

Feeding animals only to keep them over winter is not profitable. Every animal should be so fed as to make a gain. It is a loss of time to feed in winter simply to hold an animal over until it can be turned on the pas-There is no reason why the farmer should sacrifice the winter Warm quarters and proper food should make animals gain and ony in winter.

#### Feed Digestible Foods.

It is possible to give an animal an abundance of food and yet not supply its wants. It is the amount of digestible matter in foods that fixes their value. When hogs have a desire for coal, charcoal, rotten wood, etc., the indications point to a possible lack something required, which may be the mineral elements, especially lime. The feeding of wood ashes or ground bone would no doubt satisfy the desires of the nimals. The food should also be improved by the use of bran and ground onts.

#### Slipping Plants.

in taking slips from plants for rooting many persons take off the young branches from the sides and base of the stock, forcing it to expend all its energies in sending out new growth from the top, and the result is a "scraggy" plant. Try taking your slips from the very top of the plant, leaving all sprouts at the base and sides of the old stalk, and you will be surprised to find what nice bushy plants you will have in a short time. Geraniums, coleus, begonias and pelargoniums are benefited by such pruning. Long branches of wandering jew may be put into a bottle of water and hung behind a picture so that the vines will twine about it, making a pretty accoration while the roots are forming and the little branches are starting out along the stem.-The Enite-

### Orchard Grass.

Those who have sown orchard grass along with clover on land adapted to its growth have usually been well sattsfied with it, as the two are fit to cut shout the same time, or much nearer together than either of them with timothy. Toey also should have the seesown at the same time, that is, as early in the spring as the ground can be made fit. As its name indicates it grows well in the orchard or anywhere in the shade, and it likes a rich, sandy loam, deep and moist. On such soils it starts early in the spring and grows rapidly, thus it makes a good grass for a permanent pasture, but when the ground is strong enough it is more valuable for hay, as its rapid growth enables one to get two or often three crops a year. It needs to be sowed thickly, say three bushels when sown alone, or two busheds with 15 pounds red clover seed per acre when they are grown together, as if sown thin it makes a coarse straw, that is rather poor hay, especially if not cut quite early enough. It needs considerable curing, but if cured as we would cure clover, mostly by sweating in the heap, it makes a hay that is much relished by horses. Some sow the clover and orchard grass and add about five pounds of white clover seed to the above mixture, mix together well, and make a pasture of it. This is a very good way, especially if the field is one that the blue grass and red top will come in naturally.

## Winter Washing of Fruit Trees.

The winter season offers the fruit grower his opportunity for wreaking vengeance on the insect enemies which play such incalculable havoc with the fruit trees in the summer months. The insects are practically at his mercy in the dead season, for they cannot fiee from the deadly poison he may with safety apply for their destruction, and if the owners of orchards care to exercise their powers of queiling infes tation at the proper time and in the proper way then can largely diminish if not entirely remove the risk of harmful insect attacks. The board of agriculture has prepared and is circulating free of charge a leaset dealing with this subject which is deserving of thoughtful attention.

As is well known the insects hibernate in the broken bark of the trees. and the course of treatment proposed is the washing of the trees with caustic alkali wash, the use of which has been found effectual in removing the rough decaying bark under which the insects shelter, and at the same time in destroying the eggs of noxious ints. The directions given for the reparation of the wash are: First dissolve one pound of commercial caustic sods in water; then one pound of potash in water. When both have been dissolved mix the two well together; then add three-quarters ind of agricultural treacle, stir well. and add sufficient water to make up to s. The best time to apply about the middle of February, when the eggs are in a more susceptible state and the trees still safe from in-

## Erpland Buttermen Needed.

teature requiring more attention the part of buttermakers is that cleanliness in their creameries. As a feature is so essential to making ther of the best flavor, it would m that it would not be necessary even mention it, but the fact that

it is one of the things which the buttermaker most commonly neglects. As very few of the buttermakers throughcut the country are graduates of our dairy schools, there are not many of them who understand the influences that affect the flavor of butter. They have learned buttermaking in a mechanical way and go through the pro cess according to rule, but if anything should occur to interfere with the working of these general rules they find themselves at sea. There is nothing more difficult to understand than the production of flavor in butter, but in most of our dairy schools the principles of producing it are taught in such a way as to place it almost com pletely under the control of the buttermaker. The buttermaker finds it hard, unless he has studied his work at a school where principles are taught to adjust himself to conditions and consequently some of the bad butter which is produced is traceable to his information as to the best method of treatment. We would naturally expect, from the fact that few of our buttermakers are graduates of dairy schools, that considerable difficulty is experienced in testing the milk. Every well equipped creamery at this time has a Babcock milk test, nd its operation is one of the important features of the factory. If a but termaker is incompetent in this direc tion he is sure to have lots of trouble, as it is quite common for farmers to become skeptical about their test even if it is accurate. We have had inquiries come to us along this line ask ing where an official test should be obtained, as the patron aid not think that his factory was giving him a fair test. It may be said here that the dairy commissioner makes such tests and the creamery departments of the various experiment stations are also willing to make tests of this kind

### Growing Trees to Withstand Drouth.

This is work, however, which should

be acceptably performed by the butter-

maker, and the fact that there is so

much trouble over it simply indicates

that more of our buttermakers should

be graduates of dairy schools,-Wis-

consin Farmer.

It has long been noticed how much better deep rooted trees and growing plants stand a drouth than those which are shallow rooted. The tendency to root in any particular way is largely an inherited characteristic in the various varieties of trees or plants, but partly a matter over which man has some control. There are conditions in which moisture is so frequently supplied by rain, or where the water from below comes so near the surface of the ground that it is impossible and unnecessary to try to make the trees root deep. There are no fruit trees so far as I know, and but a few kinds of nut-bearing trees, which do well if their roots extend to a perpetual water strata. But on ordinary sofls, and under usual conditions, trees may be so pruned and trained that they will send their roots deep down, and the deeper rooted the trees become the bealthier, the longer lived and the more productive they will average.

The trees from the same nursery, or the same kind of root, if planted in California, will stand a drouth which sould kill its fellow planted in New Jersey, with its ordinary root sys tem. This fact leads me to inquire if there is not some way by which trees. may be induced to root more deeply. The chief cause of the difference is that in California the soil about the orchard trees is kept well cultivated, and each wet season the ground is deeply plowed, thus all the surface roots and rootlets are cut off. The moisture during the growing months is supplied by a deep furrow system of ir rigation, so the water is sent well down into the ground and the roots for water. Indeed the top soil is kept so well cultivated that there is always a dry layer of earth of several inches in thickness, which prevents the radistion of moisture.

From experiments which have been made in the cast it is possible to force the roots to go deeper than were nature let alone, and always, so far as I have investigated, has the experiment been attended with satisfactory results. If the main roots of a young nursery tree are pruned square across a number of small rootlets immediate ly start near the point of amputation, and their growth is usually at right angles to the root from which they criginate. Now if in place of a square cut, a fresh very oblique cut be made the tendency is for a single main sprout to grow, and in the same direction with the root from which it started. It is evident if this rule holds true, that a deeper rooted tree can be obtained by pruning the tap root or roots in this manner. The side roots should be similarly pruned and the oblique face of the cut turned downward. Then if in addition to the proper initial root pruning, the orchard be plowed and cultivated, if not as fre quently as is the custom in California. at least once in a while, so as to cut off the surface feeders, then the tree will depend more and more upon its deep roots. It would not be well to allow too long an interval to elapse between these root prunings for the removing of a considerable quantity would be a severe shock to the tree.

Deep rooted trees do not respond as quickly to fertilizers, but on the other hand they do not make known a want as quickly. There are always a sufficient number of small roots to take in the food or water, and the fact that there are none of these upon which the tree largely depends will be a guar-antee that year in and year out the deep root system is best. The experient is well worth trying.—Charles E chards, in American Agriculturist.

Better do it often.

# CHILDREN'S COLUMN 0000000

Clothes. Although my clothes are fine and gay. They should not make me vain: For nurse can take them all away, And put them on again.

Each flower grows her pretty gown,
So does each little weed:
Their dresses are their very own,
They may be proud, indeed:
-Abbie Farwell Brown, in the Interior.

There is a bird which seems to be lestitute of all natural feeling; a bird without any home instinct or affection for its offspring; a bird, in short, which is an anomaly among birds, and a curious study for the naturalist.

This is the cow blackbird of Amer The cockoo of Europe is a bird that nearly approaches the cow blackbird in its habits and evurious instincts. Both of these birds furnish remarkable exceptions to the rules

governing the majority of their kind. The cow blackbird makes its first appearance in western New York early in April. These birds are about seven to seven and a half inches long and of a greenish black or brown color, usually having a brown head. The cowbird makes his chief tood of the insects infesting cattle, so these birds are always found in the vicinity of cattle. When in quest of a dinner they alight with boldness upon the backs of these quadrupeds. It is from this curious habit the bird gets its name of cow blackbird.

An observer of their habits says: These birds are particularly abundant in the west, or they may appear so, for the numbers that in the east would be spread over a large area, here gather in great flocks, wherever large numbers of cattle are congregat ed. Every wagon train passing over the prairies in summer is attended by numbers of these birds, and every camp and stock corral, permanent or temporary, is besieged by busy birds. eager to glean their dinner from the wasted forage. They become so bold that they flutter without fear near men, and sit in rows upon the backbones of the animals, who seem to rather like their attendance."

The "mother" cow blackhird is a ery unnatural and heartless creature, Doing without a nest of her own, she steals away and stealthily seeks the nest of some other bird in order to deposit her eggs. She searches sometimes a long distance before finding a nest suited to her purpose, or one from which the owner is absent. In this strange nest the blackbird egg is laid, only one at a time, and then the mother, flying away, displays no furthere concern about her offspring. which is left entirely to the care of its foster parents.

The blackbird shows much cunning in her choice of a nest, usually selecting that of a bird much smaller than herself. Then the foundling, coming from the larger egg, being hatched out first, often gets more attention from the foster mother than her own rightful children. It is bigger and bolder. It grows more rapidly, red soon more than fills the nest, and takes away the attention which should be bestowed upon the little sparrow or warbler, whose parents it has deceived.-Brooklyn Eagle

## A New Kind of Vegetable Stew.

"Mamma," cried Alice Newcomb, rushing in the house to her mother, "guess what my dear teacher gave me and what I've got in my hand!'

"A book!" guessed Mrs. Newcomb smiling. "An apple? An orange? A have no need to come to the surface paper doll? A picture? No? Then I give it up."

"It's a bulb!" cried Alice dancing with pleasure. "And some day, my teacher told me, it will be a beautiful Chinese lily. I must plant it among some pebbles in a dish of water. And then in a few weeks it will send up lovely flowers.

"How nice! How very nice!" cried Mrs. Newcomb as sweetly as though she didn't know all about Chinese lily bulbs. And then Alice, who always has a dozen things she wants to do on hand, danced off to the kitchen to make candy.

Mrs. Newcomb didn't happen to have a giass dish she could spare on hand, and Alice's allowance for the week was all gone. So she put bulb on the lowest shell of the pantry and forgot al about it until Saturday came round. And then-you'd never guess what had happened—there was no lify bulb to plant in the dish!

"Where is the bulb Alice placed on the lowest pantry shelf (Anna?" Mrs. Newcomb asked the maid where Alice was all ready to plant it.

Anna, who hadn't been with the famfly very long, looked amazed.

"I haven't seen the bulb, Mrs. New comb," she answered. "What did it look like?"

"Like an onion-exactly like an nion," Alice told her, all eagerness and excitement to get the bulb into place in the bowl. Anna looked at her steadily for about 20 seconds, and then then she threw up her hands in dismay.

"An onion, ye say., Was it big, an' dry and' had no stalks to it?" she asked solemnly.

"Yes, yes," answered Alice, jumping up and down, she was in such a hurry. What did you do with it, Anna?" "Sure," said Anna sorrowfully, "I didu't go for to do it on purpose, Miss Alice, but-but I thought it was an onion, an'-ye awl ate it in the vege-

able stew I gave ye last Tuesday.

Alice could hardly keep from crying

she was so vexed and disappointed. but her mother comforted her with promises of another bulb, and another Illy to bloom later, and that afternoon they went down town together. Alice and her mother, and bought a bulb that was even bigger than the one Alice's teacher had given her. And the dear teacher, learning by and by what had happened to the bulb she had given her little pupil, insisted upon replacing it with another, so Alice

beautiful lily flowers to appear. But Alice's papa, when Alice told him the story, couldn't sympathize for

is now waiting and watching for two

laughing. "Why, inventors are great people, he said, laughing, "and Anna invented

for us a perfectly new kind of vege-

### table stew."-Chicago Record-sterau-A Struggle to the Beath.

From the St. Nicholas comes this exciting description of a fight against

an American panther

Frank, accompanied by the three great hounds, did not hesitate to charge this formi-lable and sudden enemy. But the effect was not what he expected. Instead of bounding away, the great cat, looming larger and more terrible the nearer he ap preached, faced his foes flercely crouching above the slain sheep, ready to spring, and yelling screams of de The mustang moniae ferocity. stopped and reared, then stood snorting and trembling, and could not be force nearer. The great dogs rushed on. And Frank sat in his saddle and watched the fight, unable to assist, too fascinated to fly.

Now be realized the imprudence of leaving his arms, and repented his boyish folly in despising discipline founded upon experience.

"Old Strategy" was the leader of the three great dogs. His wise brain did the planning for all, and never illd soldiers obey a chief with more careful attention to signals of command than the other two great dogs gave to him. He was the fleetest of the three. "Reserve," who ran in the rear, and always waited the proper time to lean and seize, was the most powerful, "Skirmish," the lightest of the trio, made it his business to dis tract the quarry by flashing feigned and real attacks all over him, here, there, and everywhere, to provoke openings for the other two.

Just as the battle began, the clouds opened wide, and the brightening moon shed a distant glimmer over the scene through the mist that rose from the wet grass, disclosing the huge mountain lion standing over his prey with flattened cars, snarling face teeth gleaning claws widely spread mad with hate, menacing the dogs.

And now Old Strategy, warily ob servant, crept, growling, directly front of the angry lion, tempting and taunting him to spring. Nearer-s little nearer yet. Several times the lion seemed about to leap, judging by his lashing tail and settling haunches; but Skirmish distracted him with a sudden feint, or Reserve threatened his flank. When each dog had a good position. Old Strategy provoked a leap by a sudden movement. The lion sprang, body, limbs and claws spread to strike. But Old Strategy wasn't there when he alighted; and the lion did not alight where he aimed; for the moment he leaned Reserve and Skirmish dashed in and caught him in the air, one on his flank, one by a hind kneejoint, and held back with such force that al three rolled along the grass.

Before the lion could retaliate, all three dogs were out of reach, to re peat their provoking tactics.

For half an hour this furious battle was continued. Leap, charge, rush or strike as he would, the worried lion could not bring his treacherous assailants to a close. But for a few insignificant scractches, the dogs were unhurt, but the lion showed many marks of the conflict. The dogs gave him no rest from their incessant attacks. Occasionally one of the dogs would lie down, panting, and rest himself, while the other two kepl the game going. but their adversary was not permitted

a moment's breathing time. Gradually the tormented night prowler grew weary and faint. His own fury helped the dogs to exhaust him; for each effort he made increased his rage, until he became a veritable demon of frenzied hate, and spent in useless screams the breath he needed for battle. As his powers diminished those of the dogs in creased. Their rushing, leaping grips were more confident, more frequent and more effective.

A little later brave Skirmish made such a prodigious feint, in obedience to some secret sign from Old Strategy that the lion whirled to strike at him This gave Old Strategy his chance, He fastened the first grip upon the throat of the great cat, keeping his own body behind and partly under the head of his foe, while Skirmish dragged at a hind leg, and Reserve put all his weight and force into a grip over the loin, stretching their enemy helpless for a moment-but only for a mo ment. As soon as the great cat could muster his tired strength, he drew his powerful body into a curve, and thrust at Old Strategy with his lashing hind legs, compelling the dog to let go. But the instant Old Strat egy was pushed off, the painful grip of Reserve at his loins made the lion curl down again, to strike with his fore paws, when Old Strategy pinned his throat once more from the other

So in five minutes more the battle was ended and the three dogs had again proved their right to the proud distinction of being the only sogs that could kill a full-grown mountain-lion.

### Ireland Losing Her People.

According to the figures of the register general, Ireland is still losing in population, the decline for the last year being figured at 32,435. This is entirely accounted for by immigration, for there was an excess of births over deaths amounting to 13,853, mak the loss by emigration for the 45,288. The registrar's figures show that last year there were 21,300 mar-riages, 101,459 births and 87,606 deaths. There has been, in comparison with previous years, a slight de-cline in both the birth and marriage rates, while the death rate shows an increase, which is, doubtless, partially accounted for by the fact that the reductions of the population by im-migration are almost entirely drawn from the ages in which the death

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#### The Railroad as an Educator.

Since the outbreak of the troubles in the Philippines there has been a great demand for maps showing the resources of the West, the routes to the Pacific coast and to the islands of the Orient. Last summer one rail-road company had 15,000 of these maps printed at a cost of \$10,000. They cost 65 cents each, but were sold for cents each, barely enough to pay the express charges. The managements of the public schools of Iowa, Missouri and Kansas learned of thes naps, and to date have caused over 5,000 to be distributed among the chools. They are used by teachers preference to the regularly piled mans, because of the additional

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