boys and girls of New York may have an education free," and so he did.

Teach Children That teasing is a positive crime. That they must eat bread before

cake. That bedtime is not a "movable"

That they must speak respectfully to the servants.

That bawling over bruises is unworthy sturdy beings. That they should not appeal from the

decision of one parent to the other. That punishment follows in the wake of prevarication and hiding more swiftly than it follows active mischief.

That it is bad taste for them to tell all that they learn of their neighbors' domestic arrangements through playing with the neighbors' children .- Ex.

Until 1871 there were no shad in Pacifi: waters. In that year a few thousand were introduced by the United Teo great importance cannot be at- States Fish Commission. Last year

THE BOOMING CANNON

RECITALS OF CAMP AND BAT-TLE INCIDENTS.

Survivors of the Rebellion Relate Many Amusing and Startling Incidents of Marches, Camp Life, Foraging Experiences and Battle Scenes.

Another Lincoln Story.

It would seem that even as early as 1852 Lincoln had acquired a reputation for story telling. When not busy during the session of the court he was "habitually whispering stories to his neighbors, frequently to the annoyance of Judge Davis, who presided over the eighth circuit." If Lincoln persisted too long the judge would rap on the chair and exclaim: "Come, come, Mr. Lincoln, I can't stand this! There is no use trying to carry on two courts. I must adjourn mine or yours, and I think yours will have to be the one." As soon as the group had scattered the judge would call one of the men to him and ask: "What was that Lincoln was telling?"

In his law practice Lincoln seems to have been singularly conscientious, his first effort being to try to arrange matters so as to avoid litigation. Nor would he assume a case that he felt was not founded upon right and justice.

"We will not take your case," he said to a man who had shown that by a legal technicality he could win property valued at \$600. "You must remember that some things legally right are not morally right. We will not take your case, but will give you a little advice for which we will charge you nothing. You seem to be a sprightly, energetic man; we would advise you to try your hand at making \$600 in some other way."

One of the most interesting anecdotes is the one quoted from Joe Jefferson's autobiography. Jefferson and his father were playing at Springfield during the sesson of the Legislature, and as there was no theater in the town had gone to the expense of building one. Hardly had this been done when a people condemned the theater and prevailed upon the authorities to impose fore. a license, which was practically prohibition. "In the midst of our trouble," | port for duty in the field," again resays Jefferson, "a young lawyer called | plied Grant, quietly. on the managers. He had heard of the injustice and offered, if they would place the matter in his hands, to have the license taken off, declaring that he only desired to see fair play, and he would accept no fee whether he failed or succeeded. The young lawyer began his harangue. He handled the subject with tact, skill and humor, tracing the history of the drama from the time when Thespis acted in a cart to the stage of to-day. He illustrated his speech with a number of anecdotes and kept the council in a roar of laughter. His good humor prevailed and the exorbitant tax was taken off. The young lawyer was Lincoln."

The notes of one of his speeches in a case against a fraudulent pension agent have been preserved. They are amusingly brief, as were all Lincoln's notes:

"No contract-not professional services. Unreasonable charge-money retained by def't not given to pl'ff-Revolutionary war-Soldiers' bleeding feet -Pl'ff's husband-Soldier leaving home for army-Skin def't-Close."

Another one of the anecdotes is related in connection with a case ivolving a bodily attack. Mr. Lincoln defended, and told the jury that his client was in the fix of a man who, in going along the highway with a pitchfork over his shoulder, was attacked by a fierce dog that ran out at him from a farmer's door yard. In parrying off the brute with the fork its prongs stuck into him and killed him.

"What made you kill my dog?" said the farmer.

"What made him bite me?" "But why did you not go at him with

the other end of the pitchfork?" "Why did he not come at me with his other end?" At this Mr. Lincoln whirled about in his long arms an imaginary dog and pushed his tail end toward the jury. This was the defense plea of "Son assault demesne"-loosely, that "The other fellow brought on the fight"-quickly told and in a way the

Blowing Up a Fort.

McClure's Magazine.

dullest mind would grasp and retain .-

it was thirty-two years ago, writes a reteran, that the memorable mine explosion took place at Petersburg, Va. For weeks the Union men had been at work building a mine under the Confederate fort.

At a late hour the night of July 29 the troops in the vicinity of the mine-the Fifth and Ninth Corps and the forces that had been ordered up from across the James river-were awakened, very gently, and directed to be ready to move at the "gray of day" next morning. Those veterans of many battles did not need to be told what was coming. "The mine is to be exploded," passed through the sleepy crowds and as quickly as the telephone could have sent it. From then until 3 o'clock the army was silent and sober. It seemed to them that one of the bloodiest struggles of the war was just before them. Many wrote letters to their dear ones. All conversed under breath or in whispers. Some wrote their names, companies and regiments on slips of paper and pinned them to their shirts. They did not want to get "lost in the shuffle"

in case of death. Hearts beat a little faster that morning, thirty-two years ago, when a glance at the east told of the approach of the "gray of the morning." The mine was to explode at 4 o'clock. That hour came and passed without a signal. The fuse had failed. Two brave men volunteered to enter the dark hole and see

edied, and at 5 o'clock the earth trembled. Every eye was on the Confederate fort in a second. A rumble quickly went to a deep, unearthly roar and the fort began to raise. Up, up, up it went, and then dividing, fell over a wide tract, creating a black cloud. Men, tents, cannon, wheels and all sorts of debris could be seen in the ris-

ing mass. It was an awful surprise to the poor fellows over there. The enemy on the right and left wildly ran, expecting

other explosions. Why didn't the Ninth Corps rush over and capture the line? They could have taken almost peaceful possession if they had moved at once; but they didn't. By the time they did charge the scared enemy was ready to meet them, and a most bloody fight ensued. Great numbers of Burnside's men, after fighting heroically, were driven into the hole made by the explosion, which was twenty feet deep, wide and 100 feet long. Many of these were killed or wounded and the balance made prisoners. The field over which the Union men retreated to the entrenched line from which they had charged was covered with dead and wounded. It was a blunder that cost the army 4,000 brave men.

A Fearfully Obstinate Man.

At the time Gen. Grant assumed supreme command of the Federal armies, there were stationed in and about Washington some carpet regiments. These troops were kept near the capital and out of danger by influences that need not be described. Grant at once ordered them to the field, and the order promptly created a stir. The next morning he called to see the Secretaary

of War. "We will keep these regiments at Washington," said the Secretary, lofti-

"I have already ordered them to report for duty in the field."

Washington," said the Secretary, lofti-"I have already ordered them to re-

"We will keep these regiments at

port for duty in the field.' "We will keep these regiments for

religious revival broke out. The church duty at Washington," repeated the Secretary, more peremptorily than be-"I have already ordered them to re-

> "Who is in command, you or the Secretary of War?" was the angry re-

"I think the President is in command," coolly answered Grant.

"Oh, you appeal to the President, do you? Well, we'll see." They had it out with the President in

"General Grant wants to appeal to

short order. The Secretary opened

you, Mr. President.' "Not at all. I have no appeal to

make." "Well, he wants to tell you some-

thing." "I have nothing to tell."

"All right; if you don't tell it I will." Then the Secretary proceeded to tell Up to the time he had concluded the President had said not a word. When the excited Secretary came to an end Lincoln tilted back in his chair a lit-

"I tell you, Stanton," he remarked, Mrs. Grant tells Mrs. Lincoln that her husband is a fearfully obstinate man, and I guess he's so obstinate that we'll have to give him his own way."

The Only One Left. In a small village called North East near Erie, Pa., full of years and honors, Old Ned, the only living representative of the equine race who went through the civil war, awaits the bugle call. The veteran is now 38 years old and is the property of B. F. Crawford. who came into possession of him during the war.

Old Ned was originally a rebel. He was captured by the "Yanks" when Gen. Jubal Early made his raid on Washington in 1864 and given to Crawford, who was then a sergeant of ordnance and who had lost his mount At the close of the war Mr. Crawford left Washington on the horse's back and rode him to Harrisburg. There he bought a sulky and, putting the animal between the thills, rejoicing in the daws of peace, made their easier way to a home that Old Ned has distinguished by his presence, where he is regarded as public property, and where he is pointed out every day as the most prominent resident. This contraband when captured was a bright black, but now, with advancing years, has grown grizzled; indeed, most of the hair on his head has become white. His saddle marks are strikingly noticeable, and he, like many another contraband, shows the scars of his burden bearing. No Roentgen rays are required to discover the more prominent portions of his anatomy. In his early life he "scorned delights and lived laborious days," but he is now treated like a pensioner. His life is a reminiscence. Having fought in the greatest army that ever marched to martial music and for

the best Government that ever enlisted equine valor, he is thought to have earned four quarts of carrots three times each day and two quarts of bran. Old Ned has been present at several Grand Army encampments and has never failed to attract considerable attention. At Louisville last year, out of respect to his age and infirmities, he was carried on a float and was given a grand ovation. When a squad of Early's men saw him they cheered him to the echo and rushed up to touch the gallant steed. If his life is spared he will participate in the G. A. R. encampment at St. Paul in September. He will be under the care of Mr. Crawford.

The man who prays right will see to what was wrong. The defect was rem- it that his example is right.

journeys.

who always accompanies him on his

REALRURALREADING

WILL BE FOUND IN THIS DE-PARTMENT.

How to Care for the Bean Crop-Barn Cisterns Better than Wellg-Wonderful Work of Bees-Removing Unfruitful Trees-Farm Notes,

Bean Harvesting.

Beans are planted any time in June after the ground has become thoroughly warmed and corn planting is out of the way. The soil should be rich, well drained, well plowed, thoroughly pulverized, and kept free from weeds until the crop has matured. Caring for the crop after it is done growing requires much skill and painstaking attention. Formerly, and even to-day where beans are raised on a small

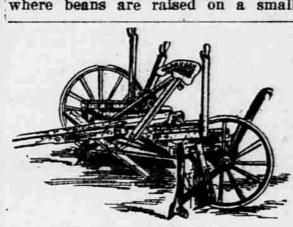


FIG. 1. A BEAN PULLER.

scale, the bunches were pulled by hand and placed in piles until thoroughly dried out. To-day large growers use machines for cutting off the plants. A puller is shown in Fig. 1. Two rows are pulled at the same time. The horizontal knives run just beneath the surface of the ground and cut off the stems. The tops are brought close together by the rods above the knives. They can then be easily gathered up with a fork and placed in the shock. Allow the shocks to remain in the field. until thoroughly dried. The shocks after thorough drying can be placed in a stack or a hay mow. Care must always be exercised to prevent much packing while being stored, otherwise molding will ensue. Avoid tramping by placing a board for the operator to stand upon. When ready thresh, using a bean thresher. Small lots are beaten out with a flail, and cleaned by means of a hand fanning mill.

After threshing it pays to pick out the broken beans, also the discolored ones. Especially is this true where the crop is raised for seed. This may be accomplished by spreading out upon a white-covered table and removing the trash and defective beans. A number of machines have been invented for expediting this work, one of which is shown in Fig. 2. The beans to be picked are placed in the hopper. A force feed passes them regularly through the hopper into the perforated cylinder, where they are freed from dust and trash. They then fall upon a white canvas belt which is moving slowly toward the operator. While on this canvas, the discolored and broken specimens are easily seen and removed.

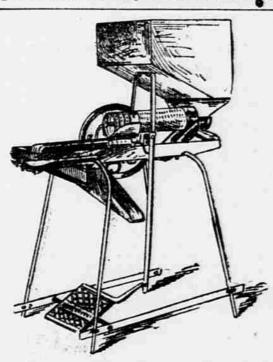


FIG. 2. MACHINE FOR SORTING BEANS. The perfect beans remain until they

fall into the spout provided to convey them to a sack or other receptacle. For large quantities there are machines upon the market run by steam or horse

power. Wonderful Work of Bees. Bees must, in order to collect a pound of clover honey, deprive 62,000 clover blossoms of their nectar. To do this the 62,000 flowers must be visited by an aggregate of 3,750,000 bees. Or, in other words, to collect its pound of honey one bee must make 3,750,000 trips from and to the hive. The enormous amount of work here involved precludes the idea of any one bee ever living long enough to gather more than a fraction of a pound of nectarine sweets. As bees are known to fly for miles in quest of suitable fields of operation, it is clear that a single ounce of honey represents millions of miles of travel. It is no wonder that these industrious little insects have earned the reputation of being "busy" bees.

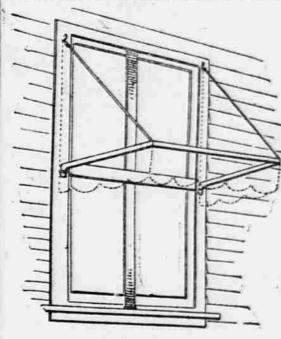
Barn Cisterns. It is bad for stock to depend on water | wish to turn off in December. drawn from wells near barnyards, as it is sure after a term of years to become contaminated. In all such cases a barn cistern with a filter at the outlet through which the water is drawn offers better security of pure water than can be had from water taken from a well. Some care must be taken to prevent dust and dirt being washed into the cistern from roofs. After threshing especially, and in the fall when leaves are flying, the eave trough should be frequently cleaned so that as little dirt as possible be washed into a well. An average barn roof will in a year catch water enough to winter the stock that will usually be fed in the looking at the pig. Size up the pig first,

Removing Unfruitful Trees, In every orchard there will be found some trees which are an injury to the farmer every year they remain in their present position, producing nothing themselves and lessening the product of neighboring trees. All old orchards | tening period.

need more fertility and also more room for each tree to ripen and perfect its fruit. Removing trees that have for years cumbered the ground, taking room that might be worth something if it were out, is often the best way to restore orchards to productiveness.

Curing Corn Fodder in Cock. When corn fodder is cut while the weather is still dry it will cure in better shape and with less loss if put up in small cocks rather than in stooks. The reason is that as days shorten and nights rapidly lengthen there is not sunlight and warmth enough in the daytime to cure the stalks as rapidly as they should be. In the cock the stalks will heat, bringing the temperature up to 100 or more, night as well as day. If a little dry straw is thrown on the cock so as to absorb the moisture at night, when the outside cold air condenses it, the stalks below it will come out green looking, yet slightly softened from the heat to which they have been subjected. Stalks thus cured will be eaten much more readily than stalks that have dried up by being exposed in stooks to drying winds. All farmers have noticed that in winter it is the corn stalks that have been heated and even molded in the mow that will be preferred by cows to stalks that have been dried in the wind and without the heat needed to soften the outer shell of the stalk. The moist stalks are also more nutritious, as in drying out the carbon in them turns into woody fibre, nearly indigestible. In putting up the cocks they should be small, so as not to heat too much and blacken the stalks. For the same reason they should not be left long before being drawn to the barn or

Awnings for Country Homes. Awnings let in the light but keep out the sun's heat, affording just the conditions needed in summer. Blinds keep out heat, but make a room dark and



FRAME FOR AN AWNING.

gloomy. Awnings may easily be made at home, this plan being easily carried out. A three-eighths inch iron rod is bent by a blacksmith into the form shown, and this is supported by screw eyes in the window case and wires extending from the outer corners to the top of the window case, hooks being placed there. These hooks also support the top of the awnings, eyelet holes being made in the cloth.

Winter and Summer Prices of Eggs. Always in the fall the price of eggs goes up, partly because the supply decreases then, and also because with cool weather those who prepare eggs for keeping in winter have more confidence and begin to buy extensively. We have often wished that no method had ever been discovered for preserving eggs. Then the winter price would be always what it costs to produce eggs in winter. Both the egg producer and the consumer would then be better satisfied. It really discourages the use of eggs to buy some and have them plainly a trifle stale, not changed enough as the dealer will tell you to hurt them. The truth is that an egg not perfectly fresh is an abomination. If only such were sold in market there would be better prices all the year round. But in such weather as we had in August an egg will spoil from the natural heat of the atmosphere in two days, so that it will not be fit to use. The refrigerator must be used more in keeping eggs, not to chill them, but to cool the temperature around them.

Coming of Autumn. Autumn wandered through the woodland Touching with his wand each tree: Summer stood reluctant, crying, Bring my beauties back to me." But the maple leaves grew crimson, Ripened fruit hung everywhere; And the harvester spoke, smiling, "Autumn's charms are full as fair."

Summer, weeping, wrung her fingers, Then gleamed forth the golden rod -Asters by the laughing brooklet Give new beauty to the sod: Mother Nature viewed the picture, Smiled as fell the first white frost-Sweetly said, "The summer's beauty Will return, for naught is lost."

The Pig Pen. Crowd the young porkers that you

Keep hog cholera out. It is not safe to depend upon knocking it out. It costs more to raise scrub swine

than thoroughbreds, and they do not fatten so easily nor bring so much. It is possible, by cleaning out the

pen once or twice a week, and disinfecting it with lime to keep the place in a sweet, presentable condition. Away with the idea that winter made

pork does not pay. Men that are prepared for such work often claim the greatest profit from winter feeding. Never allow the permiums won by the

sire and dam to dazzle your eyes when then his pedigree, and the reputation of the ancestry last.

Prof. Henry, of the Wisconsin Experiment Station, finds that cabbages have a good deal of value-more than potatoes and turnips-as a swine feed; especially in the first part of the fat-