

AGRICULTURAL.

Breeding The Pigs.

The following is an abstract of a paper recently read before the National Swine Breeder's association of the United States: It is said that a cow may lose her calf but the cow will be left for milk, that the ewe may lose her lamb but the ewe will be left to shear, that the mare may lose her colt but the mare will remain to work, but when you have a sow who loses her litter of pigs you have lost four months feed, and it is too late for her to raise another litter, you must feed her for another year or turn her into pork.

The first hour of a pig's existence is the most important and dangerous hour of his life. He is very delicate, very tender; he is easily crushed; he is easily chilled. When a little young pig is once thoroughly chilled, it will require much more than ordinary care to rear him. Right here comes in the Darwinian theory of the survival of the fittest. A pig has for his mother a sow, fat, lazy, awkward and clumsy. If he is too weak to get out of the road for the mother, nature has provided to dispose of him by having the sow lie down on him and

CRUSH HIM TO DEATH.

If he escapes this danger, nature is still after him with her relentless hand, determined that he shall not reproduce himself, and the survival of the fittest comes in play, and the stronger pigs crowd him back, rob him and make him starve. And if by accident or otherwise the weaker pig still escapes, and the breeder uses him into his own herd, we call it ignorance. If he sells him, it is dishonesty.

Good feeding and good breeding are so closely allied that I have found them inseparable; useless is the one without the other; they go hand in hand. We can take the best herd of hogs in the country, and by starvation and neglect, can run them down faster than the finest breeders in the land can possibly breed them up. On the other hand, I have found that hogs can be bred up quite as fast as they can be fed up; in other words, a hog that is a good feeder and bad breeder can bring up a herd just as fast as one that is a good breeder and bad feeder.

The question has simmered down to this: How to get the greatest possible amount of pork in the shortest possible space of time with the least possible amount of feed. This is how I would do it: I would teach my pigs how to eat very early—when not over two weeks old—in order to relieve the sow from the strain of nourishment for a big, strong, hearty litter of pigs. I have a set of 200 pounds of pig suckling 150 pounds of poor, weak, depleted sow, she furnishing nourishment for them in their strength and heartiness. To avoid this drain I would feed my pigs with all I could get them to eat of

LIGHT, NUTRITIOUS DIET

and give the sow a rest.

If hogs ever stop growing for one or two months you have lost all your labor and all your feed for that length of time, and you can never regain it, nor any part of it. No matter how rapidly they may grow in fattening thereafter, they will not grow any faster for having been stunted for two months.

Crowding the pigs though as rapidly as I could on all I could get them to eat—but not exclusively on a corn diet, any more than I would permit a child to eat all fat meat and pastry and high-seasoned victuals,—while I gave the pig some corn, the great bulk of his food would be oats, bran, slops, shorts, grass, starch, pumpkins, etc. I would change the food of and on; I would crowd and stimulate their appetites with anything and everything they found appetizing. More corn and concentrated food, and crowd them, and crowd them hard. He requires a certain amount of what he eats to run his system, and that is why a pound of feed does not make a pound of pork. Therefore, remember that all you get a hog to eat over and above what is taken by his system is profit, and all profit, and the only profit you get out of him. It is like running a steamboat up stream. If you use just fuel enough to overcome the current, the boat will stand still, and all your labor and fuel are lost. Then

CROWD HIM

and push him with a rod that will tone and stimulate his system and will help him to digest and assimilate all that he eats, and you will make money.

If you are going to grind 300,000 pounds of flour you do not want to run a steam engine eighteen months, if you can do the work in twelve months, because you can save six months' fuel; and you do not want to run a hog's system for eighteen months in order to get 400 pounds of pork if you can get that amount in twelve months, because you can save all the fuel—all the feed it would take to run a hog's system for that length of time. While you have steam up, grind; crowd the hopper full with all that you can get him to eat, digest and assimilate. The empty hopper is what wears the machinery. Push your hog for all there is in him. You cannot overeat a pig on slops, bran, pumpkins, shorts, and grass, etc., but you can develop him and stretch his hide wonderfully. Keep on stretching his hide, a little every time you feed him, and let him grow to fill it, and then when he will not stretch any more sell him, and sell him quick; he is fat then. Every moment you run an engine after the grain is ground you lose your fuel and labor, wearing out the machinery and getting no return.

What Canada is Doing.

The question is often asked why Canada is so rapidly forging to the head as a dairy province. John Gould says in the Practical Farmer that there is only one answer, the government has recognized the fact that the dairy is its chief industry and is bending its energies toward putting it in the very front rank of progress, and is wise enough to see that the element of education must be prominent in the matter. To this end not only are there some four successful dairy associations in the Province, but there is one large dairy school, and then in addition there is in the more dense dairy sections what are known as travelling dairy schools.

How I Raise Mutton Lambs.

I use three grades of ewes, viz., half blood Shropshires, common Merinos and grade Spanish Merinos. I give the latter the preference. I use recorded Shropshire rams. For best results 30 ewes are enough for one ram. I breed the ewes about November 1. I feed them grain during the

coupling season, the amount governed by their condition. During the winter I feed choice timothy and clover hay and corn fodder. March 1, I begin a grain ration of corn, oats and bran, and continue two months. I wean the lambs about August 1, feed a few weeks and sell. I have them weigh from 60 to 80 pounds and get 4 1-2 and 5 cents per pound. I want good matured ewes and rams, good feed and care, and the lambs will take care of themselves. This is my seventh year in the business and I find it so profitable that I shall stick to it. —[National Stockman.

Push the Early Pigs.

Have your pigs dropped early and push them so as to get them in market before the packing season begins. Those who have done this have realized for ten years past from twenty to forty percent more for their hogs than those who held them until the packers wanted them.

Green Food for Swine.

From experiments Prof. Shaw concludes that while pigs fed for 123 days on a suitable meal ration and housed in summer increase in weight at a rate of 24 per cent., pigs fed on two-thirds the quantity of the same meal ration, the balance of the food being made up of green fodder cut and mixed with the meal, increase at a rate of 50 per cent. In pork making the questions of market values and of the best season to market are of great practical importance.

Wintering Honey Bees.

There are many methods recommended as the best for wintering bees. One will say, keep them warm; another, keep them cold; one will say, put them in the cellar; another, bury them in the ground; another, put them in the attic, etc. Is it any wonder that the beginner becomes confused? That bees have been wintered safely by any of these old plans I shall not dispute. But I am certain that not one of them will alone prove successful in the majority of cases. By any of these methods a large number of bees die from each stock during the winter, so reducing them that it takes nearly the entire summer to regain what they have lost. To be successful we want good strong, healthy stocks in early spring.

In nearly all the hives now in use there is no proper ventilation and no arrangement for the bees to cluster compactly together in cold weather; consequently the honey in each hive becomes sour, thin and unhealthy, the combs black and mouldy. It is impossible, in our variable climate, to winter bees successfully for any number of years with any degree of certainty in such hives. In winter bees cluster closely together. The more severe the cold the closer they will cluster if the arrangement of the hive will permit, the better to keep up the animal heat necessary to sustain life.

By the old methods, the cluster of bees is divided by the sheets of comb. In my hive the bees cluster compactly together at the top of the brood frames below the ventilator. They are here able to keep up the required amount of animal heat, and are in close proximity to their winter stores which they can reach at any time.

A neighbor who winters on my plan, had fifteen stocks completely buried in snow over six feet deep and the crust formed over the hives sufficiently strong to bear a horse. They remained under the snow from January until April when they thawed out and every stock was found to be in good order. Good ventilation, easy access to their winter stores and the compact clustering of the bees together was what saved them.

If we commence the winter with strong healthy stocks we can by judicious and common sense management bring them out strong and healthy in the spring, which insures a good profit in surplus honey in the honey season.

The winter is a grand time to study bee keeping, prepare hives and all fixtures, and get everything in readiness so as to secure the greatest possible profit when the honey season comes.

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Making and Saving Manure.

All the rough straw and fodder may be tramped into manure in a covered yard or shed, or in an open yard, if well littered, if kept evenly spread and well tramped constantly by the stock. The barnyard may be well cleaned out before threshing, and the first straw from the machine spread evenly over the entire surface, two or three feet deep. This prevents the yard from getting muddy, and absorbs all liquid manure. Then, when the yard is cleaned out the next season, all can be taken up with the ordinary manure fork without disturbing the soil. Mud holes will not exist to be filled in with the gravel every season.

The horse stalls may be kept full of straw, to be renewed every day, except in very cold weather. An immense amount of straw may thus be used, and no liquid manure be lost. The cow manure may be wheeled out and spread over the horse manure in alternate layers. When cleaning the yards, lanes, and other places, the refuse which has accumulated may be added to the manure heap.

Such manure, used with clover, will steadily increase the fertility of the soil, and the farm become richer. A large portion of the horse and cow manure may be spread on the clover sod at different times through the fall and winter for the benefit of the corn crop. If there is not enough to cover the entire field, cover the poorest places thickly and evenly. Manure spread on the surface, after the field is plowed in the spring, may be worked in with the disc harrow. This furnishes available plant food to the young corn plants as soon as needed.

After harvest, manure may be used for topdressing wheat ground. This is thinly spread, and thoroughly incorporated with the soil. Many years' experience has proved this the best way to prepare a field of wheat to be seeded to clover the following spring.

In the Prince of Wales Coming?

A despatch from London says:—It is again rumored that it is the intention of the Prince of Wales to visit the Chicago Columbian Exhibition. It is said that he will make the trip across the Atlantic early next summer in the royal yacht Osborne, which is a vessel of 1,500 tons burden and 3,300 horse power, and that he will disembark either at Montreal or Quebec, proceeding thence to Chicago. The Osborne will be escorted by a number of British warships.

FOUND A BOY'S SKELETON.

Murder Believed to Have Been Committed in Idaho to Get a Fortune.

A Boise, Idaho, despatch says:—Laborers engaged in road work near Canyon Hill, in Canyon County, Idaho, have found the skeleton of a 10-year-old boy. Beside the whitened bones lay a musket of ancient pattern, the stock worm-eaten and the barrel red with rust. The skeleton bears no trace of injury. No resident of that locality can recollect the disappearance of any child during the last fifteen years. But it is evident that the skeleton has rested among the lava rocks where it was found for more than twenty years. One or two old-timers believe that the bones are those of a little boy named Jarvis, who accompanied his uncle, a man named Wilkins, across the plains from St. Joseph, Mo., in 1866. Little Jarvis was the sole heir of wealthy parents who died in Boston in 1865. His uncle became the guardian of his person and his fortune, and decided to take his young ward to Oregon. They proceeded to St. Joe, joined an emigrant train, and after many hardships reached Fort Hall, Idaho. There the train divided, Wilkins, his nephew and one or two others continuing down the Snake River toward the West. One morning Wilkins and the lad left camp to shoot game. Several hours later Wilkins walked alone into camp and reported that little Jarvis had fallen from the lofty brink of a distant cliff, dashing out his brains against the stones below. After Wilkins reached Oregon all trace of him was lost. When little Jarvis disappeared the emigrants were encamped near Canyon Hill, and there is every reason to believe that the skeleton just found is his. It is thought that his uncle stabbed him and left the body upon the lava beds as food for wild beasts, the murder being committed in order that he might secure the fortune that the boy's parents had bequeathed him.

Engineering news.

A great dam is now building across the Periyar River, in India, which is destined to store up 13,300,000,000 cubic feet of water, of which 6,615,000,000 cubic feet will be available for irrigation. The dam will be 173 feet above the lowest point in the river bed, with a 5-foot parapet rising above this. The thickness at the lowest foundation level is 138 1/2 feet and 12 feet at the top. The material is concrete, composed of 25 parts by measure of hydraulic lime ground, but not slaked, 30 parts of sand and 100 parts of broken stone. The front and rear faces are of uncoursed rubble masonry, pointed with Portland cement. The limestone is obtained from quarries sixteen miles distant, and is transported partly in boats and partly by an overhead rope conveyor. This same yields a lime differing but slightly from that used in many large French dams. The stone for the masonry is a hard syenite, of which the neighboring hills are composed, and much of it will be obtained by excavating the waste weir through which the surplus water from the reservoir will escape. The sand used is sharp and clean, and is obtained from the river-bed at the site of the work.

The use of electric motors in place of belting and countershafting has recently received an extensive application at the Small Arms Works at Herstal, Belgium, where 260 horse-power is distributed in this manner to different parts of a factory covering nearly five and a half acres. The engine used is a 500 horse-power compound condensing Corliss, with cylinders 17 and 23 inches in diameter, and of 5 feet stroke. It runs at sixty-six revolutions per minute, and has in place of the fly-wheel the armature of a large dynamo of 500 electric horse-power, which can develop 2400 amperes, at 125 volts. Some idea of its size can be gained from the fact that the copper in the magnets weighs two tons, and that in the armature 1320 pounds. There are seventeen motors used in different parts of the works, ranging from 3 to 37 horse-power in size. The shops are all lighted by a current taken from the same dynamo, 116 arc and 200 incandescent lamps being required for this purpose. The plant gives great satisfaction, although many of the motors are subjected to very variable loads, and are exposed to dust and dirt. The total efficiency of the dynamo and motor plant is 76.6 per cent, which is held to be much greater than would be possible with any system of belt and shafting transmission.

The first use of a steam whistle for locomotives has recently been the subject of considerable discussion in technical circles, and it is now stated to have been in 1833, when the "Samsen," an engine belonging to the Leicester and Swannington Railway Company, ran into a horse and cart loaded with butter and eggs. The engineer had a mouth horn, and could not attract the attention of the driver in time to avoid an accident. The manager of the line, Ashlen Bagster, reported the circumstance to George Stephenson and suggested that a steam whistle would be a good means of giving a warning at grade crossings. Such an appliance was at once made by a local musical instrument manufacturer and tried with such success that all the engines were soon fitted with them. A drawing of this whistle, signed by H. Cabry, the company's engine superintendent, and dated May, 1833, shows it to have resembled in outward appearance a fireman's trumpet. Steam was admitted through a cock turned by a handle like that on an ordinary water faucet, and as the shaft of this handle is short the whistle was evidently placed on a dome over the rear of the boiler, near the platform on which the engineer stood.

In 1886 Thomas Evershed, who was State Engineer of New York for some years, proposed a method of utilizing the power of Niagara Falls, which is now being carried out in a modified form by the Niagara Falls Power Company. Reports of the progress of the work have appeared in these columns from time to time, but a summary of the plans as far as they are completed enables one now to obtain a better idea of the magnitude of the undertaking than was heretofore possible. Briefly stated, the company takes water from the Niagara River about a mile above the falls and conducts in it a surface canal to a series of vertical shafts, down which it falls and then passes away through a tunnel having its outlet about a quarter of a mile below the falls. The power of the water developed in its fall through the vertical shafts is developed by turbines. Manufacturing companies are allowed their choice of sinking their own shafts and putting in their own turbines or of leasing any desired amount of power from the main company, which delivers it in the form of an electric current. The

Niagara Falls Paper Company has adopted the first method, and has contracted with a Philadelphia concern for turbines having a total capacity of 3000 horse-power under a head of 140 feet. The tunnel which leads away the water from these and other turbines was completed last October after being two years under construction. It is a horseshoe cross-section, 21 feet high and 19 feet wide, and is 6700 feet long. It is lined throughout with 16 inches of hard brick, set in hydraulic cement. The main power company is having two turbines of 500 horse-power each constructed in Philadelphia from plans prepared by Faesch and Piccard, of Geneva, Switzerland. These are to work under a head of 136 feet, making 250 revolutions per minute, and each requiring 43 cubic feet of water per second. There are two horizontal bronze revolving wheels in each turbine, one above the other and 10 feet 10 inches apart. The shaft to which they are attached is 8 1/2 inches in diameter and connects with a hollow main shaft 135 feet long and 38 inches in diameter, reaching to the surface. This main shaft carries a flywheel about 30 feet from the turbine to secure uniformity of speed. This wheel is 14 1/2 feet in diameter, weighs 10 tons and will have a speed at its rim of about two miles a minute.

PEARLS OF TRUTH.

Every one can master a grief but he that has it.

He that has lost his faith, what staff has he left?

To add a library to a house is to give that house a soul.

It is the sin that is considered safe that becomes most dangerous.

Every production of genius must be the production of enthusiasm.

It is only when you are all for God that God can be all for you.

There is not a passion so strongly rooted in the human breast as envy.

We seldom learn the true want of what we have till it is discovered we can have no more.

We attract hearts by the qualities we display; we retain them by the qualities we possess.

Cultivate not only the corn fields of your mind, but the pleasure grounds also.

The heart that is soonest awake to the flowers is always the first to be touched by the thorns.

He who muddles his stream of life should not complain if forced to drink of the dirty water.

One kind of happiness is to know exactly at what point to be miserable.

He who is false to present duty breaks a thread in the loom, and will find the flaw when he may have forgotten the cause.

Management of Capons.

A fancier writes:—There is nothing about the poultry business that requires so little attention or effort on the part of the owner as raising capons. They are rarely sick or ailing, always vigorous and hearty, are quiet and docile, and many more can be put in one house or pen with no fear of harm that would result from any other poultry. As soon as the fowl is caponized let him run wherever you wish to have him, and he will get along all right.

I usually put my capons in a pen or yard by themselves for about a week, feeding them on soft feed of any kind and plenty of water, but furnish no roosts. In a very few days the cut will heal over, and a little later the scar can hardly be found. In healing, some air may get under the skin, which causes the wound to "wind puff." When this happens simply prick the skin and let the air out, as it is a second's work, but it is not necessary to even do this. Nature will take care of it in time and find a way to let it out. After a week I let the birds go where it is most desirable for me to have them, generally putting them in the yards with other chickens, or letting them run at large.

Capons need no more care than other poultry do. Feed them all they want to eat, and keep their quarters clean. Simply treat them as you would any growing chickens, and the capon's growth will be surprising. The rapid growth of capons for the first few months is remarkable and very interesting. A poultry raiser wrote me that his capons gained three pound each in six weeks. Of course, the first growth is principally bone and frame work. When this is developed they then take on flesh and fat. I find it about as well to feed corn alone in winter, with bone and shell before them all the time. They are not great eaters, as, being quiet, all they eat goes to form flesh and fat. Only feed what they will eat, and you will soon have some ten pound capons to sell.

The London Night Watchman.

"I've sat about the streets of London in a box like this, with a big fire in front of me, for night on twenty-three years now," said an old night watchman, "and I could tell you stories that would fill volumes about what I've seen, for I've time to think a powerful lot during the slow hours of the night."

"No one sees so much of poverty in its last shifts as we do. You should see the poor wretches who come to warm their ill-covered bones at my fire, sometimes when its raining in torrents, or snowing so thick that you can't see two yards in front of you."

"Goodness knows what has become of many of them when they have left my fire, but I have given evidence at the inquests on four myself who have gone straight from that fire to their death—well-born ones, three of them. One poor chap, a mere bundle of rags, after warming himself, suddenly shoved into my hand an old and well-colored meerschaum pipe and an old pocket-book full of papers and rushed straight away and drowned himself. He had once been an officer in a Highland regiment, it turned out."

"As for people that had no proper business to call 'em out during the night, I've seen them, too. Early one winter's morning a rough-looking sort of customer stopped to fill and light his pipe, after taking off a pair of woolen gloves, at my fire. There, on the little finger of his dirty knobby hand, was a fine big sparkler. I knew it was a real diamond by the way it shone. I expect his conceit made him put it on his finger. 'Something wrong,' I said when I saw the ring, an' I spoke to the next policeman that passed. Sure enough it turned out that there had been a big burglary at a jeweler's not far off, and from his description, they got the man I had seen."

TIT-BITS.

Irish You Know.

Mr. O'Rafferty—And what did yer brother Duffy was the rale cause of his death?

Mr. Duffy—Me brother never knew the rale cause of his death, as no inquest was held on him.

In Woman's World.

First Lady—We ought to get salaries from the government.

Second Lady—How so?

First Lady—When we see this array of empty seats we are certainly lighthouse inspectors.

A Common Ailment.

Jones—Say, Scribber! Did you ever have writer's cramp?

Scribber—Yes. I have it nearly all the time.

"Is that so? Isn't there anything that will cure it?"

"Yes, about ten dollars would ease it considerably."

Hot Shot.

He—Well, you know, I judge others by myself.

She—Yes; but isn't that a rather low standard of judgment?

And She Believed Him.

It was nearly midnight when the young bride heard the front door softly opened, and as he came up in his stocking feet she dried her eyes and determined that the time for action had come at last.

"I his will never do, George," she said, with a steely glitter in her eye that sobered him on the instant. "Perhaps I wouldn't mind it so much in the years to come, but our honeymoon is barely over, and here you stay out nearly all night. Unless you promise to stop I'll go back to my father."

"Forgive me, my dear," he replied, bracing himself for the supreme effort of his life, for he knew the crisis had come, and upon the result depended whether marriage was to be a failure or a blooming success. "I know my conduct must seem cruel to you, but that is only because you know so little of men and their ways. All my life I have been accustomed to staying out all night. I can't stop suddenly, for the doctor has told me I have heart disease and that any sudden shock was likely to kill me. That's why, my dear, I must taper off gradually."

"Forgive me, George," she sobbed, throwing herself on his breast. "I have been very selfish. I know you try to do what is the best for you. Never again will I scold you, for it would drive me crazy if I knew I was the cause of your killing yourself."

Curiosity Gratified.

"Travel on this road party often" inquired the passenger with the long, slender pointed nose.

"Yes," replied the sleepy looking passenger on the same seat.

"Come to town 'most every day. I reckon?"

"Yes."

"In business of some kind, like as not?"

"No I work for another man."

"Dry goods business?"

"No. Wet goods."

"Saloon?"

"No. Fish market."

The inquisitive passenger was quiet a moment. Then he came at him again.

"Find it cheaper to live out o' the city?"

"No. Dearer."

"Rents are cheaper, ain't they?"

"Yes."

"Groceries and things don't cost any more, do they?"

"No. Cost less."

"Have to pay out too much for railroad fare?"

"Railroad fare doesn't cost me \$75 a year."

"Then what makes it dearer?"

"Running for trains. Wear and tear of shoe leather."

The long-nosed man ruminated on this a few moments and then said:—

"They pay bigger wages in the city than they do in the suburbs, don't they?"

"Yes."

"What might it be worth, now, to hold a job like yours?"

"The man I work for pays me \$20.99 a week."

"Always make the exact change?"

"Always."

"What's the idea of making it just \$20.99?"

"He pays me \$20 for my work and the 99 cents for minding my own business."

And the sharp-nosed man went to the other end of the car and took a seat on a coal box.

For Tired Horses.

The discussion of the question of the speed and endurance of horses which arose out of the recent long distance ride between Berlin and Vienna, has brought forth a large crop of devices and nostrums for "picking up" jaded horses and cattle. One correspondent writes that the orientals are particularly well versed in medications that have special virtue in such cases. He mentions specially the "gunjah," the dried cannabis plant which has flowered, and from which the resin has been removed. It is sold in bundles, about 2 feet long, and 3 inches in diameter. It is used by smokers, who derive intense enjoyment from its narcotic fumes. He first learned its value when administered to over-worked cattle, by witnessing its effects long before the railway period. A very arduous and difficult march was being performed on an unfinished road through a mountainous country. The oxen had had a long spell of continuous work and the road was precipitous, and foothold was so difficult to get that the cattle became exhausted and tottered about helplessly, unable to proceed. There could be no halt, for tigers and bears were all around. In this emergency the ever-ready and resourceful drivers, producing their stock of "gunjah," pounded up a handful for each bullock, mixed with sugar. The effect was almost instantaneous. The cattle picked up fresh heart and energy, and trotting on cheerfully, soon reached the encampment. Tincture of cannabis, diluted with water, is a valuable hypodermic injection for inflammatory diseases in horses. The native farriers of Western India are much given to the use of the croton bean, which is a drastic purgative, for horses. When it acts too violently a handful of gunjah is at once administered, and the catharsis is immediately stopped.