VOL. I. NO. 20.

I'VE GOT THREE SWEETHEARTS. | must not thing of such a thing. I have

I've got three sweethearts and I'm married man: Now think of something worse than that if any of you can;

My wife is pure and faithful, she's always good and true, And her hair's like burnished sunshine, her eyes are honest blue.

She's the queerest little woman, she don't mind this mix at all; One sweetheart "taught me how to pray

that He knows the sparrow's fall. She's old and wrinkled, bent and gray; love her like no other-One sweetheart that my wife don't mind

is my own, my darling mother.

The next one is a "terror," full of happy, childish glee, And the picture is a sweet one when he'

at his "grandma's knee." He calls my wife "his mother" and know him as "our boy," So I can love this sweetheart and my wife without alloy.

Oh, thou who guardeth the angels, hover them with thy wing. Grant all three Thy blessing in every lit-

tle thing; Guide me to know "the only way," so when my life is past I may join the woman, boy and girl at Thy "gates of pearl" at last.

THE REDEMPTION OF RALPH MORTON

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HEN Miss Amy Warden, only child of the wealthy back Anthony Warden, tripped into her father's office one December afternoon she was the embodiment of beautiful, healthful 18. Nodding kindly toward the clerks, who had for a moment ceased their scribbling, she approached the door of her father's private office. A privileged character, as she well knew, she turned the knob gently, intending to surprise him in the usual

As she peeped into the dimly lighted room she discovered at a glance that her father was not there; but his confidential clerk, Ralph Morton, a goodlooking young man of 25, was standing before the desk. For a space she was puzzled by the young man's peculiar actions-for he raised his hand twice to the side of his head, then, as if undecided, slowly lowered it again, and each time she caught the gleam of pol-



RALPH MORTON WAS STANDING BESIDE

ished metal as it flashed in the rays from the electric bulb. Then, as if fully decided upon his action, he partly turned his face toward her; but she, noting the tenseness of his white features, realized in a flash the awful import of his action, and darting across the room snatched the deadly weapon from his hand and held it behind her. For a space he stood, regarding with wild eyes the beautiful, terrified face before him, then, uttering a low groan, he sank into a chair and hid his face in his hands.

She stood looking at him, the colo gradually returning to her face; then she said, a wondering pity in her tone: "O. Mr. Morton! How could you think of such a thing?"

He slowly raised his head and met her pitying gaze wildly. "Why do you stop me, Miss War-

den?" he said, brokenly. "I am a thief! I caught the accursed fever of speculation and used your father's money. I prefer death to discovery and dishonor."

His eyes closed, as if blinded by her accusing gaze.

"And do you imagine this will save you from dishonor?" she said, gently, holding out the revolver. "O, Mr. Morton, do you not realize that it will only add to it? Will such an act restore my father's money or absolve you in the eyes of the world and-God?" Infinite pity shone in her eyes as she softly breathed the last word.

He did not look up, and she continued: "You are young and talented, Mr. Morton, perhaps above the average. The world is before you. Do you presume to dictate in this way to the tender mercy that has bestowed such priceless gifts upon you? My father may not overlook this, but there is one, at least, who will. How much money have you ta-used?" she concluded.

He threw out his hands despairingly. "'More than I can repay," he faltered. "Two thousand dollars at least." She remained silent so long that he ventured to look at her. She seemed to look beyond him, a smile like that of a pleased child on her now flushed face -the warmth of a high, noble resolve.

"Your case requires no such desperate remedy as this," she said, turning her face a little from the growing eagerness of his gaze. "Supposing that I-I replace this money, would-

He sprang to his feet, "No! no! Miss Warden," he cried, entreatingly. "You to make a business firm,

sinned: I must suffer."

"You must do as I say, Mr. Morton," she firmly replied. "My father, I know, would not forgive you; but that is no reason for sacrificing your future career. Besides, you can repay me some dav."

He regarded her through a mist of tears, then held out his hand. "I will accept your offer. Miss Warden-the offer of an angel," he said, huskily. But I must leave this place and redeem myself among a strange people.' She started a little, but, laying her soft hand in his, whispered: "It may be for the best; but, wherever you go, God be with you," and she left him.

Five years had passed by when Ralph Morton again entered the city of his past folly. He did not bring the proverbial fortune, but he had amassed competence which many less fortu-

nate might envy. During all this time he had never forgotten the sweet-faced young girl-his savior. Thrice had he written to her, but no answer came; and now, when he went to the old office, he was told hat Anthony Warden had failed three years previously and had died, leaving his daughter penniless.

He determined to find her if money backed by love, could do so; but all search was unavailing. She had disappeared, like many unfortunates, into that mysterious realm where despair,

perhaps, is the larger portion. "You will find her yet, Ralph," said his friend, Dr. Banks, to whom Ralph Morton had confided his story. It was bleak winter evening, and they were on their way to the doctor's house.

"Heaven will surely guide me to her, answered Ralph. As they turned into a side street a young woman a short distance ahead

stopped and uttered a low cry. A drunken ruffian had barred her path. He had already grasped her arm when Morton, running forward, planted a well-directed blow that sent him reeling. Ralph caught the young woman, half fainting, in his arms; then, as the doctor hurried up, he turned her face to the light. It was a thin, pale face, though beautiful-a beauty matured by

days of struggle and sorrow. Ralph Morton almost dropped the light burden as he gasped: "It is she-Amy! O, Fred, thank heaven I have found her at last!"

It was in the doctor's cozy house, after he and his wife left them alone, that he said: "You were my guardian angel once, Amy; will you continue to be such? The debt I owe you can only be repaid with a life's devotion. Will

you accept It, dearest?" And she whispered: "I believe I loved you then, Ralph; at least I was sorry to have you go."-Boston Post,

One of the marvelous accomplishments of the Utah Mormons is their beet sugar industry in the valley of the Great Salt Lake, where 18,000,000 pounds of white sugar are turned out each year. Cheap as sugar is, the Mormons make a good profit in the manufacture of it, and largely because of their ingenious device to deliver the juice from the vats to the factories, twenty-two miles distant. Instead of transporting it at what would be pretty heavy expense, the Mormons pump the juice from vat to factory in a threeinch pipe. This enables the juice to be made into sugar close to the producing center, and saves a large amount of noney that would have to be employed otherwise, in the transportation. The beet sugar industry of these people is in the hands of a company that apportions to each farmer the amount of land he may devote to the raising of the beet. The company pays cash dividends regularly of 10 to 20 per cent a year and dividends of something like 20 per cent on the stock .- New York

A Lingual Tangle.

Farmer Hornbeak-While I was at the village this afternoon I heard a drummer in Hopper's store say he had jest read that Hi Chang Lang-h'mthat don't sound right; Hang Ling Chi -no; Lang Chung Hi-eh-h'm-lemme see. It's Hang-no; Chi Lung Hangoh, pshaw;-Ching-no; Lung-

Mrs. Hornbeak-Mercy on us, Ezry! What in time are you tryin' to git off? Farmer Hornbeak-Why, I was jest goin' to say that Hing Lung Chi-oh drat it! Chang, Lang, Hang, Jang,

Dang, or whatever it is-Mrs. Hornbeak-Great day, Ezry What nonsense are you tryin' to recite! You talk like a dinner bell.

Farmer Hornbeak-I guess I do. for fact. I was tryin' to say the name of that great Japanese or Chinese statesman.

Mrs. Hornbeak-Oh, you mean L Hung Chang. Well, what about him? Farmer Hornbeak-I-I dunno .-Puck.

A Discouraging Entry. The performance of the Shakspear

ean drama of "Hamlet" was dragging tself slowly along. The time had come for the appearance of the ghost There was a slight delay, owing to the tardiness of the ghost in responding to its cue. The profound stillness that followed was broken by a loud voice in the front row of the main balcony: "Mamma, there are thirty-seven men down there with round white spots on

top of their heads!" And no stage ghost ever made its appearance under more discouraging auspices than the armor-clad phantom that came stalking upon the stage at that moment.-Chicago Tribune.

Occasionally a man refuses to drink beer unless his physician recommends it-or unless he thinks he ought to recommend it.

Two weak partners are seldom able

CHILDREN'S COLUMN.

A DEPARTMENT FOR LITTLE BOYS AND GIRLS.

Something that Will Interest the Juvenile Members of Every Household -Quaint Actions and Bright Sayings of Many Cute and Cunning Children.

In every conflict with foreign powers, some of those who perform the most important services are persons who for one reason and another have been compelled to remain at home. As a striking illustration of this truth, the Pilgrim Teacher recalls an anecdote of revolutionary times.

Luke Varnum lived in a small village among the Green Mountains. He was 15 years old and was lame in his left foot. So when every other boy and every man, old and young, shouldered his firelock and marched off to join General Stark and fight the Hessians at Bennington, Luke was left behind. He limped out and held the stirrup for Lieutenant Chittenden to mount, and then he had to stay at home with the babies and the women.

The company had been gone an hour and a half, more or less, when three men galloped up on horseback. Luke went down to the rails to see who they

"Is anybody here?" asked one of "Yes," sald Luke, "I am here."

"I see that," said the man, laughing. "What I mean is, is there anybody here who can set a shoe?"

"I think I can," said Luke. "I often tend fire for Jonas. I can blow the bellows, and I can hold a horse's foot. Anyway, I will start up the fire."

So Luke went into the forge and built fire. He hunted up half a dozen nails, and he had even made two more, when a fourth horseman came slowly down on a walk. "What luck," said he, "to find a forge

with a fire lighted." The speaker threw himself off the horse meanwhile, and Luke pared the hoof of the dainty creature and measured the shoe. He heated it white, and bent it to the proper size.

"It's a poor fit," he said, "but it will "It will do very well," said the rider. "But she is very tender-footed, and I do not dare to trust her five miles un-

Luke drove were those he had made himself. When the shoe was fast he said: "Tell Jonas that I lit up the forge and put on the shoe." "We will tell him," said the Colonel,

laughing, and he rode on. But one of the other horsemen tar-

ied a minute and said: "Boy, no ten men who left you to-day have served the country as you have done. That is Colonel Warner." And when we read how Colonel Warner led up his regiment just in time to save the day at Bennington, we can think of Luke Varnum, who bravely helped his country.

Little fingers, slim and nimble, Here am I, your friendly Thimble. (Germans call me "Finger-hat": Jolly little name is that.) Put me on and you will see What a helper I can be. Brother Needle's very fine-But he oft would puzzled be, If he had no help from me! When the cloth is stiff and hard,



Oft his headlong dash is barred, And he balks, and frets, and pricks.

Says, "I'm in a dreadful fix! This will never, never do-I shall really break in two." Then's my time. No fuss or rush Just a steady, patient push-And the stiffened fiber slacks, And the stubborn threads relax, And Friend Needle darts along, Singing his triumphant song, Yes, I may not be so keen, Nor so brilliant to be seen, But 'tis true that without m Ofttimes he would puzzled be. -Laura E. Richards.

Observation the Basis of Discovery. Bright-hued, soap-bubbles, blown from an ordinary tobacco pipe, were observed by Dr. Young, and suggested to him his theory of "Interference," and eventually led to his discovery relating

to the diffraction of light. Cuvier, when but a boy, was one day sauntering along the sands near Flousinville, in Normandy, when his attention was arrested by a cuttle fish lying on the beach. He picked it up. took it home, dissected it, began the study of the mollusca, and in time became one of the most eminent naturalists of modern times.

Aloisio Galvani, an Italian physiolo gist, was one day struck by a remark of his wife's, that the legs of some frogs that had been skinned for eating. and, by chance, placed near an electric machine, contracted every time a spark passed from the machine. The hint was sufficient. He at once began to make experiments, and finally discovered the electric phenomenon now called "galvanism," after him. Sir Samuel Brown had been thought-

fully studying the construction of bridges with the intention of constructing one across the Tweed, near where he lived. One morning, while walking in his garden, he observed a spider's net thrown across his path. Stopping. he examined it carefully, and the idea came to him that a bridge of iron ropes

or chains might be fashioned after the

spider's net and thrown across the

Tweed. The final result was the invention of the suspension bridge. While working as a quarryman Hugh Miller observed remarkable traces of extinct animals in the old red sandstone. He studied them, imbibed a taste for and a profound knowledge of geology, and became a distinguished geologist and author.

A Question Game. The leader of the game must put the following question to his right-hand neighbor, and also to all the players in

give her to eat?" If any player replies: "Potatoes, parsnips," the other answers: "She does not like them. Pay a forfeit." But if another replies, "Onions, car-

rots, veal, chicken," she likes them, and

"My cook likes no peas; what shall I

consequently no forfeit is required. The trick of this game is plain to be seen. It is the letter "P" that must be avoided. Thus, to escape the penalty of a forfeit it is necessary that the player should propose some kind of vegetable or food in which the letter "P" does not occur, such as beans, radishes, venison, etc.

Making It Worth While. Old Gentleman-My boy, don't you go to school?

Boy-Yes, sir. "It's a long time after 9 and here you are playing." "That's all right. We had a rather

late breakfast and mamma was afraid I'd be late, so she wrote me an excuse and I've got it in my pocket." Never Satisfied.

When a small boy gets five pocket

knives on his birthday anniversary he generally says he hasn't quite enough The Same Old Hurt. Kenneth (aged 3, very tired by a long

new again. "DAD'S" LIGHTNING STROKE.

walk)-Mamma, my shoes are getting

The Many Things that It Did Besides

-Curing His Rheumatism. "A few years ago 'Dad' Wright, of Salvisa, this State, had a very remarkable experience with lightning," said a gentleman from Garrard County, whose stock of good and true stories is always large. "His escape from Instant death at the time was miraculous. While hastening on foot through an open field derstorm he was struck squarely on the head by an electric bolt. It stripped the hair from one side of his brainpan, tore the clothing from his body, and made a crooked black stripe an inch wide down his left side from head to foot. When struck he bounced several feet in the air and fell back upon the ground

as if dead. The shaft entered the earth, throwing up a shower of mud. "At the time Wright carried in his hip pocket a loaded revolver. Every chamber of the weapon was discharged, the woodwork was burned, and the metal partially fused by the heat. His left shoe was ripped from his foot. The unfortunate man lay senseless and naked for several hours in the drenching rain, but, incredible as it may seem, finally regained partial consciousness and began to stagger uncertainly about over the field. He was in this pitiable condi-

tion when discovered. "He was soon recognized, taken in charge, and conducted to his home, where he was clothed and given proper

"As a result of the stroke his teeth and toenalls were loosened, his scalp almost denuded of hair, and his hearing permanently impaired. On the other hand he reaped an unexpected and decided benefit. For years prior to the occurrence here outlined he had been a great sufferer from muscular rheumatism, but never afterward felt a twinge of pain from that diseasy being completely cured of it by the verible shock.

"The dark zigzag streak along the left side of his body indicating the scarred path of the electric current, could never be altogther removed, although various methods were tried for this purpose. In a very short time Wright was up and around and as cheerful as a bird. From that time forth he was famous in that section as

I heard a good story the other day, and maybe you have heard it, too; but, anyway, it is worthy of repetition: "Dan Grogan was a prosperous co

ractor, and he had four boys, great, big, strappin' fellys, wid hands on 'em like canvas hams, an' wan day whin Dan dold these same boccos had a floral pilly made fer 'im, wid 'Papa' in purphel immartels ophon et. Phwat do yees tink av thim, 'Papa,' and thim wid hans es big es hams?

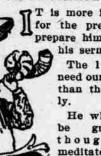
"Well, they tuck Dan, pace be to his soul, out ta the cimetary, and phwin they got 'im thayre the pall-bearers all walked along and dhropped a clod av dirt upon 'im, and thayer wholt gloven as well, and thin the undhertaker kim along wid the pilly. He bumped up against Mick McCharty and knocked off the first P on 'Papa,' and et left only 'A. P. A.' Thin they tellyphoned fher the caraner."-Denver Times.

Odd Hindon Custom.

Some Hindoos wear mustaches and beards, but all wear whiskers, which are shaved off at once when an adult relation dies. The shaving off of whiskers is thus a sign of mourning.

TRUMPET CALLS.

Ram's Horn Sounds a Warning Note to the Unredeemed.



He who would be great in thought must meditate.

creases the crool n the already crooked man.

The man is the measure of his money Crooked living makes the cross Chris

Polish cannot make a pebble pre

by serfs.

sistance.

The love of heavenly things makes a light heart.

It is life within that decides likenesses without.

make the way.

for a stone house. The present builds the palace or the hut of the future.

God gives us seed. The political campaign is either God's

things is the love of God. Scandal mongers must wade through mud to gather their goods.

Ance Christ migrated here. Some of us must have much care or we shall cease from prayer.

pin as truly as by a sword. Victories must be won in the will be fore they are won in the world.

The pursuit of pleasure is like prospecting for lead with gold spades. Men are willing to be slaves of some that they may be masters of others.

he will be sure to have heartaches. They who know God love Him, and they who love Him learn to know Him

with which he has been propelling our | single cow, to which may be added the boat, he strikes with all his strength the flat side on the surface of the water. Instantly the subterranean thunders of this under-world are let loose. From all directions come rolling waves of sound multiplied a thousandfold, receding, and again returning with increasing volume, lingering for many seconds, and finally dying away in sweet, far-away melodies. Then, when the last faint sounds have ceased, he agitates the water with his paddle, and asks us to listen. The receding waves. reaching cavities in the sides of the overhanging arches, break the stillness with sweet, bell-like sounds. Some notes, striking the keynote of the rocks. multiply the musical melody; some notes are soft and low; others are loud. almost with an alarm-bell clangor. This music, such as cannot be heard elsewhere on earth, gradually dies away in receding echoes, coming over the waters from far-away hidden chambers. The echo is not such as we hear above ground or in buildings, but a succession of receding waves of sound, lasting for about thirty seconds, and adding an indescribable melody to all sounds, whether from shouting or from instru-

mental or vocal music.-Century.

The leaf of the pineapple has a fiber which is destined to take a prominent place among the constituents of textile fabrics, according to statements made in the report of the United States Department of Agriculture. The report shows that both the wild and the cultivated plants of this description yield fiber which when spun surpasses in point of strength, fineness and luster those obtained from flax. Summarizing its value, mention is made of its usefulness as a substitute for silk and the human lightning rod."-Louisville as a material for mixing with wool or cotton-useful, too, for cordage sewing silk, or twist, laces, etc. In China it is used in fabrics for clothing for agriculturists; it is in request in India as material for stringing necklaces, and is the substance of the well-known pine cloth of the Philippine Islands. It is remarkably durable, unaffected by immersion in water, is white, soft, silky, flexible and long in staple. Samples cleaned, without washing, when twisted to the size of binding twine, have shown a breakage strain of 150 pounds. -The Pathfinder.

> Japan a Humane Nation. There is perhaps no more humane nawho have recently erected a monument in memory of the horses that fell in

> their war with China. Without Ease. The following stanza contains every

letter of the alphabet except E: A jovial swain may rack his brain, And tax his fancy's might, To quiz in vain for, 'tis most plain

The wisdom of the sage is simply the art of concealing his ignorance from

T is more important for the preacher to prepare himself than his sermon.

The lovable need our love less than the unlove

Prosperity in

clous. God will be served by sons and not

There is no righteousness without re-

Burning the ledgers does not loose from liability.

The will without the work cannot

It is foolish laying a mud foundation

Sometimes when we pray for bread

campaign or the devil's. The Alpha and the Omega of

Earth is one of the colonies of heaven

The heart may be plerced by a hat

When a man's acres are on his heart.

Echoes in Mammoth Cave.

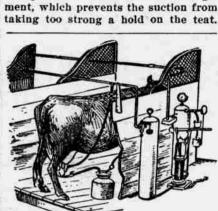
Our guide asks us to keep silent:

Pineapple Fiber Fabric.

tion in the world than the Japanese,

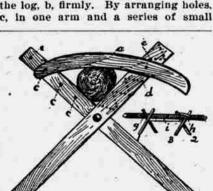
That what I say is right.

Another Milking Machine. Recently we illustrated a machine which would milk a single cow and transfer the milk to a can. We now show an apparatus which can be used to milk a whole herd of cows at once, needing but two men to operate the machinery. One man is stationed at the reservoirs to watch the indicators and operate the pumps when necessary, and the other passes along the stalls, attaching the teat cups and starting the flow of milk. At intervals are placed receiving cans, which are connected with the suction apparatus and also to the teat cups. Direct pipes suspended overhead connect the cans with the vacuum boiler, and the teat cups are also provided with a vacuum arrange-



WHOLESALE COW-MILKER This is accomplished by forming the teat cups with double walls and connecting the secondary vacuum system with the pockets inside the cups, the operator who attends the machinery preserving the proper vacuum in each set of pipes to do the work without injury to the cows. Valves are provided to start the milk flowing as soon as the cups are fixed in place. With the new machine a large herd can be milked in the time it usually takes to milk a advantage of cleanliness and the desir ability of a method which shall operate exactly alike at each milking. The ani mals soon become used to the machine, and stand as readily as when milked

by the old way. A Hold-Tight Sawbuck. The accompanying illustration shows how a sawbuck may be arranged so that a log of wood will remain perfectly stationary. The buck itself is made like any ordinary sawbuck, but on one end a lever, a, is attached and so arranged that it can be pushed down and fastened with the peg, e, thus holding the log, b, firmly. By arranging holes,



HOLD-TIGHT SAWBUCK. holes, d. on the other, the buck wil hold any size log. This lever should be of hard wood, 11/2 inches wide and 1 inch thick. A large wire nail will answer very well as a pin. By the use of this device the operator is not required to exert any effort in holding the log in place. The small figure shows how the sawing is to be done if the log is to be cut into four pieces. First saw off the cut marked g at 1, then the second cut h at 2, then finally saw the remain ing portion in two at i, 3 .- E. Dawson,

in American Agriculturist.

Oleo Formula. Notwithstanding the protests of the oleo trust and its friends in Congress, the various formulas for making oleo margarine have been made public, and they are at least interesting. One of the processes for making the kind of butter that is sold in Pennsylvania as a dairy product is thus described in the patent office records:

oils with caustic soda; then precipi tate the lyes; then applying chlorinated alkaline lye or chlorinated gas to the soap emulsion."

"The process consists in first forming

a soap emulsion of the fats or fatty

That sounds like a recipe for making soft soap, but when the color is added the result is gilt edge "creamery" butter for the Pennsylvania market.

Here are a few of the constituents of

the "advanced product of the farm:" Bisulphate of lime, borax, salicylic acid, benzoic acid, orris root, cotton seed oil, bicarbonate of soda, glycerine capsylle acid, alum, capsie acid, sulphate of soda, cows' udder, sulphuric acid, pepsin, tallow, lard, salt, cornstarch, butyric ether, caustic potash, castor oil, chalk, slippery elm bark, caul, oil of sesame, oil of sunflower

seed, olive off, turnlp seed off, broma chloralum, chlorate of pootash, oil of sweet almonds, oil of peanuts, peroxide of manganese, stomach of pigs, sheep or calf, nitrate of soda, mustard seed oil, nitric acid, dry blood albumen, sugar, butyric acid, bicarbonate of potash and caustle soda. One cent a pound is a very modest rate of protection for such a formidable array of mineral and organic poisons and abominations.—Philadelphia North Ameri-

A New Study at College. The Agricultural and Mechanical College of Texas has begun to show that it is worthy of its double name by establishing a new industry which combines in one the two interests of agriculture and mechanics. On June 9 they began work in a canning factory. and at the time the report was written they had put up 4,000 cans of peaches and intended to put up as many more. This year they have not made their own cans, but have bought them in Baltimore, Md., at a cost of 21/2 cents each delivered at the college. The cost of growing and gathering the peaches, peeling and canning them, and cost of cans is 11 cents a can. They expect to reduce this another year, and to have all the work done then by the students of the college. Now they do it all but the processing and general directions. The students are thus learning an excellent business, which may be made available almost anywhere in that land of fruit, and at the same time they are earning 121/2 cents an hour to help pay their college expenses. The plant in use this year had cost up to date the small sum of \$360. Possibly they may enlarge it and try other fruits and vegetables later on. It is an astonishing thing to think how this canning industry has grown, and how many canned goods are used. It is claimed that last year 3,000,000 cans of goods were put up in the State of Indiana alone, and 9,000,000 cans in the United States.

The Influence of Food. It is the food that gives the flavor to the milk, the egg, the flesh of animals or fowl, or we may as properly say the food and drink, for both are absorbed by the digestive organs and passed into the system. In our search for the cheapest food, or that which will produce the most, we are apt sometimes to forget that the quality needs to be considered for home use and for market. Good corn and its products gives a better flavor to all the above than any other food we know, and it gives to these products as much nutritive

ties as any other food that jectionable in flavor or in some other way. It is not a perfect food, or a complete food in all ways, but needs other foods with it, and one of the arts of the skillful feeder is to see how he feed as much corn as may be profitable without injuring the health of the animal. We all know how much better is the flesh of the steer or hog fattened on corn than on other feeds, and poultry, eggs and milk are also much better when corn is a large part of the diet than when cheaper grains are used, while many foods may actually give unpleasant flavors.

Deep Soil Needed for Roots. The Cornell Experiment Station showed by illustration in a recent bulletin the difference in form between beets grown upon a plot where the subsoil was well loosened so that roots could penetrate it easily, and those grown where the subsoil was hard. In the former case the beets were smooth and a regular taper from just below the crown downward. Those on the hard subsoll were shorter and were obliged to branch out a number of side roots, making them hard to handle and less valuable for sugar making. They also grow more out of the ground. A similar result was noticed when fertilizer was used for growing beets. The same thing must be true of many other root crops, and they suggest that if potatoes had a more mellow and well drained soil beneath the seed they would not be so likely to expand upward and grow out of ground. They may be correct in this point, but we have thought that the growing out of ground was a matter in which the variety made most of the difference, some kinds requiring much hilling up to prevent out growing, while others put their roots down deeper when on the same soil.

Lightning in the Potato Field. A London dispatch says: Experiments in growing potatoes by electricity have ben undertaken by the Irish Agricultural Board. Father Glynn, of Athea, Limerick, in charge of the experiments, studded a potato patch with lightning conductors connected by wires running through the patch. The result was an increase of 80 per cent in the yield in the section so treated. Should the official experiments bear out this experience, a solvent for the chronic distress in the west of Ireland will have been found. Horace Plunkett, M. P., Vice President of the Agricultural Board, says: "This most remarkable phenomenon may be the forerunner of a revolution in agriculture. The evidence furnished and the genuineness of Father Glynn's experiment are incontrovertible."

Hay Tea for Calves.

Tea, which is quite satisfactory for

rearing young calves, can be made by boiling hay in a reasonable allowance of water. The soluble nutrients of the hay pass into the water under such treatment, and are palatable and nourishing to the young calves. To the hay tea add mixtures of either linseed meal, oatmeal or middlings cooked in gruel form. For calves a few months old, feed any and all the grains just named, according to the wishes of the animal, for prices for feeding stuffs are not important in comparison with thrifty animals and satisfactory gains, -W. A. Henry, Farmers' Advocate.