Democratic Watchman.

Bellefonte, Pa., August 26, 1921.

I'LL TELL YOU WHAT'S KEEPING YOU DOWN, JIM.

I'll tell you what's keeping you down, Jim,
On the same job year after year—
Though your service has been long and faithful
And your record is straight and clear;
I have thought of your case many times, Jim,
And of what I could do for you—
I'd be glad of a chance to promote you,
But what other work can you do?

There is work to be done all around, Jim,
That carries more money. And still,
Of all the jobs that surround you,
Is there one you can fill?
True, you've worked many years in the service
And you've never been known to shirk,
But what time have you spent in preparing?
To take up some other man's work.

On the heavy up grade of achievement,
Where the footsteps of others have led,
It's the men who are always preparing
That are constantly forging ahead.
There are places ahead to be filled, Jim.
For those who are playing the game;
But some won't prepare for promotion.
The firm is not always to blame.

—Salesmanship.

HUNTING SPRUCE FOR THE AEROPLANES.

After the United States had entered the great war, Mr. Hollinsworth, master of the High school in a small town in Maine, had his four classes assemble every Friday afternoon and read the news of the week. Boys and girls alike took part in the reading. Afterwards they studied the large maps on the school room walls and talked over what they had read; in that way they gained a good idea of the monmentous events that were happening in Europe.

One winter afternoon there was an unusually enthusiastic discussion of the plans that the government had just announced for building a large fleet of æroplanes. Four of the seniors declared their purpose of going to an aviation school as soon as they were graduated in June.

Mr. Hollinsworth had a small model of an aeroplane, and using it to illustrate his remarks, explained why aeroplanes can fly. Then Clarence Berry read an account of how the frame is built and braced. In the course of the article the writer said that, since lightness and stiffness as well as strength are essential, the wood best adapted for the frame is dry, straight-grained spruce, and that, since Maine is the home of the spruce tree, the supply for the new aeroplanes would perhaps be sought in our eastern forests.

"Well, now, if spruce is what they want, I know where there are some fine big spruce trees!" Ansel Cummings exclaimed. "Behind that old saw mill on Moose Brook, and all round Sheldrake Pond, there's spruce enough to make ten thousand aeroplane wings!"

"That's so!" cried Herbert Cary, one of the sophomores. "That is where we dug spruce gum last fall. Say, tomorrow is Saturday; let's go up there and see how many trees we can find. If we discover good ones, we can write to Washington and tell the aeroplane commission what we have got for them here. We'll be doing something to help."

"Let's do it!" several cried, and Mr. Hollinsworth added, "Good scheme! How many of you have snow shoes?"

All of the members of the Snowshoe Club had them, and four or five others thought they could borrow some. In all twenty-four, including Mr. Hollinsworth, proposed to make the trip.

"But it's eleven miles to that sawmill," Melba Dunn observed. "We girls don't want to walk so far."

"Then we'd better hire Jim Lambourne to carry us all up in the old school barge as far as the sawmill, and wait there to take us home," Billy Elkins proposed.

Every one approved the suggestion; and Mr. Hollinsworth, in a final word of instruction, cautioned every one to be on hand promptly at seven o'clock the next morning, since they would need to make an early start. He also advised every one to bring a good-sized luncheon, for appetites were likely to be sharp.

By the time the young people had gathered the next morning, and had bundled themselves and their snowshoes and lunch baskets into the old barge, half past seven had struck on the town clock. Even then it was no more than light, for the day was bleak and cloudy. But nevertheless the spirits of the young people were high when the barge set off along the country road.

Four miles above the village, the barge entered the forest that with only a few clearings extends up to the sawmill on Moose Brook. There were no houses near the mill. The sawmill itself was now deserted, for two years before a severe freshet had carried away the dam that husbanded the water for the driving wheel.

Since the day was too chilly for the team to stand outdoors after the long drive, Mr. Hollinsworth advised Lambourne to proceed to a settler's clearing, three or four miles farther on, where he could shelter the horses. He was to return to the sawmill at two o'clock.

After some discussion they decided to set their baskets of food inside the old mill and to postpone eating their luncheon until they got back from their tramp. So, putting on their snow shoes they crossed the brook on the ice and climbed the wooded hills beyond.

With the master and the older boys leading the way, and the girls and the younger boys following bravely after, they made fair time. Chill and sombre as the day was they were a merry party, and the silent wintry forest resounded with their shouts and laughter.

In the course of an hour they reached Sheldrake Pond, and at once set to work counting the large spruce trees and measuring their girth with a tape measure. By means of a simle method of triangulation that Mr. Hollinsworth improvised, they determined how long a log, free of branches and knots, could be cut from each tree. For use in building aeroplanes a tree should furnish such a log forty feet long, but they found only ten trees that met those requirements.

Ansel thought that he had seen larger spruces around Club Pond, perhaps two miles away; and accordingly he and the master, with four other boys, set out for that place. The rest of the party stayed behind to dig spruce gum.

Before Mr. Hollinsworth and the boys had reached Club Pond, snow began to fall. With a gusty sigh the wind began to stir the thick tree tops, and fine icy pellets came sifting down. Soon the whole forest assumed a bewildering misty appearance. Deciding that it was unwise to delay, they made a very brief survey of the spruce trees there and then hurried back to Sheldrake Pond. By the time they had found the rest of the party, the storm had increased in violence. Telling the boys and girls to keep together, the master at once started to lead them back toward the mill, but the snow was so thick that they soon went astray. When at last they reached the Moose Brook, they were a mile or more above the mill. It was now after three o'clock, and as they plodded wearily along the brook they looked forward eagerly to the baskets of food that awaited them at the sawmill. But when at last the old building loomed dimly through the driving snow, Mr. Hollinsworth said:

"I think we had better start for home at once. We can eat our luncheon in the barge. It's getting dark already." But to their astonishment and dismay, on emerging in front of the old sawmill, they saw no barge. For some moments they looked round in the fast-gathering dusk, but could discern no trace of it.

"Why, Lambourne ought to have been here more than an hour ago!" Ansel exclaimed.

"Could he have gone on without us?" Herbert Cary suggested.

"No; something may have happened to delay him," Mr. Hollinsworth said. "We'd better wait a while. We'll shelter ourselves in the mill and eat our lunch."

The old sawmill, however, did not offer much protection against the storm. The whole front side was open and the interior was bleak at best. Getting as far back in it as they could, they opened their baskets and hastily devoured the much-needed refreshments. Fortunately, the coffee and the cocoa they had brought in vacuum bottles was still hot.

As they ate they listened eagerly for the jingle of the barge bells; but minute after minute passed, an hour dragged by, and still there was no sign of Lambourne. By that time it was dark and the storm was growing even worse.

"I don't believe he will come," Ansel whispered at last to the master. "Hadn't Herbert and I better start out for home and get teams?"

But Mr. Hollinsworth would not let the two boys start off in the storm and darkness, for there was every chance that they would stray from the road, become bewildered and perish. The temperature was sinking toward zero, and the blasts of wind were icy and cold. He considered setting out for help alone, but decided that he must remain with his charges.

"We must do something," Herbert whispered to the master. "The girls can't spend the night here. They don't complain, but they're shivering. The storm drives in, and it will get awfully cold by midnight."

Meanwhile Billy Elkins, who had been skirmishing about the great pile of slabs and waste at the lower end of the mill, had groped his way round to the back where it stood on wooden piers over the bed of the stream. That side of the building was sheltered from the storm; and, striking matches, Billy peered round underneath. There was a large irregular space under the entire length of the mill, partly filled with great heaps of yellow sawdust. The place was not only sheltered but dry.

"There's a nice, sheltered nook down under here," he cried, hurrying back. "Get hold of me, somebody, and string out a line, one behind another, and I'll pilot you down there."

"All right. Show us the way, Billy."

"Just look round!" Billy cried, striking a match, when they had reached the shelter. "Good, dry spot! Clean sawdust to sit on!"

"And what's to hinder us from having a fire?" Grant Wright suggested. "There are plenty of slabs out there."

Mr. Hollinsworth thought there would be no danger to the mill if they kindled the fire pretty well out in the bed of the brook, and he, with Herbert, Ansel and several others, began to carry down armfulls of slabs. In a few minutes they had kindled a crackling blaze, which shone forth in the storm and lighted up the space far back under the mill.

"My, doesn't that warmth feel good to cold fingers!" Melba exclaimed.

"I am not sure but that we can get through the night here—if the barge doesn't come," Mr. Hollinsworth said as every one gathered round the fire.

The boys continued to bring slabs and soon had built so hot a fire that the whole space beneath the old mill was very perceptibly warmed. Out beyond the ruddy blaze the snow still drove down, but it did not come in upon them. Indeed, the nook under the mill was soon fairly comfortable.

When they had burrowed seats for themselves in the sawdust, they overhauled the lunch baskets again and ate what remained from their hurried repast. Once they heard a noise in front of the mill; and, thinking that perhaps the barge had come, Billy made his way up; but he discovered nothing.

"False alarm," he announced when he returned a few minutes later.

"Do you suppose that Lambourne can have lost his way while coming back here?" Ansel asked; and, indeed, every one felt some anxiety concerning the driver.

Sleep was out of the question. To pass the time Mr. Hollinsworth proposed that every one should tell a story. Several excused themselves, but the rest voted that whoever failed to tell a story should have to carry eight armfuls of slabs for the fire. Several of the boys preferred to carry slabs; but Ada Kimball began the story-telling by relating a laughable incident that had occurred at a Red Cross gathering for knitting army sweaters, a fortnight before. Ansel's turn came next. He was in the midst of an evidently manufactured ghost story, when a sudden interruption occurred.

There was a scramble in the bank of sawdust behind them, and some species of wild animal, scattering sawdust right and left, leaped boldly over Melba's head! Landing in the brook bed, it dashed away before any one had got a clear view of it. All had jumped to their feet, and several of the girls screamed.

"What's that?" every one shouted.

"A bear!" some one exclaimed.

"No, no, it's not large enough for a bear," Mr. Hollinsworth said, to calm the panic.

"I saw rings on its tail," Billy Elkins remarked.

"Probably a raccoon, then," the master said, "hibernating under the bank where those logs are cob-housed up to support the front of the mill. That would be a good place for them. Our fire waked him up."

"At any rate he saved me from finishing my story," Ansel remarked. "I was getting into a hard spot."

He and Grant crept back over the piles of sawdust and peered into the dark corners, but they could see nothing; and after the excitement had subsided, the story-telling began again. It was now Billy's turn, but he had scarcely begun when amidst another shower of sawdust a second raccoon shot forth. This one leaped clean over the fire!

"What a jump!" Grant cried.

"Probably a pair of them were wintering under the bank," the master remarked.

"Well, that lets me off," Billy said. "My thanks to that coon."

The others would not listen to that excuse, and Billy had to resume. Before he had reached his climax, still another coon shot past.

Grant and Herbert Cary then got long strips of slabs and, creeping back over the sawdust, began to prod the holes behind the logs. For some time there was no stir; then suddenly a fourth coon dashed out past them, followed, a moment later, by two more!

The startled girls had run in a group to the lower end of the mill. It was astonishing how regardless of the fire those raccoons seemed to be. One of them, in leaping over it, left a distinct odor of burning hair behind him.

"What a pity to let so many coon skins get by!" Ansel remarked regretfully. "Enough have escaped to make a sixty-dollar coon coat!"

He and Herbert looked around for clubs, with some notion of stopping the next raccoon that came out. But, though the boys continued to prod for a long while, no more appeared.

Eventually the story-telling began again. They went the rounds twice before the first dim light of Sunday morning dawned. On going up in front of the mill the boys found that fully a foot and a half of snow had fallen and that deep drifts blocked the road.

Of course they had long since ceased to look for the barge, and as soon as it had grown light they strapped on their snowshoes and set off for home. For breakfast, every one industriously chewed spruce gum.

They had gone less than four miles when they espied four sleighs plodding laboriously toward them; it proved to be a relief party formed by anxious parents. Climbing into the sleighs, the young spruce hunters reached home without further incident.

Two days passed before the mystery of Lambourne's defection was solved. Then the fact came out. While at the settler's clearing, Lambourne had fallen in with a "bootlegger," as an illicit peddler of intoxicants is called; and as a result, when he should have been at the old mill—and for no less than thirty-six hours afterwards,—he was lying drunk in the barge at the settler's barn.

Mr. Hollinsworth wrote to the authorities at Washington and laid before them the facts that his pupils had gathered about spruce trees in that region. His letter led to the first shipment of spruce for the new air fleet, though later the government got its timber for aeroplanes from the region of Puget Sound.—Youth's Companion.

Predicts Severe Winter Ahead.

The coming winter will be a severe one if the predictions of C. H. Cantner, a Freeland lumberman with a wide reputation in that section as a forecaster, prove correct.

Mr. Cantner bases his predictions on observations of wild life. The wasps he says are building their nests high in the trees, the squirrels are more active this summer than usual, apparently storing up food for a hard winter, and some of the varieties of trees have begun to shed their leaves earlier than usual.

Money-Value of Education.

The United States Bureau of Education some time ago issued a bulletin bearing the title, "The Money-value of Education."

This bulletin contains three figures.

With no schooling at all 31 persons out of five million attained distinction.

With elementary schooling 808 out of three million achieved a like level.

With High school education 1,245 emerged out of a group of two million.

And with college education 5,768 arrived at this point out of a group of one million.

The bulletin also shows that in the New York city bridge department the average salaries for positions demanding only reading, writing and arithmetic are $982, while for positions demanding High school and two or three years of college or technical education the average salary is $2,400.

Another statement is that a large coal and iron company has on its payroll more than 17,000 men, and that of this number 300 receive $3,000 a year or more, and that of these three hundred 286 are college graduates.

Know and believe in yourself and what others think won't disturb you. —Exchange.

——Subscribe for the "Watchman."

USE OF MILK DOUBLED SINCE 1890—NOW 44 GALLONS.

Fourty-four gallons of milk are used by each person in the United States annually. This estimate refers to that which is consumed in the form of whole milk and does not include ice cream, cheese and butter. The amount is about twice as much as that used in 1890, when the per capita consumption was approximately 22 gallons. The dairy specialists point out that the increase in the use of milk in the last 30 years is as great as that in the preceding 280 years.

The present-day consumption of milk in the United States, they say, is equal to about one pint per day, or as much as two small glasses. That is not a great amount when it is known that it includes not only the milk that is used for drinking, but also that used in cooking. This is a small amount compared to the per capita consumption in some European countries. In Sweden and Switzerland, for example, nearly 70 gallons are used by each person annually.

A high value has always been placed on cows in many European countries, and history records a campaign conducted by Julius Caesar in central Europe where he found German tribes living almost exclusively on milk. In order to provide pastures they forcibly resisted the settlement of any people near them.

In relating the growth of the dairy industry in this country, the department specialists say that in pioneer days each family kept its own cow. The denser the population became the more important it was to have a well regulated and ample commercial supply of milk. Gradually the number of cows increased, and in time a dairy business grew up in various sections. The development of modern methods in the distribution of milk, with economic and sanitary handling, has been closely accompanied by the larger use of this food.

Much of the milk now used in cities comes many miles, and recently improved methods have made it possible to ship it for long distances in refrigerator cars. At the National Dairy Show in Chicago in 1919, the milk shipped from the Pacific coast took first prize in the market-milk competition with the highest score given to milk in recent years.

Cities have always used a smaller amount of milk in proportion to the number of people than general farming communities, the statistics show. For example, Philadelphia reached the rate of 23 gallons per capita in 1905, which was 15 years later than the country at large reached a consumption of 22 gallons. There are, however, many agricultural and non-agricultural rural districts where cows are not kept and where modern methods of milk distribution are not equal to most cities. The people in such places have to depend on canned milk of various kinds, and this, the dairymen say, is an exceedingly valuable means of supplying a need which 20 or 30 years ago could not have been supplied at all.

CRYSTALLIZING CORN SUGAR.

Commercial production of a sugar possessing the approximate sweetness of cane sugar, obtainable from a source of low-priced raw material, with the finished product resolving itself into a crystallized form, has been the objective toward which chemists have struggled unceasingly for decades, says Popular Mechanics. Now, thanks to the unremitting research of an Eastern chemist, sugar is being made commercially from corn.

A Baltimore manufacturing establishment, working two shifts of 12 hours each, is producing approximately 70,000 pounds of corn sugar daily, chemically known as "intervose."

The new process involves the production of sugar of a group technically known as ketohexoses, or fruit sugars. The fruit sugars are sweet, the sugar obtained by this process being 80 per cent as sweet as cane sugar, and possessing other favorable qualities. Corn, containing from 65 to 70 per cent. of starch, was selected for its starch-yielding capacity, and by reason of its well-nigh inexhaustible supply and availability. One bushel of corn will yield 46 pounds of invertose.

The method is first to produce an intermediate compound from starch in the material used and then convert this intermediate into fruit sugar by well-known means. The second reaction is effected by any of the well-known methods of reduction, such as hydrogenation, or treating with hydrogen gas, whereupon is formed the fruit sugar or invertose.

Only six hours elapse from the time the ground corn—either cornmeal or flour—is placed in the machine for the formation of the starch until the finished product comes from the evaporators in the form of a syrup to be barreled for shipment. Invertose is not a by-product, but is made directly from whole corn, with no waste, as about 16 pounds of wet mash to every bushel is recovered as cattle food. If sold in crystallized form, two days are required in which to crystallize the product. It is really marketable to confectioners, preserve and fruit packers, ice cream manufacturers, soft-drink bottlers and for use by the restaurant trade.

WHY WE FEAR SNAKES.

If you come upon a small snake during your country rambles, why do you get "that creepy sensation?"

Your fear is probably the survival of a saveage instinct, or, going a step farther back, is inherited from some ancestral monkey. Before man devised that useful weapon, the club, he was mortally afraid of snakes; and monkeys are still afraid of them. If we were to put a snake in the monkey cage at the zoo, the inmates would be terrified out of their lives, for monkeys can not tackle snakes and have never found an effective way of dealing with them.

Sometimes the mere presence of a snake will cause a monkey to drop unconscious.

Similarly, our dislike of spiders is out of all proportion, and is inherited from jungle days. But for this unnatural inheritance, a colonel would not recently have stated that the only fear he had on active service was of spiders entering his tent!

FOR AND ABOUT WOMEN.

DAILY THOUGHT.

That person who tries to do something and fails is infinitely better than he who tries to do nothing and succeeds.—Lloyd Jones.

Pasteurization Keeps Fruit Juice Sweet.—Sweet cider or grape juice can be preserved in a sweet condition indfinitely by the directions furnished by specialists in the bureau of plant industry, United States Department of Agriculture.

As rapidly as the juices are pressed from the fruit place them in clean vessels. Wooden barrels or tubs, which have previously been thoroughly scalded will serve the purpose very well, although earthenware jars, if available, should be used. These are allowed to stand over night, or for not more than 12 to 14 hours, in the coolest location possible so that much of the solid matter suspended in the juice will settle to the bottom. Glass jars or bottles must be thoroughly sterilized to receive the juices, which are drained off without disturbing the sediment.

If fruit jars are used they should be fitted with sterilized caps and rubbers, and the cap tightened down as far as it can be turned. If bottles using crown caps are used, the bottles are capped as they are filled, using caps which have been sterilized. In case bottles closed with corks are used, set the previously sterilized corks in place in the bottles and tie them down loosely with strong cord so that steam may escape. To relieve the pressure during sterilization the bottles should be filled only to the neck.

A wash boiler or other convenient vessel can be prepared for a "water bath" by fitting it with a wooden rack on which the containers filled with juice as above indicated, are placed. The bath is filled with cold water and the bottles or jars, if closed, are inverted or laid on one side so as to wet the inside of the caps thoroughly with juice. If bottles closed with corks are used, the bottles must stand upright in the water, which should come up to the necks of the bottles.

The heating is then started. A thermometer is hung so that it will dip for half its length into the water. which is heated gradually until its temperature reaches 175 degrees F. Allow the bottles or jars to remain in the water for 30 minutes if quart or half-gallon jars are used, and from 40 to 45 minutes if gallon bottles are used. If corked bottles are used, drive the corks firmly into the necks; invert each bottle so as to wet the cork thoroughly with the hot juice; then complete the sealing by cutting the cork off smoothly and pouring hot paraffin over it.

Place the product in a dark, cool, storage room. Watch it for a period of a week or more for the beginning of fermentation, which will be indicated by frothing at the surface of the liquid. If any bottles show signs of fermenting, return them to the wash boiler and repeat the process exactly as before, loosening the tops, of course, before heating begins, and closing down firmly again before the liquid is allowed to cool.

When the juice is placed in storage the suspended solid matter will gradually settle out and sediment will accumulate in the bottom and on the sides of the jars. In the course of two or three months at ordinary temperatures, this settling will be completed and the liquid will be fairly clear. It may be used directly from the bottles or drawn off into clean bottles, which should be sterilized before they are filled and which should be corked and pasteurized by heating to 170 degrees F. for the same length of time as in the first pasteurization. If rebottling is necessary or desirable the second heating should never reach the temperature to which the juice was first heated, otherwise the clarification which is secured by settling will be defeated, as a second process of sedimentation will occur. If the temperature be kept at 5 degrees below that reached at the first heating, this result will be avoided.

A reliable thermometer is a necessity for this work, as it is important that the juice be heated to 175 degrees F. in the first heating, in order to destroy the organisms which would otherwise cause fermentation. It is equally important that the juice should not be overheated, as this will give it a cooked taste, which is decidedly unpleasant to many people.

If your salad greens are wilted, put them in cold water to which a tablespoonful of vinegar or lemon juice has been added. Set in a cold place for a couple of hours.

To clean glass globes soak them in warm water and soda, add a few drops of ammonia to the water and wash them with a well-soaked flannel. Rinse in clean, cold water, dry with a soft piece of linen and polish with a newspaper.

Occasionally it happens that a jelly is too stiff or "tough" for the housekeeper to be proud of, for table use. As a confection, cut up in blocks and dipped in the sweet chocolate that comes for the purpose, the unsatisfactory jelly is more than redeemed, suggest home economics specialists of the United States Department of Agriculture. Figs, dates, raisins, nuts, and marshmallows can also be dipped in chocolate to make wholesome confections for children. Sweets of this kind are especially good as surprises in the monotonous school lunch box.

Another quickly made home sweet may be had when berries are in season. Firm berries, such as whole strawberries, blackberries, black raspberries, and also pieces of pineapple, or other fairly firm fruit are excellent when dipped in white icing or fondant, if they may be served within three or four hours. Here is a suggestion for "a little something" to serve with lemonade or grape juice at a club meeting.

Pineapple Sherbet.—One pint can of grated pineapple, one pint of sugar, one and one-half pints of water. Boil sugar and water until sugar is thoroughly dissolved. When cool add grated pineapple and juice of two lemons; freeze fast. When partly frozen add beaten whites of two eggs, mix thoroughly, take out dasher, pack good, and let stand for an hour or more. Freezing fast makes it light.

FARM NOTES.

—Try to have the cows well bedded, not only for the cows' sake but that as much manure can be made as possible.

—All cows do not like the same kind of food, neither will they do as well as they would on some other kind. Study the wants of the animal.

—To do well the cows should be turned dry about six weeks before freshening. This will help the calf, rest the cow and develop the udder.

—Fresh, warm, separated milk is the very best of feed for growing pigs. It is a good supplementary feed for brood sows and in fact is a good feed for hogs of all kinds and ages.

—All hoed crop land for spring grain should be plowed or cultivated in the fall, and all sod land intended for grain should be shallow plowed immediately after the hay has been taken off, worked thoroughly and plowed again in the fall as deeply as the surface productive soil will allow.

—The Missouri Experiment Station has found by investigation that the red mold in silage is due to a lack of moisture. Very often silage is put away too dry. Molds develop in much greater abundance where the silage is only slightly moist. The station does not think that the mold causes death among stock.

—Through the "Farm Calender," State College specialists recently gave several timely warnings of a serious spread of apple scab in Pennsylvania. The evidence of scab is now here, and is the worst attack of the disease ever experienced in the State. Before the summer is over foliage on diseased trees will drop and fruit buds for next year's crop will not set. A thorough application of lime-sulphur spray may yet save many trees.

—An extensive fruit grower uses this method of using lime sulphur with arsenate of lead: In one four-gallon bucket dilute the lime sulphur to be used to that extent, four gallons. Next slake three pounds quicklime and dilute to four gallons. This is poured off into another four gallon bucket containing three pounds of arsenate of lead paste worked down to the consistency of thin cream. These two buckets, the dilute lime-sulphur and arsenate of lead and limewater, are then poured into the spray barrel, running together; the spray barrel to contain a full supply of water. The lime used has a tendency to neutralize the burning effect of the water soluble forms of arsenic.

—Many acres of marsh land could be used for the permanent production of crops by draining and application of the proper fertilizer. Potash and phosphoric acid are the mineral fertlizing elements which give the best returns, while barnyard manure also causes a large crop increase in most cases. Except on distinctly acid deposits, lime does not as a rule give good results. Deposits which are not suited to the direct production of crops may be used to reinforce manure either in composting or as a stable litter. In this way the manurial value of the mulch is increased, while the valuable ingredients of the mixture may be materially enhanced by the addition of the phosphatic material.

—If cows are fed at stated intervals, they will not worry for food until the time for feeding arrives. If it is then given to them in proper quantity, they will eat and lie down, chew the cud and sleep or rest contentedly until time for another feed. First give the grain mixture, and milk the cows while they are eating it. This routine is recommended because, with some cows, the milk comes more freely while they are eating that portion of their ration which has the most relish. Cured roughage should be fed after milking because it fills the air in the barn with dust. Succulent feed, like silage and roots should also be fed after milking, because of the odor that it gives. Feeding twice a day will bring better returns than more frequent and wasteful feeding. Give half the concentrates and half the roughage in the morning, and half in the evening. Cows will soon become accustomed to this routine. In the winter they should be allowed to spend the day in the stall, and for two or three hours about mid-day they should not be disturbed. Turning them out into the yard, or giving them access to a straw stack or field of corn stalks, will cause them to shrink in milk, no matter how much or how well they may be fed in the morning and evening. No more feed should be given them than they will eat up. The mangers should be absolutely clean and free from any feed, during the day and night.

—For Owners of Work Horses.—1. Do not fail to provide clean, warm quarters in which your cows, ewes, and mares can bring forth their young. Navel ill comes from dirt.

2. It is dangerous to expose young stock, especially foals and colts, to spring rain-storms. A day's exposure, if not fatal, may stop a month's growth.

3. It is bad policy to turn the stock to pasture before the grass has well started—bad for the pasture and bad for the stock.

4. When the pasture season begins, turn the stock out at night, instead of in the morning. Then they will feed through the night, and not lie down until the sun has warmed the air and the ground.

5. Get your horses into condition for spring work—the young horses especially. Many a colt has been ruined by being put to hard work without preparation. It is the same with green horses.

6. In warm weather thorough grooming is almost as important as feeding. Without it, dried sweat, dead skin and dirt clog the pores, make the horse uncomfortable, and affect his health.

7. Look out for sore shoulders and backs, especially in plowing. Be sure that your collars fit. A collar too big is as bad as one too small. If the collar rides up, use a martingale, or a girth running from trace to trace, back of the fore legs.

8. When the horses are at work on a warm day, lift up the collars now and then to cool their shoulders, and wipe off the sweat and dirt with a bunch of grass.

9. Wipe off the harness marks on your horses when you stop work at noon and at night, and clean the inside of the harness.