# The modern farmer and busy bee. Vol. 16, No. 3 March, 1905 

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Where did yesterday's sunset go When it faded down the hills so slow, And the gold grew dim, and the purple light,
Like an army with banners, passed from sight?
Will its flush go into the goldenrod, Its thrill to the purple aster's nod, Its crimson fleck the maple bough, And the autumn glory begin from now?
Deeper than flower fields sank the glow Of the silent pageant passing slow. It flushed all night in many a dream, It thrilled in the folding hush of prayer, It glided into a poet's song,
It is setting still in a picture rare, It changed by the miracle none can see To the shifting lights of a symphony, And in resurections of faith and hope The glory died on the shining slope.
For it left its light on the hills and seas That rim a thousand memories.

-W. C. Gannett.

The Tide Rises, the Tide Falls. The tide rises, the tide falls,
The twilight darkens, the curfew calls; Along the sea sands damp and brown The traveler hastens toward the town, And the tide rises, the tide falls.
Darkness settles on roofs and walls, But the sea, the sea in the darkness calls. The little waves, with their soft white hands,
Efface the footprints in the sands, And the tide rises, the tide falls.

The morning breaks; the steeds in their stalls
Stamp and neigh as the hostler calls. The day returns, but nevermore Returns the traveler to the shore,
And the tide rises, the tide falls.
-Longfellow.

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## EDITORIAL.

"Better travel the wrong road that leads to the hilltops of somewhere than to sit idly in the valley of despair."Suggestion.

If any of our readers are in need of a patent lawyer we can put them in the way of getting the services of a first-class one very cheap, if they will write to us.

Word comes from Columbia, Mo., that the peaches are about all killed. They always are killed about this time of the year, but they may be sure enough this time. We will see later on.

What makes the printers of the country write "fakir" when they mean a man who fakes? Fak-ir means a religious fanatic, but fak-er means one who cheats, fakes, or deals in fakes, which, as Kipling says, "is another story."
"The Modern Farmer is certainly a clean, up-to-date farm paper. Its department devoted to bees is worth the price of the paper to me. I think the lessons that are commenced in it this year are certainly going to be interest-

Home Department
ing as well as instructive to beginners like me. I wish The M. F. a prosperous year." A. E. PATTON.

There is always a reaction when men go to the extreme in any special direction, and a reaction is now set in against the great combines of the country, and as things now appear, they will be shortly crippled in their influence, if they are not doomed to destruction. When the people get wide awake it does not take them very long to dispose of these arrogant and irresponsible combinations of capital.

If 18 or 19 per cent of the Iowa corn, according to Prof. Holden, is unfit to plant for seed, is it not reasonable to expect a like condition of things in other states? Can anyone afford to plant seed of that kind? To put it stronger, can you afford to plant seed of any kind without first testing it? It costs money to prepare a soil properly for a corn crop, and no farmer can afford to replant 18 per cent of his crop, even though he should get as good returns from the second planting as the first, which he will not do.

We have some of those gold filled collar buttons, and other valuable pres- ents left yet, and here is the most the soil this season on just a small
liberal offer we ever made. Renew your own subscription, and send us one new subscriber, with 50 cents to pay for the two, and we will send you one of these buttons, and the new subscriber one also. Two or more subscriptions, half of them new, must come at once, in order for either to get these presents. Remember, you cannot buy one of these buttons at your retail store for less than the money you send for the paper, so you get the collar button for nothing. Do this at once, as it is only good until May 1st.

Here is a proposition from the decision of the Supreme Court of the United States with regard to the beef trust, as given in one of our exchanges: "All combinations suppressing competition between independent dealers fall under the prohibition of the Sherman Anti-Trust Act." Is this decision not a little more far-sweeping than it might at first seem? Is not any kind of a combination which attempts to say what one shall pay, or not pay for a product; or sell any kind of a product for, whether it be meat, or its equivalent, labor, contrary to the laws of the land, as set forth in the Sherman Anti-Trust Act? Some of us, we fear, when we are rejoicing over this decision of the Supreme Court, are walking over slippery ground, and very near a precipice. However, let the law have its course. "Ever the right comes uppermost, ever is justice done."

Here is a better offer for those who want a set of solid silver spoons that are first-class in every respect. Send us 20 new subscribers, and $\$ 5.00$ to pay for the same, and we will send you a set of spoons that would be cheap at the price, $\$ 5.00$, and send each new subscriber that you send a gold filled collar button, that cannot be bought at retail anywhere for less than 25 cents. If the new subscriber is a lady and would prefer a shirt waist set, mention that fact, and we will send these instead of the collar button. Remember that none of these goods are snide. They are just what we say, and when they are gone we have no more at any price. We bought them to send to our friends, and we will gladly send them to any one who complies with our conditions as long as they last. This offer will not be good after May 1st, and will never be repeated.

Try the policy of thorough tilling of
patch of corn, and see what the results to use a lister to put in your corn, seed for this patch be the very best will be. Plow reasonably deep when prepare the soil as above before you the soil is in the best possible condition for cultivation, and harrow all you plow each day thoroughly before you leave the field. If the ground is inclined to be cloddy, run a drag over it, and let it lie a few days, and then cross harrow it thoroughly before planting. If not cloddy, give it a second harrowing anyway. If you want
go in the field with your lister. Cultivate the corn shallow as often as possible during the season, and especially as soon as possible after every rain. Keep this up until the corn is too large to cultivate, and see what the result will be. After the corn is up, be sure and not run too deep near the hill, and injure the roots. Let the you can possibly get, and keep a close account of what it costs in money and labor to produce the crop, and then you will be in a position to tell whether thorough cultivation and good seed will pay. Do not about half do it, and then guess at the result, and decide it does not pay. That is not the way to get at the real facts in the case.

## Meetingo.

The annual meeting of the Missouri State Dairy Association, held at Brookfield in February, was of the type that makes for the betterment of the community in which it is held, and of the people who take part in it, as well as those who sit by and only listen. The program had been wisely and carefully prepared, and the chairman, with admirable skill and adroitness, handled and directed every element of which the meeting was composed, holding in check the more impulsive and combustible element when necessary, and at no time did the interest lag, the sessions become dull or listless, or go to the other extreme and break out into personal and useless debate, thus becoming more like a mob of excited men and women than uat of a deliberative body, bent on educating and developing those engaged in the dairy industry.

The people of Brookfield had made liberal donations and generous preparations for the coming of the dairy workers in large numbers, and they were not disappointed in their expectations, neither did they fail in their display of hospitality. The crowd was large, in fact, unusually so, but the citizens of Brookfield proved themselves equal to the emergency, and cared for them with a hearty generosity, which made every one present feel that it was good to be there. It is hard to estimate the value of such a meeting to the community in which it is held, to the people who attend, to the dairy interests of the state and nation, for the influences of such meetings do not stop at state lines. Where a program is as varied, and as well executed as this one was, it is very hard to know what to mention and what to leave out, where one is limited in space as we are.

We had a minimum of useless twadle and verbiage, as the chairman showed a happy faculty of suppressing such things, and a maximum of good, wholesome discussion, and of practical information for the dairy-

## An Interesting $\mathbb{D}$ airy

By THE EDITOR.

man and home builder. Missouri may not be the greatest dairy state in the union, but she is fast lining up on the road that leads in that direction; she may not have within her borders the very best dairy talent in the land, but she is rapidly climbing up the ladder toward the top, and until she reaches the goal, she knows how to find some of the best there is in other states. She had some of them at Brookfield, thanks to the enthusiastic and farseeing gentlemen who got up the program. If a rich harvest of higher aims and better products is not brought forth from the seed sown at that meeting, it will be due more to the fault of the soil in which the seed fell than to the character of the seed sown, or the manner of sowing. Here are a few points gathered off-hand, which we think will prove helpful, and of special interest to the readers of the Modern Farmer.

Prof. Haecker, of the Minnesota Station, said that the average yield which they received at the Station from the ordinary dairy cow of no special breed was 275 pounds of butter per year. The average yield for Missouri farmers, about 150 pounds. The 125 pounds difference represents proper care, rations, etc. In other words, the proper housing, handling, and feeding of the cows. Advanced dairy methods would seem to have enough to their credit to pay a farmer well to look into them and avail himself of the increased profits, without extra expense, in view of this statement. "Get the best cows you can," said he, "pure breeds, if your fancy runs in that direction, but remember this, if the farmer cannot succeed with a common cow, he cannot succeed with a cow with a more delicate nervous system." Talking of milk, he said, "Farmers will not milk clean," which was set down as one of the causes of failure. Again, "Any discontent decreases the flow of milk.

The farmer should be acquainted with his cows, the cows should like him." He said that they took the calf from the cow, at the Station, as soon as it is dry and has had a good feed, and they do not give it any more to eat for 24 hours. It would drink then without any coaxing. We hardly think we would recommend this plan, as we have not found it any great trouble to teach the calf to drink after it has been with its mother twice a day for three or four days, and becomes strong and vigorous. It seems a little cruel to starve the calf into drinking so early in its life. We will say, however, that it does not pay to leave the calf that is to be reared on the farm with its mother any longer than two or three days. "Every cow," said Prof. Haecker, "should have her own stall." She will be better contented and happier than if she was changed about twice a day. We noticed that in giving a list of rations for cows, all of the speakers from other states seemed to leave out alfalfa, and recommend bran, cotton seed meal, and oil cake, but no Missouri farmer, nor any other farmer, for that matter, can afford to feed bran at $\$ 20$ per ton, to say nothing about the higher priced oil cake, and ignore alfalfa at from $\$ 11$ to $\$ 12$ per ton. At $\$ 20$ per ton, good alfalfa would be a stand off with bran, and for some reasons we would prefer properly cured alfalfa, even at that price. Alfalfa, beyond a doubt, is the greatest forage plant known to man for dairy cows, and every farmer in the land should do his best to get a field of it started on his farm.

Prof. Haecker's definition of a dairy cow was a very good one. "A dairy cow," said he, "is a cow that is a large feeder, and does not convert feed into fat, but into milk." It does not pay to milk cows that are only fit for beef. They had better be fattened and sent to the butcher's block at once. He said half of the calves were killed by over feeding. This is, no doubt, true in the hands of careless dairymen, but
in a state of nature the calf nurses at acre, and sell it for 35 or 40 cents on the windy side of the room where its pleasure, and does not over feed. The rule for young animals in a natural state is little and often, and we think this a good rule for the calves during the first few days of their lives on earth. He made another statement that seemed rather startling, in view of the prevailing theories, and the teachings of agricultural schools and papers. "It is a question," said he, "whether there is anything in the theories of formation," by which he meant, we suppose, that the final test for a dairy cow, as well as all other things is, is she "able to deliver the goods?" You need not discard a good performer, even though she does not have all of the ear marks of prevailing dairy theories. He also said that dairy cows will produce as cheap meat as any of the beef breeds, if bred to beef males, which sounds like more heresy. "To maintain a dairy herd," saiu he, "breed to the best dairy sire you can find."
H. B. Gurler, the great Illinois dairy expert, in discussing the conditions of successful dairying, strange to say, placed first the man or woman in charge of the dairy. "Proper care in handling," said he, "was at the very foundation." This proposition is, no doubt, correct. A poor dairyman $n$ r woman is responsible for failure about as often as a poor cow, so that it is necessary to learn modern dairy methods, if you want to keep cows profitably. "I am staggered," said he, "many a time by the little thought that is put into our work." Here is where the man or woman comes in; thought moves the world, and the absence of thought means an empty milk pail. This is an age of thinkers, and it is just as impossible to run a dairy successfully without thinking as it is to run a government without thought or money. He said, "There are as many opportunities on the farm as in any of the professions." These opportunities are not confined to men alone. "Some women in Illinois," said he, "are managing dairies successfully."

Next after the man or woman he placed the cow, and "every one present, no doubt," said he, "is familiar with the points of a good dairy cow." In urging the interests of dairying, he said that we must change our methods of farming on land worth $\$ 125$ per acre, which is no doubt true, as no one can afford to grow timothy hay on such land and sell it for $\$ 6$ or $\$ 7$ per ton, or 35 or 40 bushels of corn per
per bushel, and let the fodder stand in the shock to rot, or spoil by being exposed to the weather. If he does, he will never have a bank account and will hand down to his posterity land that has been robbed of its fertility by bad methods of farming. He said a dairyman should know what it costs him to feed a cow a year. It cost him in Illinois about $\$ 40$ per year. This would hardly pay, if the cow only produced about 150 lbs . of butter per year. He gets 12 cents per quart and 7 cents per pint for his milk in Chicago.
In speaking of water for cows, he said, "I have more faith in warm water than most people. It should be about 70 degrees, and the cow should have all she will drink." His cows stand in stalls about 3 to $31 / 2$ feet wide, owing to the cow, with cement floors, and movable fronts, so as to make all of the dropping fall in the ditch behind the cow. He uses sawdust for bedding, and Prof. Haecker remarked that they used sawdust, and over it a covering of burlap, at the Station, that it cost but very little more. This was a novel idea, and Mr. Gurler called it a "feather bed for the cow to stand on." He said oats ground at 40 cents per bushel is as cheap as bran at $\$ 12$ per ton. If this is so, it will pay the dairyman in many sections of the country to feed ground oats instead of bran, which is costing $\$ 20$ per ton in this city at the present time.

Some one asked the question if blue grass was as good for pasture as clover, and Mr. Gurler said yes, at which. our chairman, and other Missouri dairymen, cheered lustily, but we could not keep from thinking about our theories of dry matter, protein, nitrogen, free extracts, etc., even if we were glad to have our Missouri blue grass get a boost at the hands of Illinois. The truth of the matter is that clover pasture has more than four times the amount of stuff that makes milk in it than blue grass has. Blue grass is probably the best grass there is for pasture, but it does not compare with any of the clovers.

Palatability must never be lost sight of in feeding the dairy cow. The ration may be properly balanced, but if it is not palatable, if it is not relished by the cow, it will not produce the best results. Another point which he emphasized was the proper care of the milk. He said, "But few people realize how quickly milk will absorb odors from a filthy barn, or even a hog pen
it is left exposed, even though the pen is quite a distance away." Gentleness, he said, was very important in handling cows. Undue excitement poisons the milk. "I know that the cow's milk," said he, "is not fit to feed a baby when the cow is abused." Is it not possible, if this is true, that many times when the baby is taken away, by an "act of Divine Providence," according to the preacher, that the real truth is that the father, or the hired man, unconsciously killed it by abusing the family cow, on whose milk it depended for nourishment? This is worth thinking about, to say the least. "Make a cow happy," said Mr. Gurler, "or she will pay you back," and it is possible that the payment may come to us, sometimes, in ways of which we hardly dream.

His milk is all sealed and dated before it leaves the farm, so the customer knows exactly what aged milk he is getting, and whether it has been tampered with or not. He puts the morning's milk in pints, and the night's milk in quarts, so that each one buying milk will be able to get the freshest milk, if he prefers it.

He emphasized another point, which is rarely thought much about, the "vitality of the cow." Milk is valuable as a food in proportion to the vital energy of the cow. The milk of the cow which is not properly nourished, and hence lacking in vital energy, is not fit for food. More should be made of this point by dairymen. "The nearer we can get to nature in feeding babies, and calves, the better it will be," said he. Another point which is frequently overlooked, especially by farmers, is that cows need as much light as people, or vegetables, and should not be kept in dark and poorly ventilated stables. "Pure milk does not have any unpleasant odor. It is the filth in the milk which gives it the odor." It would seem that the average farmer, and his family, will soon get their peck of dirt, where filthy cows are found, and filthy methods of milking are practiced. There is not much nourishment for a human in this filth, to say the least. Clean cows, clean udders, clean quarters, and clean milkers, bring to the table clean milk, free from objectionable odors. In speaking of milking he said, "Some people cannot milk if they try, but most of them will not try." He gives prizes to his men, amounting to $\$ 75$ per year, to stimulate them to exercise greater care, and work for best re-
sults. To show the possibilities of the probabilities are that it would a dairy cow, he said that he had heifers 2 years old which gave 25 to 30 pounds of milk per day.
There were only two more talks which we heard, as we were forced to leave before the meeting closed, and could not be there at the opening. They were both so brim full of meaty points that it would be impossible for us to give a condensed statement of them. We refer to the address of $A$. J. Glover, Assistant Editor of Hoard's Dairyman, who is one of the most practical, wide-awake, pointed and cleancut speakers it has been our pleasure to hear in a long time, and the lecture of Mrs. Nellie Kedzie Jones, now of Kalamazoo, Michigan. Mrs. Jones is intensely practical, and is as eloquent and enthusiastic as she is practical. We could only wish that every home builder in the land might hear her eloquent plea far a practical education for the girls who are to be the future wives and mothers of the land. Mrs. Jones has a world of magnetic power and enthusiasm, and should be in the harness most of the time, preaching the gospel of better living, and clearer thinking to the young men and women of the country.
There is always a sprinkle of over zealous enthusiasm at every meeting of this kind, no difference what line of work it represents, and strange to say, it often comes from those who are sucking the public udder, so to speak. It is very hard for some men to hold a public office, and draw more salary than they have ever been able to earn before, without coming to think they are "it," and such men are very apt to become over zealous and impractical. Two such gentlemen were at the dairy meeting, both of them connected in some way with the milk inspecting department at St. Louis, we think. One of them was quite sure we were in need of a law to prevent the sale of skimmed milk, and he volunteered the information that he intended to recommend the passage of such a law. Whether his recommendation will go very far with the lawmakers or not, we do not know, but it is to be hoped that it will not in this case. Just as though skimmed milk was not a natural, healthy food, product! Whoever heard of a law to suppress the sale of a healthy food product, absolutely free from any form of adulteration, or deception, of any kind, when it is sold under its own proper name? Such a law might last until it got to the Supreme Court, but
never get past any second rate magistrate, who is not a fit subject for the foolkiller, or who knows less about the fundamental principles of law than a turkey does about full cream cheese. The other gentleman also has a public job, and is, no doubt, hot on the track of another one. He was circulating a petition to the legislature to create the office of Dairy Commissioner. When the editor of the Modern Farmer exercised his God-given right to refuse to sign the petition, automatically, for a thing he does not believe in, this custodian of the public weal got up on a high horse and pawed the air, and snorted like a wild bull who had just discovered a red rag. Why? Simply because the Modern Farmer does not believe in separate pure food laws, or commissioners, for every industry in the state, but believes in one pure food law to cover every food and medicine in the state. Said law should be executed by the State Board of Agriculture, a body now in existence and thoroughly organized. This board should be empowered to appoint such experts to look after each individual industry as the circumstances of the case may demand. This will tend to keep food legislation out of politics, and out of the hands of people who are only interested in the development of one industry. We further think that each properly organized industry in the state should have voted to it, to be distributed by the Board of Agriculture, when proper conditions and requirements are complied with, a sum of money not to exceed $\$ 1,000$ per year, to help defray the expense of its annual meetings, publish a printed report of its proceedings, with a list of its annual members, and such other literature as will tend to build up the industry. Every organization of this kind receiving any support from the state should be under the direct supervision of the State Board of Agriculture, and should be expected to give a full and complete report of all of its doings, members, etc., to this board every year. 'ine State Board of Agriculture should have power so that any man who is guilty of selling any food or medicine under a false brand, or who adulterates, or lessens the value in any way of any food or medicine, can be arrested by them, tried and sent to the penitentiary, to repent at his leisure. Every man who wants to buy skimmed milk has a right to buy it, and every man who wants to sell
who sells skimmed milk for cream, or whole milk, is a thief and a scoundrel, and should be punished, and punished severely. If this be treason on our part, let the reader make the most of it.

The mercury was down to from 10 to 20 degrees below zero, the wind blew a perfect gale from the northeast, and the air was filled with snow; and yet, we saw on a well kept farm a large herd of cattle out in this storm, with no protection, except that which is furnished by a well eaten stalk field. Was this cruelty to animals? Will that man get the highest possible profit out of that herd of cattle? Is that the best way to farm? What do our readers think of it? Now, do not say, "He asks too may questions, why does he not answer them himself? That is what we take his paper for, to find out things." Is it always the best paper that tells how to do things? A paper that is simply an encyclopedia of recipes, cure-alls, is not always the best paper. There is more information to be gotten out of a paper, or a speaker, that provokes thought, that helps one to think, and reach conclusions for himself, than there is out of one that is simply good and easy reading, or hearing, and only pleases for the time being. Such papers may furnish a kind of help known as enjoyment, but the more solid kind known as instruction will be absent.
"Ours is not a government which recognizes classes. It is based on the recogition of the individual. We are not for the poor man as such, nor for the rich man as such. We are for every man, rich or poor, provided he acts justly and fairly by his fellows, and if he so acts the government must do all it can to see that inasmuch as he does no wrong so he shall suffer no wrong."-President Roosevelt.

These are great and noble words, fitly spoken by a brave man. They take the props from under all sorts of combines. They sap the vital energy of every form of socialism, whether it be the socialism of the unthrifty, shiftless anarchist who parades as a working man, or the socialism of arrogant and irresponsible commercialism. "We are for every man, rich or poor." We are for him, not because he is this or that, not because he belongs to this or that, not because he is related to this or that, but because he is a man, and as such has intrinsic value. Individualism is the center and circumference of a republican form of government, but social-
ism and anarchy are bred and nur- will be on the safe side and say one- around zero, or below, and a fierce tured in an aristocracy, and lie at its fifth. This being true, no man can af- wind was blowing from the northeast. very foundation. Its government is ford to grow a crop of corn and let for the classes, and not for individuals. A man has no value to an aristocrat only as he serves the purposes of the ruling classes. They are frequently a set of tyrants, or helpless imbeciles, who are the tools of those who fawn upon them. May the good Lord hasten the day when these noble sentiments of our worthy President will be the watchword of all those who make our laws.
Here is a proposition that is worth, at least, a moment's thought. A large portion of the value of the corn crop is in the stalks and blades; some say two-fifths, some say one-half, but we
his was not a very good time to draw解 this statement fresh in your mind look were, no doubt, hungry and must be around you and see how your neighbor fed. This was not all. We noticed has cared for his corn crop. How the shocks, and the wind had twisted have you cared for your own corn and blown them apart until there were crop? As we were going out the other only a small portion of the blades left day to meet the Burlington "Soil and with the hard stalks, and these were Seed Special" we were thinking of so weatherbeaten and dry that there this proposition when we looked out was scarcely any nourishment left in of the car and saw two men and a boy them. Do you know of any better way in a field digging out shocks of fodder to handle his fodder, one that would to draw to the barn, or, more likely, really cause him less disagreeable on the snow in some vacant lot or field work, and, perhaps, bring him about to feed the cattle. There was about double the returns that it would in the twenty inches of snow on the ground, way he was then handling it? If you it was then snowing, the mercury stood know tell us how it is done.

## Teaching Agriculture From A Railroad Train.

"The Burlington Soil and Seed Special," which has been traversing the various lines of this modern 20th century railway system during the month of February, in the states of Missouri and Iowa, while not an absolutely new thing under the sun, was, to say the least, unique. It was conducted along lines, and in a manner, which did credit to its originators as well as those who were in immediate charge of the train.
The Burlington officials made no mistake when they put the management of this train in the hands of their Industrial Agent, Mr. Manss. He demonstrated that he was thoroughly equipped for the work in hand, courteous, genial, enthusiastic, and a pusher withal, doing everything neatly, promptly and with an intelligence that always invites success. The speakers on the train liked him, the people liked him, the newspaper men liked him, and his employers ought to like him, for he carries with him the best possible evidence of success, viz., the ability to "deliver the goods."

But what of the train itself; what does it all mean, and why all this great trouble and expense on the part of the Burlington? One man said to the writer, "There is some kind of a money making scheme back of this." There was nothing of the kind, or, at least, not in the way he meant. You have heard of the story of Mahomet, when he commanded the mountain to come to him, and it would not move, and he then said, "Well, Mahomet will go to the mountain," and he went. All men cannot attend agricultural schools, and some of them will not attend a farmers' institute. These "specials"

## EDITORIAL WRITEUP.

are an attempt to carry a miniature agricultural college, and a farmers' institute combined, to such men at their very door, as it were. But, says some one, who is inclined to be over-critical, we think, "What can a man learn about agriculture by listening to a college professor talk from a railroad car for 30 or 40 minutes?" Not much, we grant you, and yet he may learn that which will prove of untold advantage to him; he can learn, if nothing else, that there are better methods of doing things, that others are following these methods, and are reaping a greater harvest, with less effort, than he is, and that all that he lacks is the proper information to enable him to do the same thing. The literature distributed on the train tells him where he can get this information, and all he has to do is to carry out his part of the program, and the chain will be complete.

The reader has been thinking, no doubt, more or less about the cost of all this, and wondering who "pays the freight." Well, it is this way. Through land grants, government aid, etc., the taxes we all pay, etc., the states have made agricultural schools possible, and these schools hire trained and educated men along agricultural lines by the year, and in order to help the farmers, and advertise their schools, they are willing to have these professors go out and talk to the people, if transportation, etc., is furnished. This does not increase the farmer's taxes any, nor does it give the professor any more pay. At this point, the Burlington steps in, and says, "We will furnish the cars, provide for these men, and carry them over our line,
making the necessary stops, and do it all free." Why should they do this, if there is no money in it for "the Burlington?" There is money in it, and big money in the end. One illustration will make this clear. By careful selection, and proper preparation of the soil, and cultivation, the corn and wheat crops of Missouri, or any other state, can be nearly doubled. Do you know what this means? It means not only more money in the hands of the farmer, but it means more work for the railroads. This, of course, means money, and money, too, without costing the farmer any more for freight, as quantity and regularity of work always cheapens rather than increases the cost of transportation. Then, there is another way in which the railroads will be benefited. Publicity is just as valuable to the railroad, and brings increased patronage in this business the same as it does in any other business, and there is nothing that the railroads could do that would bring them nearer to the farmers, or advertise them better, than these corn "specials."

Then we are bound to admit that all corporations are not absolutely selfish. There are large hearted, public spirited men in the railroad business, as well as elsewhere, and they take pride in helping to build up the country, and promote the general interest of the state and nation. There is an indirect benefit growing out of this that is very likely to be overlooked. It brings the railroad nearer to the farmer, and permits them to get better acquainted. On general principles the farmer is liable to look upon the railroad as his enemy, and many agri-
cultural papers, we are sorry to say, Therefore, he will not expect, or at do all they can to encourage them in this belief. This is a serious mistake, the farmer has no better friend than the properly conducted railroad. It brings a market to his very door, annihilates space between him and his friends, cuts off the loneliness and isolation of farm life, and its coming always increases the cash value of every foot of land he owns.

These special trains tend to personify a railroad, make it a personality, figuratively speaking, with which the farmer can become better acquainted, and out of this acquaintance a better understanding of each other, which is sure to create a friendship which will prove beneficial will come. In this way, the "Seed and Soil Specials" are helping the railroads, and doing the farmers more good than they can possibly realize at the present time. We might say, in conclusion, that the crowds were large, notwithstanding the weather was severely cold, and it was very disagreeable to be out. The best of attention was given the speakers, and at some stations great enthusiasm prevailed. It is to be hoped that the time is not far distant when such trains will be run on every railroad in the land, as they cannot fail to result in good to the country at large.

Find something you can do, and do it well, and then keep doing it. Do it now, keep doing it. You may not seem to meet with much success, but you are just the same if you are doing anything that really needs to be done, anything that helps you and helps humanity; anything that satisfies real human desires meets human needs, and makes for the physical and spiritual betterment of the world. You need not bother your head about what others think of your work; results are what you are after, and these are bound to tell in time. Above everything, let your work have your own approbation, for, if a man does not believe in himself and his own work, how can he reasonably expect others to do so? Do not be afraid to express your thought, if you really do think. The world may kill the thinkers of one age, but it is almost sure to deify them in the next, all of which goes to show that right thinking is what tells in the end. It is thought that sets things in motion in the world. Do not be afaid to launch out into new lines; father is, no doubt, a good man, and may be smart, and he probably knows some things which his father did not know.
least should not expect, to gauge your knowledge by his. You are expected to know more about some things than he does, for the simple reason that you have better opportunities to learn things than he ever had.

We want good articles for every department of the paper. We want them short and written to the point. We want articles that tell how to do things; articles that will really help the people who read them. We do not want articles that advertise somebody's face powder, soap, or something of that kind. All such articles will go to the waste basket. When The Modern Farmer first started we had some such artcles in the home department. The women or men who wrote them worked us for that much free advertising for somebody's wares. We do not know whether they were paid for it or not, but we do know that no more such articles will be published in The Modern Farmer. Every one who sends us a good article for publication within the next sixty days will receive a valuable present of some kind, and we will gauge the value of the present by the value of the article. Now, do not say that you cannot write articles. If you know anything that you think other people ought to know, and that would help them in their work in life, put it down in the best language you can, and we will do the rest. Write as plain as you can on one side of the paper, and leave plenty of space between the lines. Be sure you write all proper names so there can be no mistake about them. Address your article to the editor of The Modern Farmer, and we will take care of it in due time. If you receive a present of any kind in the mails you may know that your article will be published when we get around to it. What we would like to do now would be to get some good articles that we can use later in the season, but we can use a few of them in every issue of the paper. If you write a general article do not put local news in it, as this might be out of date before we would get it in the paper. If you have any news of that kind put it in a separate article, and we will use it at once.

Here is the way the Burlington Soil and Seed Special impressed one young man. It was at King City, the cars were crowded, and it was hard to get inside. One young man stood on the platform looking in anxiously, as another one about the same age came out. "How is it?" said the young man
on the outside. The other one responded, "It is dry for me. They are talking about corn, corn, $\mathrm{h}-\mathrm{l}$, I can get all the corn I want at home." Just so, he, no doubt, had plenty of corn at home, but what did he really know about it? He had no idea of studying things which he saw every day. He was looking for information about something he had never seen, information hard for him to understand, and which would really be of no practical utility to him if he did understand it. An ordinary thing like corn had no attraction for him. He was looking for instruction about other climes, about ages gone by, about star dust, Greek roots, and what not-anything but the plain, ordinary every day things like corn. Yet, the proper knowledge of corn meant dollars in his pockets, and mental drill as well. Prof. Holden, of Iowa, tells us that that great state only got about 65 per cent of a perfect stand of corn last year, and that from 18 to 19 per cent of last year's crop will not grow. In view of these statements, is there not something to learn, even about corn? Why should a young man grow up with such ideas? All of the blame, we apprehend, should not rest on him, not by any means! Our system of education is responsible for very many of the erroneous ideas of life. Too much Latin and Greek, too much ancient history, and not enough modern; too much foot ball, and other kinds of ball; too many hair splitting theories about Greek and Latin roots, and too little plain talk about ordinary things like corn roots. Our schools from the lowest to the highest are more responsible for these false ideas of life than was the young man himself. He was born in an atmosphere, which, perforce of circumstances, compelled him to think that an education consisted in doing things that were of no practical utility to him, and that the way to be great and appear learned was to talk about things in distant climes, in the moon, rather than on his father's farm, among the stars, rather than among his father's cattle, sheep, horses or swine; about Vesuvius and Pompeii, rather than corn, turnips, pumpkins, rotation of crops, soil fertility, etc. To the dogs with such ideas! Let us first teach the boys, and giris, too, in the country the how and why of the every day things of life, the things they must do to carry on the work of the farm. The geography, history, botany, entomology, zoology, biology, ornithology, etc., of the hundred and sixty acres on which they live, before we send them to college to learn Greek roots, foot ball, to dance, and the airs of so-called polite society, and then they will not say, "Corn, h-l, I can get plenty of that at home."

## Zbout Books and Periodicals.

By the Editor.
We want this department to be of permanent value to our readers. We, therefore, invite publishers to send us copies of books and periodicals of special interest to farmers. They will receive careful attention in this department.
Always mention The Modern Farmer when writing to publishers about any book or periodical mentioned here.

The March "Cosmopolitan" is a very attractive number of this up-to-date monthly, which is never dull, or lacking in reading matter which makes for the education and betterment of humanity.

The modern home builder will find many a valuable suggestion in the "20th Century Home," for March, as well as a deal of interesting and instructive information on many household subjects. This is a magazine of education for the modern housewife.
"Success" for March, will bring a deal of sunshine, helpful suggestion, and valuable information, into every home where it goes. This is, emphatically, a magazine of encouragement and moral uplift, and as such, ought to be read by every man and woman in the land.

Every young man or woman can not take a college course, but this is no reason why they should not keep abreast of the times, when they can invest a few dollars in a magazine like the "Review of Reviews," a careful reading of which, for a few years, will almost prove equal to a course in college.

Every woman who is anxious to lighten her burden, and learn the best methods of doing things, and at the same time secure for herself a few hours of interesting reading, should purchase a copy of the March number of "Good Housekeeping." See our special offers on this excellent magazine, in connection with Pearson's, on another page.

A man or woman with a mind given to investigating modern thought and ideas, who is looking for the latest word on any scientific subject, will find the "Table of Contents," of the "Popular Science Monthly," for March, a rich field to garner in. This is also a magazine for men and women of action, as well as thought.

We have received the following books for review, which will have proper attention in an early issue of The Modern Farmer as fast as we can reach them: "Successful Fruit Culture," by Maynard; "Farm Grasses," by Spillman; "A B C of Bee Culture," New Edition, by Root; Webster's Standard Dictionary, compiled by E. T. Roe; "14th Biennial Report of Kansas State Board of Agriculture," by Coburn; Part 14 of "Poultry Book," by Weir; "Baby Nuclei," by Swarthmore; "The Country Home," by Powell.

Ine "Garden Magazine" is a new publication, by Doubleday Page \&Dr. Wiley tells the results of the ex-

Bureau of Agriculture. In this article
company that should prove not only interesting, but exceedingly valuable to those who grow gardens, whether it be on a city lot or on a 300 acre farm. It is printed on fine calendered paper, and is elaborately and beautifully illustrated. It sells for 10 cents per copy, or $\$ 1.00$ per year. If you want to see a sample copy mention the Modern Farmer, and address the publishers, New York ${ }^{\circ}$ City, New York. We will club the Modern Farmer and the Garden Magazine, both papers, for a short time for an even dollar.
"Suggestion" is a journal of the New Psychology of health, happiness, and success; it teaches how to apply the great basic Law of Suggestion in the everyday affairs of life through autosuggestion. How shall I succeed in life? "Suggestion" is the publication that points the way. It shows why some fail and why some succeed; the teachings of "Suggestion." if followed consistently, will turn sickness into health, despondency into cheerfulness and failure into brilliant success.

One of the attractive things about "Everybody's Magazine" is its unique and original covers. Every month brings a new surprise in this direction, but the cover is only a hint of the interesting and sometimes startling matter which is found within. Lawson is still hammering at the trusts, and Russell continues his warfare on the meat combine. One would have to look for some time to find where he could get more for his money than by investiing a dollar in "Everybody's" for one year.

The March "Home Companion," published at Springfield, Ohio, has so many valuable articles in it that it is hard to select any one that is more worthy of mention than another. We will say, however, that the article entitled, "The Truth About Food Adulteration," by Irving Dodge, should be read and pondered by every man and woman who believes in a "fair deal for everybody." We are making some very liberal clubbing offers in connection with this beautiful home magazine, and our lady readers should take advantage of them before they are withdrawn. We are sure they would do this if they realized how liberal these offers are.

Aside from its usual assortment of bright short stories, the March number of Pearson's Magazine includes eight special articles, four of which are particularly timely. The most important of these is "The Poisons We Eat in Foods," by Dr. H. W. Wiley, Chief of the Department of Chemistry, U. S.
periments carried on up to date with his famous volunteer "poison squad." "Galveston, the City Reclaimed," tells of the wonderful engineering feat wnich in four brief years has enabled the flood-ridden city to rise from wreck and ruin to a model town of beauty and municipal reform. Kate Saint Maur's "Self-Supporting Home," Elmer Porter's "Side Shows of Modern Businesses," Augustus Lerrok's "How a Big Newspaper is Conducted," and a profusely illustrated account of the "Footprints of Beasts" complete the special articles.

Read our special offer on this magazine on another page.

The "personal equation" is strong in the March number of The Booklovers Magazine. A large proportion of the articles deal with striking personalities in varied and interesting ways, partly biographical, partly critical, and by means of the interview. All of them are fully illustrated. Among the most notable articles of this stamp is "Religion in the Novel," by Hall Caine. Joseph M. Rogers' article on "Henry Watterson" is a most charming characterter sketch of a peculiar and fascinating figure in our politico-literary world. The interview with Dr. Doyen, the cancer expert of Paris, by Frederic Lees, will be read with the greatest interest as the first authoritative statement made for publication by the great specialist who claims to have discovered the specific bacillus of cancer and the specific cure of that dread disease by means of vaccination.

The illustrations of this excellent magazine are simply superb.
"First Lessons in The New Thought," or "The Way to the Ideal Life," by J. W. Winkley, M. D., James West \& Co., Publishers, Boston, Mass. Price, cloth, 60 cents, post paid; Paper covers, 30 cents.
Every age has its tendencies, and the pendulum of human thought tends to sweep back and forth along special lines. A few years ago the whole tendency was to study things from the standpoint of matter. Almost every man and woman, almost every boy and girl you met had something to say about the evolution of things. All had been evolved, and was evolving along material lines. The material forces had worked, were working, we were told, toward certain material ends. Everything was in the grip of law, and law was working exclusively through matter. The earth was evolved out of matter, animals were evolved matter, man was only a higher grade of evolved matter, perhaps, but matter all the same. If anything was out of joint, something was the matter with matter, and the way to right, or cure the ills, if you please, was to apply material agencies purely, so man sought out all sorts of combinations of matter, and began to apply them internally and externally, and, some people almost eternally, to cure the ills of man and beast, both of which when reduced to their final analysis ended in matter. Our medicine was material, we were material, our religion was
material, our ills were material, and,
of course, they demanded material remedies. This went on until it came to pass that more people were being injured by this intensely material procedure than from all other causes combined.

Within a few years, however, there has sprung up all over the land a reaction against this materialistic theory of things. Where it came from no one can say, but it is here, and evidently here to stay a long time, to say the least. It is known by various names, and manifests itself in various ways, but the cardinal doctrine of this new uprising of wonderful power is that mind and not matter is the master of the situation; that while there is matter in the universe, beyond a question, there is also spirit, and mobility resides in spirit rather than in matter. Thought is at the center of the universe, and moves and shapes the matter out of which it has built for itself a temporary home; the real man, the thinker, is spirit and not matter, and is, therefore, greater and stronger than the clay house in which he now abides. This idea, or these ideas, modified and expressed, as seen from the view-point of the thinker is called "New Thought." It is the fundamental
principles, expressed in the simplest in buttered tins one hour in a moderlanguage possible, of this so-called "New Thought," which this book proposes to teach, and we heartilly wish every reader of the Modern Farmer might become one of its pupils. It is not a large book, only 77 pages, and in large print, but it has helpful information enough in it to make it worth as much as a book of 500 pages. It does not attempt to teach isms. It is not written in the interest of any church, sect, or creed, and does not propose to teach even religion, but it is religion in its true sense, the binding of the soul back to its Maker, the binding of the thinker, man, back to the Eternal Thinker, out of which he sprung, and to which he bears an everlasting kinship. You can carry this little book in your pocket. It costs only a trifle, and we wish that every one of our readers might secure a copy, and read it through, at least once a month during the year. If, at the end of the year, you can honestly say that it has not been of any help to you in any way, mail it to us with the statement that you have read it through twelve times without it doing you any good, and we will send you the amount you paid for it, and do it willingly.
ate oven.
"Bread Cake-Enough light dough for a loaf, one cupful of sugar, onehalf cupful of butter, nutmeg, raisins and spices."

## WHAT LEMONS WILL DO.

No family should be without lemons. Their uses are almost too many for enumeration. The juice of a lemon in hot water, on awakening in the morning, is an excellent liver corrective. Glycerine and lemon juice, half and half, on a bit of absorbent cotton, is the best thing in the world wherewith to moisten the lips and tongue of a fever-parched patient. A dash of lemon juice in plain water is an excellent tooth wash. It not only removes tartar, but sweetens the breath. A teaspoonful of the juice in a small cup of black coffee will almost certainly relieve a billious headache. The finest of manicure acids is made by putting a teaspoonful of lemon juice in a cupful of warm water. This removes most stains from the fingers and nails, and loosens the cuticle more satisfactorily than can be done by the use of a sharp instrument. Lemon juice and salt will remove rust stains from linen without injury to the fabric. Wet the stain with the mixture and

## THE FARMER'S HOME. <br> EMMA INGOLDSBY ABBOTT, Editor A happy and prosperous home means a happy and prosperous country.

## The Hills of Desire.

Last night I saw them in a dream And marveled till the mornThe purple hills, the sunlit hills, The hills where I was born.
Those gentle slopes I shall not climb, Though long I may aspire;
Still will they gleam in each fond dream,
The hills of far desire.
-James Ow :n Tryon.
It is very unwise to rush into housecleaning with the first warm days of spring. Colds, pneumonia and rheumatism follow in the wake of exposures that are unavoidable when such work is going on.

A delicious filling for a layer cake can be made with maple syrup. Boil one cup of syrup until it threads and pour it slowly over the stiffly beaten white of an egg, beating the egg meanwhile, and continue beating until the mixture is thick. For a variety, half a cup of nut meats may be added.

A simple and wholesome candy for children is made with two cups of granulated sugar and one-half cup of water. Boil without stirring just five minutes after it begins to boil; then remove from the fire and stir until it begins to grain; pour into a greased tin and when cool enough mark off into squares. This can be flavored with peppermint or any other flavoring, if desired.

Cold, baked potatoes can be utilized ${ }^{*}$ by cutting in two, scraping out the in-
sides, mashing and seasoning with salt, pepper, butter and a very little milk or cream. Heat and refill the skins, stand them up on end and bake until the tops are browned.

Convenient kitchen holders may be made of bed ticking. Any odd pieces will do for this. A strip 15 inches long and half as wide can be used many times where a small quilted holder would not work, and they are easily laundered.

A great labor saver in washing windows is the wiper with a rubber edge, such as are used to clean the large plate glass windows of city stores. With a dry cloth to wipe off the rubber strip every time it is brought down the length of the pane it will dry the window in a fraction of the time it takes to rub it dry with a cloth. And these are inexpensive.
When eggs are scarce and high, it is well for the housewife to have a few recipes for cakes that may be made without eggs. The two below are given by Mrs. J. P. S. in the Drover's Journal:
"Cakes Without Eggs-Beat together a teacupful of butter and three teacupfuls of sugar; when quite light stir in a pint of sifted flour. Add to this one pound of seeded raisins, chopped then mixed with a cupful of sifted flour, one teaspoonful of powdered nutmeg, and lastly a pint of thick sour cream or milk in which a teaspoonful of soda has been dissolved. Bake immediately
put the article in the sun. Two or three applications may be necessary if the stain is of long standing, but the remedy never fails. Lemon juice (outward application) will allay the irritation caused by the bites of gnats and flies.-Fuel.

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## THE FARM IN GENERAL

E. J. WATERSTRIPE, Editor.

The bad snow storm which prevailed over the country in February almost makes us wish that we were in a warmer climate, but then we know that we have a good country, and where it is warmer there is liable to be other drawbacks.

The worst of the bad weather is that lots of stock is not half provided with sufficient shelter. When a man has everything under shelter, the bad weather is not half as bad to him. Every farmer should see that his stock is protected during this kind of weather, for if not protected they will lose and it takes the best of care to make them gain during this kind of weather.

The "Seed and Soil Special" passed through here a few days ago and the two cars were filled with farmers who listened to a 40 minute lecture on the most important of all crops-corn. All enjoyed the talk, and I heard many say that the only thing they did not like about it was that it did not last long enough.

The time for sowing oats is near upon us, and this important crop must not be neglected. While there may be other crops which will produce more, there is no other grain so good for horses. We want good feed for horses. The horse which is worked hard every day needs the best, and if it can be had, it should be given. I have been feeding sheaf oats to my horses all winter and intend to have them to feed every winter. Do not by any means neglect the oats crop.

Study the seed catalogues and plan to have a good garden this year. Have your seed on hand early, and avoid the rush of the seed houses later in the spring. With a good garden the housewife has less trouble in preparing a meal, and with plenty of vegetables you will have a healthier diet. Spend a little more time in the garden, and enjoy some of the benefits of it. The small garden pays better than any other acre on the farm. The garden and the poultry are too often neglected.

The horses in winter need to have daily exercise. It is not good for a torse to stand tied with a halter all winter. How would your health be if all you did was to sit in a chair day after day with no exercise whatever? In what condition would the muscles be for work in the spring? Horses should be turned into a lot for exercise daily, except in stormy days. The country would have better horses if daily exercise were given, and it should be remembered that a horse's grain should be less when idle. If the horse is fed a full grain ration when idle without exercise the system becomes
overloaded, and many times this causes serious trouble. The horse enjoys moderate exercise in winter, and feels much better for it. There is far too much carelessness practiced in keeping horses. Better care on every hand will give better horses.


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## BEEKEEPING ON THE FARM.

BY THE EDITOR

We notice in the Australian Bee- crowded out by another B, beer. Then keeper that the hot wave which swept over Australia about the first of the year reached 120 degress, and that many colonies of bees were destroyed by this excessive hot weather. It is very hard for us frozen mortals in this locality to realize that any such condition of things should exist any place on the earth at the same time we were most freezing to death.

Queen excluding honey boards are not necessary in the production of comb honey. The queen will not often go above, if she has plenty of room, and the honey board obstructs the bees. There is not enough benefit derived from it to make up for this, and the extra expense, and, therefore, we do not advise its use. This in answer to a number of beginners.

Mr. Green, in his bee notes in Gleanings, complains of the frames, Hoffman, being crowded up against the side of the hive, and rightly, too. If friend Green will get a "St. Joe" Hive, he will not have any further trouble of this kind. St. Joe frames are spaced accurately, and are the same distance from the side of the hive that they are from each other. This is the way frames should be in every beehive.

One of our readers says that his bees fly out in the snow when the weather warms up, and die. This should be guarded against, whenever there is snow on the ground, and every hive of bees that is left to winter outside, should have the entrance shaded, and it would be better if a store box was turned over the entire hive. This will not only shade the entrance, and keep the bees in, but will protect them against sudden changes. We have mentioned this several times, but want to emphasize it again.

In the bill, appropriating $\$ 6,204,710$ for the promotion of Agriculture in the United States, there is an item of a million and a half for the Bureau of Animal Industry, including an amount to prevent the spread of pluro-pneumonia, black-leg, tuberculosis, sheep scab, glanders, hog cholera, etc. Where is the committee on legislation of the National Beekeepers' Association that they are not making an effort to have foul brood among the bees included in this list of diseases? If the National Association was alive and awake to its opportunities, we could secure this, as well as not. Why not foul brood as well as scab among sheep? Does not the honey industry of the United States stand for anything? It did not stand for much at the St. Louis Exposition, but it should at Washington. The man's name in charge of Agriculture there is not Taylor. Bees are likely not to be
crowded out by another B, beer. Then
let wake up and do something along this line.

Dr. Miller, in speaking of the National Association, suggested that the money of the Association could be spent in better ways than in law suits. The Doctor is just right. There is too much other work that needs to be done just now to spend very much lawing. Generally speaking, the only men who profit by a law suit are the lawyers, and this is especially true of any association like the National. Let us advertise honey, get out those circulars voted on at the St. Louis meeting, get protection for the beekeepers against foul brood, against spraying in bloom, and a world of other things which need to be done at once. While we are doing this, let us get some business sense into the management of our annual elections, so that there will not be so many hold-over officers, some of whom never did get votes enough

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GUS DITTMER, AUGUSTA, wis.
to elect them. The editor of the Mod- Section 6, Article 5, makes it one of ern Farmer remembers what a row was stirred up when he was elected General Manager by nine votes out of twelve. Some who were prominent in the affairs of the National persistently insisted that this should be done over, and it seems to us that a little doing over would be a good thing for some of our late elections. It would also be a good thing if the directors would let the members of the Association know what they are doing. General Manager France, in a private letter, says that according to the by-laws, the Secretary shall count the election ballots. Now, what we would like to know is, who made these by-laws, and when were they made? If any report of them has ever been given to the membership, we have not seen it. the constitution.

## Lessons For the Beginner in Beekeepingo No. 3.

We have come now to some of the most interesting things in the make-up of the honey bee, things about which there has been a good deal of discussion, and an equal amount of disagreement. We were discussing the bee's head when we closed our last lesson, and had noticed some of its external organs, and we will spend a short time now on the organs located inside of it. One of the most important of these is the brain ganglia, which we may call the central brain, for while the bee has brain centers capable of originating motion in other parts of its body, yet the center of intelligence, if we are permitted to call it that, is located in its head. Contrary to the general idea, a careful examination of this brain center indicates that the workers have more intelligence than either the queen or drones. This, however, is in full accord with the real facts in the case, for the workers, and not the queen or drones, are the moving power of the hive. They dictate as to what shall be done, and, in most cases, do it. The queen, so called, is nothing more or less than a laying machine, and the probabilities are that even this is regulated by the workers, and depends almost, if not entirely, on the way they feed the mother bee. The drones come into life at the bidding of the workers, when they make the necessary preparations for them, and the probabilities are that when they have served their purposes in the economy of the hive, that their days are ended by the worker bees, withholding from them a special food which they must have in order to live any great length of time. This is true of all drones, except the one which mates with the queen, and he sacrifices his life in the interest of generations yet to come.

In adition to the brain ganglia, there is located in the head glandular systems, which for the sake of convenience, have been designated systems No. 1, No. 2, etc. There are four of these systems, but one of them is located in the thorax, the next part of the bee which we will notice. Two of them, Nos. 1 and 2, are located in the
head proper, and No. 4 is located in the bee's jaws. According to Prof. Cheshire, and the authorities which he follows, these glands play a very important part in the life of the bee, and in the production of honey. Prof. Cook, however, does not agree fully with Cheshire, but as several editions of his book had been published before he seemed to know anything about the existence of these glandular systems, except the one found in the thorax, and as Prof. Cheshire's book indicates that he was a careful and painstaking student, the writer prefers to follow him in preference to Cook, who is, beyond a doubt, more of a compiler than he is an original investigator, in the literature and anatomy of the honey bee.

We will try to avoid any terms hard to understand, and will ask the reader to follow us as closely as possible, and we think we can give the beginner a pretty clear idea of what these glands mean in a short space. First the liquid secreted in the flowers is not honey, it is nectar, and belongs to a class of sweets known as "cane sugar." Now, honey is "grape sugar," the kind of sugar into which all sweets must be transformed before they can be assimilated by the human body. The chemist would call it "invert sugar." Cook calls honey "digested nectar." We do not, "digested" means another thing to us and the ordinary reader. Honey, as we understand it, has never been in the true stomach of a bee, either as nectar, or honey-only in the honey sac, which is a pouch for carrying liquid, as we shall see later. None of the process of digestion takes place in this honey sac. It is simply a vessel for carrying things, and probably has no more effect upon its contents than the pail has upon the water that is carried in it.

Now, the bee carries with it a kind of chemical laboratory, and these systems are so many bottles, as it were, and in one of them it carries the liquids necessary to produce the chemical action required in order to change cane sugar into grape sugar. The nectar, cane sugar, must be changed, inverted

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into honey, grape sugar, and, as the bee gathers the nectar, she opens her little bottle, one of these glands, and supplies the necessary amount of liquid to produce the desired result, and the transformation commences. In due time we have honey, an "invert sweet," which is one of the most healthy and most easily digested foods known to man. This is not because it is "pre-digested," for this idea is repulsive, but because it has passed through a chemical change, which, with some other things entitle it to the name of honey. The change referred to is not all that is necessary to make honey, as something is needed to preserve the honey, and this antiseptic in the shape of formic acid is probably furnished by another one of these glands.

The bee also needs a liquid to thin and soften the wax, about which we will learn further on, and this also is furnished by a secretion from one of these glands.
Do you know what beeswax is, and how it is made?

This is not all that is done by these glands, according to Cheshire and his school. The young bees must be fed, and they cannot use the food of a grown bee. They are fed a rich looking white liquid, which some one has called "bee-milk," and Cheshire claims that it is the work of one of these glandular systems to secreet this food. This is fed to the bee during all the period of its larvael state, about which we will learn further on, and it is also fed to the queen as long as she lives, and to the drones. Cook and Cowan, whom he follows, says that this food comes from the real stomach of the bee, but we do not believe it does, but is secreted, just as suggested by Mr. Cheshire. We will have more to say about this later.

Do you know of any other animals, insects or birds that are fed a milk food of this kind?

This is as much as it will probably be necessary to say at present about the organs of the bee's head. The next division of the bee is the thorax, which contains internally but little aside from the glands referred to above, and the opening of the alimentary canal, which, of course, extends through it, but its external organs are the most interesting and more important than anything else about a bee, unless it be the tongue.

The bee has six legs, which are attached to the thorax, three on each side. It also has four wings, two on each side of the thorax. Of course, the thorax has strong muscles in it, and some few other things which will be mentioned later on. The bee has a curious arrangement in the form of a bar on one wing and a set of hooks on the other wing, by which it is enabled to make two wings out of the four. A flying animal must have wing space, of course, in accordance with the size of the body. The reader has, no doubt, noticed what large wings blue flies, horse flies and such insects have. Their wings are not in two parts.

Can any of our readers tell us why a
bee's wings are made in two parts, formed by the shape of the leg, and and why they are so constructed that they can be fastened together, thus increasing the wing surface?
The bee's wing is very strongly constructed, as it necessarily must be in order to fly with the rapidity that the bee can, and to enable it to be on the wing a large portion of its life, as are the worker bees of a colony. The bee has all sorts of little tools on its legs, which are intensely interesting to the student, and may be seen clearly with a small magnifying glass, and indistinctly with the naked eye. In the first place the legs are covered with long, stiff hairs, and these hairs are used largely for gathering pollen, a substance which bees gather to use in connection with feeding their young. The reader, no doubt, has noticed the bees come home with little pellets sticking to its legs. These are composed of pollen, which the bees have gathered from the flowers, and deftly packed into a little basket which is
the hairs found on it. The bee also has a little arrangement on one of its legs by which it cleans its antennae. This is a little comb made of hairs, and a little lever which fits down over


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it. The bee cleans her nose, so to stance which, for the time being, sticks speak, by dropping the antennae into the round cavity where the hairs are and letting the lever press down close over it, bringing it in contact with the stiff hairs, and in this way the antennae is kept clean. There is a little spine projecting from the joints of one of the legs which Cheshire says the bees use for lifting the pollen from the pollen basket. Whether this is so or not we are not able to say, as we have never seen the bees do anything of the kind. Prof. Cook, however, does not accept this theory, on the principle, we suppose, that he does not accept anything which Cheshire said that he could find any other explanation for. Prof. Cheshire called attention in his book to some discrepancies in Prof. Cook's book which had been written previous to the writing of his book, and Prof. Cook seems never to have forgotten this fact, and, therefore, never loses an opportunity to disagree with Cheshire.
The bee useș its legs for a number of things, makes them answer for hands and arms, for taking the wax from the wax pockets under the abdomen, about which we will speak later on, and carries it to its mouth by means of its legs. It also combs the hairs of its body and cleans the body off with its legs the same as a person would comb his hair with a comb. The bee has a very peculiar foot. Every one has, no doubt, noticed that the bee can walk up the side of a board, or it can walk on a smooth glass. The foot is made in two parts; one is claws that are hard and stiff, like claws of a bird or chicken, and it uses these for ordinary walking, and never puts the other part of the foot down, only when it is necessary. It also uses these claws for hanging itself up in festoons when it wants to secrete wax, and when the swarm goes out and hangs together in a tree. These claws must be very strong, and attached to very strong muscles, or else the bee could not hold up as many as a hundred of its fellow workers. A man would find this feat rather difficult. In addition to the claws is a soft cushion, which the scientists have been pleased to call by the hard Latin name of pulvillus. This is so constructed that the bee can use it for walking on glass, even though the glass be perpendicular. Almost every one who has not looked into the subject thinks the bee has a sort of suction pump in its foot, and it is enabled to walk on glass by the pressure arising from exhausting the air under the foot. The writer remembers when a boy of reading in one of the reading books how a fly walks on the ceiling. He was taught that it was done by a kind of a suction pump, that the air was exhausted under the foot, and that the pressure of the exterial air held the foot firmly on the glass. Now, a bee does not walk in this way. The little cushion referred to above is carried folded back on the foot, so that it does not come in contact with the substance upon which the bee is walking, unless it desires to have it do so. This eushion secretes a viscid sub-
the bee's foot fast to the article upon which it is walking. When the bee desires to take a step it lifts up the foot and peels the cushion off, as it were, just as you would peel a piece of paper off a wet glass that had been stuck to it. This movement is kept up, and the secretion is continuous until the bee has no further use for the cushion. It then immediately folds it back and begins to use its claws, because it wears out a cushion to use it, and the bee wants to use it as little as possible. Therefore it is always kept back when the bee is walking on anything that it can hold on to with its claws.
There are other things about the bee's legs that might prove of interest, but there are a good many things which we must study before we come to the practical part of beekeeping, and for the present we will drop the attachments of the thorax and take up another part of the bee, the abdomen, in our next lesson.
A few answers have come in to our questions, and a few of our readers have ventured to discuss what has gone before. We are not yet getting the replies, however, that we hoped we might get. We again urge upon our readers to study the lessons carefully, and ask any questions that they wish about anything that they do not understand; also to answer our questions as best they can. What we are trying to do is to reach the practical side of beekeeping about the time that manipulation should commence to secure a good crop of honey.

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## FARM POULTRY.

IT PAYS TO KEEP THE BES'T.


NURSING BABY CHICKENS.
For the first twenty-four hours nothing is fed to young chickens, because he yolk of the egg, which is absorbed into the abdomen, must be digested and assimilated before any other food is taken, or the bowels become congested, dysentery sets in, or, at least indigestion, the result being slow-growing, scraggy chicks which are a misery to themselves and a disappointment to their owners.
The second day hard-boiled eggs, chopped fine without removing the shell, and mixed with equal parts of dry bread crumbs; to each cupful add one dessert spoonful of powdered charcoal.

For three weeks little an often should be the rule. We feed five times a day. The first meal at $5: 30,6: 30$ or 7 o'clock, according to the light. This meal consists of pinhead oatmeal, cracked wheat, cracked corn-all passed through a fine sieve; 9 o'clock, stale bread which has been baked in the oven and coarsely ground in a handmill, just moistened with milk that has been scalded; 11:30, boiled liver and green sprouts of onions. Half a cup of each, chopped fine to one whole cup of dried bread crumbs; at 2 o'clock, more milk and crumbs, lettuce or tender greens chopped fine; from 4 to $4: 30$ all the dry mixed grain they will eat; fresh water three times a day.

After three weeks the future fate of the bird controls the bill-of-fare. Broilers need stimulating food to run them up for market. Those retained for stock should go more slowly to build frame and muscle. Onions will sprout if spread out in a semi-light cellar; if, however, you have not the sprouts, boil an onion, chopped, in the milk.
I have never had any cases of gapes among my chicks, and I attribute it to the constant use of green onion tops or sprouts. Crumbs and milk, or any moist food, must be fed on a flat plate, shallow galvanized pan or strip of board, and removed aften ten minutes to insure nothing being left to get sour. Dry grains should be scattered on the play-room floor to keep the little fellows busy hunting it, the main object being to promote exercise and avoid overloading the crop.
Should there be any weak chicks in the brood, with pinched, pasty-looking beaks too large for their faces, remove them to a small box and care for them in the house, or have the courage to end their lives in a merciful way, for such birds are usually descended from over fat or roupy parents and are likely to develop consumption or some other disease which may spread through the flock. Another chick trouble is diarhea. Scalding all milk used has a tendency to check this. A
rusty nail or a few drops of tincture of iron is also good, as well as being a tonic.
Should the droppings adhere to the feathers, and cause the vent to be pasted up remove the obstruction by bathing with warm water. Keep the patient warm and mix a little poppyseed with its soft food. A few days' care will effect a cure, unless the case is hopeless.-Kate V. Saint Maur in Pearson's Magazine.

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# \% Trees, Garden and Flowers. 

J. O. SHROYER, Editor.

Now is the time to start some to- helps to retain the moisture. We commato plants in the house if you want mence hilling up as soon as the plants early tomatoes for the table this sum- are large enough. This may not be mer. Plant the seeds in a cigar box necessary, but we think it grows faster, and put a layer of wet cloth over them and keep them damp all the time. Tomatoes should not be planted with cabbage seed, as they do not require the same amount of heat. In fact, the tomatoes want so much more that the cabbage would grow spindling if kept the same.
If you saved some canna roots last fall and expect to start them now is the time. Put them in a box with soil about them, keep slightly damp and divide them after they have begun to grow. This is safer than to cut them now, as they are apt to rot. This is also a good plan to follow with the caladium, but it should not be started so soon; in fact, we set ours right out in the yard last spring, and although they were slow in starting I think that I never saw finer ones. The caladium is a fine decorative plant, and should be on every lawn. Plant it at the east side of the house, where it is shaded part of the day, and keep it pretty moist, and you will have a fine plant. The white day lily is another plant that it is not well to dispense with. It grows very luxuriantly, and will last for years, and each summer it gives an abundance of large, pure white lilies that have a splendid fragrance, and it can be commended for any place where there is partial shade. Such a position as the north or east side of a porch is a good place for this fine plant. It is sometimes listed as funkia by the florists. It is a plant for the busy woman who can not care for annuals. Just give it a light covering of leaves and it will be ready to come up the next spring, and even without covering it has lived through very cold winters.

## SOME CELERY POINTERS.

By Wallace Jamison.
The cultivation of this healthful salad is increasing, and it finds a place in many farm gardens. It is not as difficult to grow as many suppose. It thrives best on moist, rich soil, and a good application of well-rotted manure should be applied early in the spring. The ground should be well plowed and worked down and pulverized thoroughly.

The seed is sown in well-prepared seed beds, and we usually sow on the north side of some building, or where it will have some shade. The seed germinates slowly, and a moist seed bed is necessary. After covering the seed shallow we pack the earth with a board or press it down with the feet. Thin muslin is then placed over the bed, and in very dry weather some water is applied, and plenty of plants is usually the result.

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# * * Dairying on the Farm 

place for cows, as it is the next thing to impossible to keep them clean, unless they are in stalls especially fitted

If a heifer is intended to be devel- by itself, and so constructed that it oped into a profitable dairy cow let her care and training be in that direction from the very start.
S.

Irregularity in feeding and watering interfere with the secretion of milk in dairy cows. With fattening stock it interferes with digestion, and, consequently, with the laying on of fat.
S.

In selecting food for a cow or any other kind of animals its digestibility is the first thing that should be taken into consideration, and after the selection is made the food should not be furnished too freely, or it will overburden the animal and injure the digestive organs, and often cause a check in growth.

It costs no more to keep a good cow than a poor one. The fixed charges of maintenance will be the same for a cow producing two pounds of butter a week as for one that produces six pounds. It will require very careful management to make the two-pound cow pay for the food consumed without reckoning the value of the labor or the interest on the investment, no matter how cheaply she was purchased.
S.

The condition of the cows is an important factor affecting the quality of the milk. If they are in good condition and thriving the milk will be of the best quality, provided the food is all right. If they are in poor condition and failing the milk will be correspondingly deteriorated and poor, and if they are in a very poor condition the milk will be positively unwholesome, besides being deficient in the important elements of nutrition.
S.

## WINTER DAIRYING.

We frequently find the advice in dairy articles to have cows come fresh in the fall. Now, this is no doubt good advice and all right, provided, and there is a good deal in that provided, the dairy farmer is equipped for winter dairying. It is sheer folly to expect a cow to give a pail full of milk that spends her time, night and day, a winter like this in the barn lot, with no protection from the cold winds and storms except that of leaning up against a rail fence or standing with her back to the wind. It is bad enough for any kind of an animal to do this, but a dairy cow simply cannot, and will not do her best when she is forced to shiver in the cold night and day. She is a little better off if she has a straw stack to hug around, or an open shed to run under when the weather is very bad, but the farmer who has no better arrangements for his stock than this should have as few cows as possible to come in in the fall. Nothing short of a well-equipped dairy barn will enable one to get the best possible results from winter dairying. This barn should be built
will be warm during the most severe cold weather. It should be well ventilated, kept free from dirt and litter, and be so built that the cows can be fed from the front. It is hardly necessary to say that it should also be kept free from bad odors. The stalls should have either a cement or board floor, and be kept well littered, and have a ditch just back of the cow's hind feet to catch the droppings. It would pay well to have a trough so made that all of the liquid can be carried into a vat and saved, as this is the best part of the manure. The fertility saved from the dairy barn will add largely to the profits of dairying if it is properly looked after. With a barn like this, kept clean and sweet, and the cows warm and comfortable and well fed with a properly balanced ration, plenty of clean, healthy, rich milk may reasonably be expected from a good dairy cow in the winter.
The horse barn is not the proper

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up for them. A dirty, filthy looking cow means dirty, filthy milk. Then there are odors about the horse barn which are sure to taint the milk more or less. even though it is taken from the barn as soon as it is drawn from the cow's udder, which all milk should be, let the barn be ever so clean and sweet. Unless one intends to equip a building for the work and care for the cows and milk properly, it is a good deal better to let the dairy cows come in in the spring, when they can be milked in the open air, free trom bad odors, and select their own place to lie, and thus keep themselves fairly free from dirt and filth.

Then, again, it is anything but an agreeable job for a woman to go out in a storm, with the mercury 10 to 20 degrees below zero, and milk a half dozen cows or more, even if they do not give very much milk. You may say that the women should not milk, but they do on most farms, just the same, and we must take things as they are, and not as they should be, until they are made better.

With plenty of good clover or alfalfa hay, preferably the latter, and a wellequipped cow barn and a lot of firstclass cows a farmer may carry on his dairying in the winter with ease, and a reasonable degree of comfort during the .coldest weather, and make good money out of it. It does not require such expensive equipments, but they must be of a character that will keep the cows warm and comfortable, and, as we said before, free from dirt or bad odors. The stalls must be properly arranged if the cows are to be handled to the best possible advantage, and with the largest returns for the smallest outlay of time and money. There is no use to expect a dairy cow that is not comfortable and happy and contented in ever way to do her best at milk production. She simply cannot and will not do it if she is in the least degree nervous or uncomfortable in any way. A dairyman should like his cows, and his cows should like him, or else he should go out of the business.

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ous series of articles entitled: "The Decline of the Republic." These articles will show the United States as it exists, socially and politically to-day.
They will draw parallels between the conditions of to-day and those of the ancient times, when the very prosperity and seeming enlightenattendant extravagant and arrogant viciousness was a forerunner to There and ruin.
There will be no general attack upon wealth, which is legitimate, which and in every way to be encouraged, -but against special privileges, and destructive of American political and social principles and Republic The vast system of laws of special privilege in the United States explains the vast private fortunes on the one side and the poverty of the masses on the other-a poverty in face of extraordinary and unexampled material progress and general growth of power to produce wealth. Lincoln's declaration that a nation cannot long exist half bond and half free applies as well to a condition of industrial as to one
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