AGRICULTURAL.

Scours in Young Pigs.

When young pigs have scours it is an indication that they are being allowed some kind of food that is injurious. The remedy is to change the food, allowing only warm milk thickened with equal parts of bran and cornmeal.

Influencing the Color of Butter.

The color of butter is largely influenced by the food. Butter is sometimes white and at certain seasons it may be a golden yellow. The coloring of butter by artificial means, such as the use of annatto, will never be necessary where carrots are grown and fed regularly. Cows that receive a variety of food at all seasons of the year will usually produce yellow butter.

A Feeding Pen Gate.

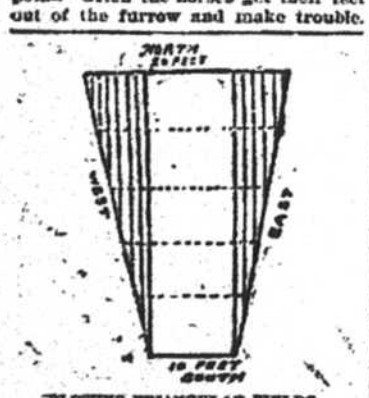
When there are any great number of pigs fed in the same pen it is invariably the rule that the larger pigs get the greater share of the feed, and in

A GATE FOR FEEDING PEN.

consequence they grow better and the smaller, less active pigs get less feed and are jostled about and fall farther and farther behind. By using a gate, made as portrayed, in the feeding pen, the large, strong pigs will be hindered in no way from getting their share, and the smaller ones will be given an equal chance, or better. The gate (c) is fastened to the lifting lever (b), which is held at the desired height, admitting the desired sized pig by a pin (a), through the posts and through the lever. The lower hole admits the smaller pigs, but the larger sized cannot squeeze under. When the little pigs have satisfied themselves, lift the gate another hole and admit the next grade, and so on. In this way the smaller pigs will not become stunted by being crowded away from the feeding trough or floor.—J. L. Irwin, in Farm and Home.

The Art of Plowing.

Owing to creeks and other causes there are many irregular shaped fields which are oftentimes plowed by going around until finished in the centre. This centre is often a triangle. I never saw a plowman but what went around this triangle until it was at last plowed out. To finish this way leaves a large, open furrow, and necessitates turning square around at the point. Often the horses get their feet out of the furrow and make trouble.



PLOWING TRIANGULAR FIELDS.

But the worst feature of it is the tramping given the plowed ground, especially if in the spring.

Few, unless they have tried it, realize the injury done by tramping plowed ground that is a little wet, which it often is in spring. The sketch shows how to plow out the land with but little tramping, and by making half turns instead of whole ones at what would be the point if plowed out until done. By plowing as per shape of diagram, five extra rounds will bring sides to a point. It is ten feet or ten furrows wider at one end than at the other. You are, say, at the north with a left hand plow. Drive south to dotted line. Throw out, turn gee and follow the dotted line. Then turn gee and plow back, then east, then south, and so on. By throwing out and turning and driving across on dotted lines you are turning on the unplowed ground. When you have plowed off the five furrows on each side, your land is the same width at each end and in good shape to finish. —Lucious Stockwell, in Farm and Home.

Cheese Making on the Farm.

The articles needed for making dairy cheese are from six to twelve cows and tub or vat that will hold two milkings. If of wood the night's milk would be warmed in the morning to the proper temperature of eighty-four degrees. Or one may have a jacketed or double tin tub. Then all the milk can be warmed by pouring hot water in the jacket and drawing it off, when the milk is sufficiently warm. A whey tub and a pair of cheese tongs to lay across the tub are also needed. Next comes the cheese knife (which may be a wooden one) to cut the curd at the proper time so as to start the whey, then the cheese basket, which any tinman can make and cut inch holes all over the bottom and sides of the basket. A thin strainer cloth must be placed inside the basket to receive the curd, which is carefully dipped into it at intervals after standing a proper time for the whey to begin to separate from the curd.

For a dipper a piece tin like a milk skimmer is used. It must be there at as not to break the curd. A cheese hoop, some cheese boards and a cheese press complete this primitive equipment. The sizes of dairy cheese that sell best are those that weigh from fifteen to twenty-five pounds each. If there are no hoops or press at hand doubtless any dairy supply house could furnish them.

Only half the battle is won when the cheese is made and out of the press. The curing is a most important matter, and but few farmhouses have suitable rooms for this purpose where a low, dry temperature can be kept in hot weather. If any one intends to make a business of making dairy cheese a small room should be fitted up with an ice rack in the centre and water drainage from the same. In making dairy cheese from a large number of cows a cheese room or cheese house would be fitted up with factory apparatus and run as a factory, only on a smaller scale. And the cheese made by any factory process would be much like the factory make, but with the advantage of only one herd of cows furnishing the milk and that of uniform quality.—Alpha Messer, in Orange Judd Farmer.

six or eight weeks after blossoming. Many other fruits are better for thinning; this is particularly true of apricots.

The average grower of apples may keep the bearing surface within proper limits by judicious pruning. Thinning apples by hand is not a paying business with present market conditions. The time is coming when fruit growers will better understand their work, a more uniform grade, better in quality, grown and marketed by business methods. This is what our horticultural societies are working for, to place a better product upon the market, and it is reasonable to suppose that higher prices will follow.—F. L. Reeves, in American Agriculturist.

Hill Culture of Strawberries.

Many years ago I owned a small fruit farm near the city of Cleveland, Ohio, in the midst of an extensive fruit-growing district, and had remarkable success one year with hill culture of strawberries. After enriching the land with a coat of stable manure drawn from the city, I planted a small plot, little more than one-eighth of an acre, with Jucundas, which were then famous because of the unique success of James Knox in raising them on the hill-tops above Birmingham at Pittsburg. I had visited his extensive plantation, and purchased at a high price this famous variety from one of my neighbors, believing from Mr. Knox's success that they would be profitable. The soil was a dark, gravelly loam in an old orchard. The planting was in the spring. All runners were cut off during the summer, and the plat was well cultivated with the hoe, the plants being eighteen inches apart each way. The growth was very strong. During the following winter they were protected by a light covering of straw.

The next summer I had them carefully gathered by pickers from the city, in baskets holding four quarts with handles. These baskets were rounded up, and all the stems were turned down on the top of the basket, so that no green leaf or stem was visible. I had the first picking taken to a fruit dealer on the "Square," near the wealthy residence portion of the city, whose first offer was $1 a basket.

When the second picking was taken the dealer said they were all sold in advance at $1.25 a basket, and if I could have had three or four times as many, the firm would have been glad to obtain them at $1 a basket. They were declared to be the finest lot of strawberries ever seen in Cleveland market. I sold from that small plot $325 worth of strawberries during that first year's marketing.

The second year they produced well, but not as fine berries as I might have raised from Wilson plants, cared for as my Jucundas were the preceding year. The person from whom I purchased the plants had a large plat of Jucundas — probably two or more acres—planted on clay soil, well underdrained; but they were very unsatisfactory, as the berries did not ripen, but matured in size while green in color, and they were usually wedge-shaped. My berries were finely formed, the color dark, rich and uniform, and as glossy as though they had been varnished. The flavor was remarkably rich, almost spicy and vinous, while those raised on clay soil were comparatively tasteless. I believe that any one having a gravelly or sandy loam might have equally as fine success as myself if they would plant Jucundas on very rich soil, eighteen inches apart each way, and keep all runners cut off.

This variety has proved so uncertain that I rarely see it advertised, but in appearance and in quality I believe they are not equalled by any other variety when they are produced in their best form. My crop would average one and a quarter inches in circumference. Parties who purchased them sent them to friends in Boston, Washington and New York City.

I sold the fruit farm before I had an opportunity to try another experiment with them.

If I shall again have a chance with a comparatively loose soil I intend to repeat the experiment, but I have not had that opportunity. After one year's heavy crop I should plow the plants under, as they are exhausted in ripening an enormous crop. — Donald Versley, in the Country Gentleman.

It is said that the net annual profit derived from the cultivation of tropical fruits in Mexico ranges from 100 to over 200 per cent.

Economy of Good Roads.

How shall we secure good roads? How shall we save the immense sum now being worse than wasted? Manifestly it will require a great outlay, but the outlay will not be greater than we are now paying without receiving any benefits whatever. Take the amount we now pay by reason of bad roads and apply it to the building of good ones, and we will have an investment that will yield greater returns to the many than any other that can be made. This improvement of our roads ought to be done by the States, by the counties, by the districts, by individuals, by the General Government or by the united action of several or all of these agencies. If this work is to be done by appropriations of the Legislature, these appropriations must be made on a liberal scale. Mississippi appropriates nothing directly for this purpose, because prohibited by the Constitution, but authorizes the counties to do so. Some counties levy a few cents on the $100, about enough to pay the salaries of the officers intrusted with the management of the fund. A certain number of days' work is also levied, running from five to eight, and those upon whom this tax of labor is levied usually have the least interest in the betterment of the roads, and work in a perfunctory manner so as to discharge as easily as possible the obligation. Districts may not levy a tax under the Constitution of the State of Tennessee, however much they may desire to do so. Under the operation of our road laws there is enough waste of time and money to build a section of good roads every year, if it was all levied in money and its expenditure properly directed by competent road builders. But it may be set down as certain that we will never get good roads under Mississippi's laws unless these laws provide for a tax by the State, by the counties, by districts and one the individuals mostly benefited by the construction of the roads.

Where We Are Lacking.

In almost every material thing the United States takes first rank except in the matter of roads. In this respect it is far behind the most enlightened nations. In all the States some good roads have been built, but would it not add immensely to the growth and prosperity of this country to have its highways improved so as to be in harmony with all its other great improvements? It is the one thing in which we are still lingering in the unrelieved darkness of the Middle Ages; it is the one blot upon our executive of material progress; it is the one thing that would benefit every man, woman and child in the United States, and yet we hesitate to do it.

Objections are made by many that it is not the duty of the General Government to aid in building roads; that if it did it would place upon the General Government the responsibility for the welfare of the people. But is not the General Government responsible for the welfare of the people? The Constitution gives authority to build roads for postal service. Why not, then, build them? The improvement of our rivers is done for the welfare of the people. Why should not roads be built for their greater welfare? Both are highways, one by water, the other by land.

How New Jersey Does It.

The New Jersey law is well worth a trial in the Southern States. It provides that the roads of a township be placed under the management of the township committee, and money be raised by township bonds for grading, macadamizing and improving the same; bonds to be authorized by vote of the annual town meeting.

The Board of Chosen Freeholders of any county may designate certain roads as county roads, and improve the same by the issue of county bonds.

The State shall pay one-third of all cost of road improvement so authorized by the Chosen Freeholders, within certain limitations.

Whenever the owners of two-thirds of the lands fronting on any public road will undertake to pay one-tenth of the cost of improving such road, it is the duty of the Board of Chosen Freeholders to cause such improvements to be made.

All road taxes are paid in money.

Under the operations of this law New Jersey has built more good roads in proportion to population than any other State in the Union.

Convict Labor Utilized.

D. P. Hutchinson, President of the Board of Trustees of Charlotte, N. C., testified before the Industrial Commission in Washington concerning the successful effort made by Charlotte to establish good roads in the surrounding country. He said that ninety miles of macadam roadbed had been established at a probable cost of $250,000.

Convict labor, he said, is used in constructing the roadbed, as free labor would cost from thirty to sixty per cent. more. The saving in cost to rolling stock was more than equal to the cost of the roads, and the value of farming and other lands lying upon the improved highways has been enhanced fifty per cent. by the new roads.

A celebrated English physician asserts that the increased height and weight of English and Americans in the last half century are chiefly due to the increased consumption of sugar.

ARP ON MARRIAGE.

What Kind of Girl Should a Young Man Lead to the Altar.

LOVE IS THE GIFT OF THE LORD

Evils of Marrying Cousins— Professor Connor, of the Institution For the Deaf, Gives Figures.

When a young man falls in love and resolves to get married I reckon it is a good thing that he is reckless of the consequences. I was, I know, for I never thought of anything except the pretty girl and how happy I would be to get her. I had no thought of trouble or poverty or grief or war or death. The time was far, far away when the silver cord would be loosed and the golden bowl be broken. As for the girl, she is more reckless than her lover, even though her peril is far greater, for hers is to be the pain and suffering, the care and anxiety—the night watching and sometimes the broken heart. It is a mystery to me how the mother endures it all and holds up her head and keeps her strength. But love for her offspring, maternal love, sustains her. It is the gift of God. There was a marriage in our town the other day, and as the crowds gathered at the church our neighbor, Mrs. Felton, stopped in the veranda to rest and see the battle from afar. She was, as usual, merry and say by turns—sometimes the tears were glistening in her eyes and soon she laughed merrily and showed her pearly teeth. When the bridal carriage arrived she gave a material sigh and whispered, "Poor things, they little know what is ahead of them." Suddenly she branched off into a story about her little pet mule colt that is now her daily comfort. "It watches me at the window," she said, "and when I go out it runs to me and lays its head on my arm and almost nestles in my bosom. Mary's lamb was not more loving. It bites and kicks at everybody else, but runs to me fawns upon me with perfect adoration." She laughed again, but all at once the corners of her mouth drooped to an angle of 45 degrees and her voice trembled as she said: "But, major, I have at last come down to hard pan and misery in my old age. No book, no help of any sort, and though yesterday was my sixty-fourth birthday I had to pull the buggy down to the branch and wash it. Oh, my country!" She cried a little, and then laughed a good deal more. Pearly tears and pearly teeth are attractive features in a woman. Nevertheless, between petting mule colts and washing buggies she still finds time to plead for the education of the poor country girls of North Georgia.

But what kind of a girl should a young man marry? Of course, she must be born of respectable parents, she should be virtuous, she should have a good-loving disposition and a fair education. She should be healthy and have no taint of her lover's ancestral blood in her veins. All of these qualifications have been discussed and treated over and over again, except the last. I am inspired to say something about that because its importance has long been overlooked—neither poets nor philosophers nor scientists have written upon it nor given any warning. A letter recently received from a young man in Mississippi asks if there is anything wrong in a man marrying his cousin. Yes; very, very wrong. The answer is found in the records of the asylums for the deaf and dumb and blind. Their chief patronage comes from the intermarriage of cousins. These institutions cost our state about $75,000 a year, and half of the expense could be avoided if the intermarriage of cousins was prohibited. I have not the reports of the blind asylum before me, but I know of three blind children of one family who were sent there, and they were the offspring of parents who were cousins. I know of five children of one family who were sent to our deaf and dumb institute at Cave Springs. Their parents were double cousins. They had but one child who could hear and speak. She was a good-looking country girl. She married a clever young man who hauled wood for me. Soon after his marriage he moved to Texas and hired to a cattle man, and was so faithful in his service that in a few years he bought an interest in the ranch and prospered. I met him at Waco sixteen years after he left Georgia, and he was said to be worth $100,000, and his two elder daughters were at a boarding school at Waco, 12 miles from his home. He had six children, and, alas! one of them was a mute. The taint had cropped out in the second generation.

Professor Connor, the faithful and long tried principal of our deaf and dumb institution, has tabulated the parentage of his pupils for many years, and reports that in 26 families producing 48 mutes the parents were first cousins. In 12 families producing 19 mutes the parents were second cousins. In 11 families producing 15 mutes the parents were third cousins. Altogether there were 97 mute children of parents closely related.

Of 400 deaf mutes 193 had deaf parents, and many of these deaf parents are no doubt the offspring of the intermarriage of cousins.

Among these 400 pupils 59 marriages have occurred and there have been born to them 116 children, 89 of whom can hear and 2s are mutes. In 19 of the marriages there were no children born. Now, after one, two or three mutes have been born in succession to parents, it would seem a sin, if not a crime, for them to have more. The law should prohibit it. But if this cannot be done after marriage, the remedy for the future is to prohibit the intermarriage of cousins—yes, and second cousins. To be born deaf or blind is a sin against the child, and to have it supported by the state is a drain upon the treasury that might be avoided.

But being deaf or blind is not all the evil that follows these incestuous marriages. If the children are not deaf or blind they are generally under some physical disability. They are consumptives or epileptics or idiotic, and pass through life and leave no sign. Fortunately most of such marriages result in no progeny.

"Oh, well," some say, "the Levitical law did not prohibit it." No, it did not and I reckon that Cain married his sister. We know that Abraham married his half sister, and no doubt that is why no children were born to them except one by grace in their old age.

But it is said that the Roman laws and the laws of England permit such marriages. Yes, the Roman law did until Pope Alexander II stopped it and prohibited first, second and third cousins from intermarrying. The laws of England permited such marriages because the kings and the nobility wanted to keep the crown and the titles and their estates in their families. And so our American people, who have patterned after English law and precedent for more than a hundred years, have been reluctant to make any change in this regard.

But the question is now coming to the front, and the time is coming for a change. It seems now to be an established and universal rule that these marriages entail upon the offspring evil consequences, bodily or mentally, or both. The evil effect of what is called "breeding in" among animals leads to the conclusion that it is an universal law. Good stock, blooded stock, is not permitted in that way. Heard a conceited man declare that he was descended from the Carrolls, of Carrollton, in old Maryland. Suppose he did. That was six generations back, and would give him sixty-four ancestral fatherrs and mothers, and hence he had only one sixty-fourth part of old Charles Carroll's blood in his veins. I know a lady who boasts that her father could trace his lineage back to Cromwell. That was eighteen generations back, and would give him 512,000 ancestors—not much of Chomwell's blood in her. It is astonishing how rapidly the ancestral tree widens. Two generations back gives a man only four great-grandfathers and grandmothers, but twenty generations gives him over a million. Just think of it, young man, and quit bragging about your ancestors, for there are over a million different strains of blood in your veins, and no doubt some of it is bad—very bad. My wife's grandfather was a Holt and his grandfather was a Randolph, and his grandfather was a Peyton and his was Lord Rolfe, who married Pocahontas. That was ten generations back, and gives my wife 1,024 ancestors, and therefore, she has 1-1 024th part of Poky's blood in her veins. Mightly slim strain, it seems to me —not much Injun about her. One day I ventured to ask about the other 1,023 parts that did not come from Poky and she never said anything, but looked at me in a peculiar tone of voice that reminded me it was none of my business. But I honor a noble ancestry. I used to think that maybe I descended from Captain John Smith, but on investigation found that he never was married and had no children to speak of.—Bill Arp in Atlanta Constitution.

PROMINENT PEOPLE.

Alfred Austin is sixty-six years old.

Robert Barr, the novelist, was formerly a school teacher in Canada.

Lord Milner, the "Man of Destiny" in South Africa, is engaged to be married.

The Duke and Duchess of Cornwall and York will visit Newfoundland October 21.

The corporation of Glasgow has decided to confer the freedom of the city on Andrew Carnegie.

President Loubet, of France, is rejoicing in the birth of a son to his daughter, Mme. de Saint-Prix

Prince Henri d'Orleans, elder son of the Duc de Chartres, died at Saigon, Cochin China, aged thirty-three.

Count Tolstoi is going to the Crimea shortly, the Ministry of Railroads placing a special car at his disposal.

Rear-Admiral Sampson will be relieved of command at the Boston Navy Yard soon by Rear-Admiral Mortimer L. Johnson.

President McKinley has accepted the invitation to attend the National Grand Army of the Republic Encampment in Cleveland.

General Baratieri, who was in command of the Italian force in East Africa when the troops were defeated by the Abyssinians in 1896, is dead.

Campbell E. Waters, professor of chemistry at Connecticut Agricultural College, has resigned to become assistant professor of chemistry in Johns Hopkins University.

The Russian Emperor does not believe in the eight-hour day, so far as he is concerned. He works many more hours, and seldom retires before one or two o'clock in the morning.

Marquis Ito, formerly the Prime Minister of Japan, has been ordered by his physicians to take a sea voyage, and he will shortly start for the United States, where he will make a brief stay.

How Sea Turtles Feed.

The study of sea turtles is a most interesting one. In order to get rid of the parasites that cling to their shells they often enter fresh water streams to enjoy a bath, but they are extremely timid and take fright at the least noise. The hunter knows, however, that the turtle feeds in brackish streams, where the tide falls rather low and where the turtle grass grows in greater profusion. The turtles cut great quantities of the grass and there roll it into a ball, cementing it with the clay in which the grass grows; and in this way, when they have managed to amass a goodly supply of provision, they wait for high tide and float away seaward, feeding as they float. The professional hunters are quick to detect these balls, and just the moment they do so they set their seines and send their peggers, as the men are called, in search of the feeding shoals. Men are not the only enemies the turtles have, however, for bears, raccoons and other animals native to Florida destroy great numbers of them.—*Baltimore American.*

SCIENCE & MECHANICS

A Paris newspaper announces the invention of an instrument called the topophone, which registers sounds too faint for human hearing, and which will enable navigators to determine the exact position of other vessels in a fog.

One of the simplest, cheapest and best sterilizers is sunshine, and it is important to allow as much sun in a sick room as possible. The same rule is applicable to the rooms of healthy people. The good effects of "sun bathing" in the treatment of convalescents is ample proof of the utility of the rays of the sun for therapeutic purposes.

One of the professors at the Pasteur Institute in Paris has discovered a microbe that breeds a pestilence among rats. Specimens of it have been tested on farms and in warehouses with success. In one-half the cases the whole colony of rats were destroyed; in other cases, the number was greatly reduced. Thus science will take the place of nature, and the occupation of the cats will be gone.

An instance of the transformation by scientific means of a deleterious into a useful substance is furnished by a process recently invented in Germany, in connection with the manufacture of superphosphate fertilizer where apatite is used. The large volumes of hydrofluoric acid that are given off seriously contaminate the atmosphere, but by the new process these gases are recovered in the form of fluosilicic acid, which is used in the manufacture of artificial stone for hardening soft limestone and sandstone, and for other purposes.

Under certain conditions there may be seen in the night sky, exactly opposite to the place where the sun must then be, a faint light, rounded in outline, to which the name "gegenschein" has been given. It has always been a mystery to astronomers, but Professor Pickering has suggested that may be a cometary or meteoric satellite of the earth. He thinks it may be composed of a cloud of meteors, 1,000,000 miles from the earth, and revolving around it in a period of just a solar year, so that the sun and ghostly satellite are always on opposite sides of the earth.

Professor Standfuss, of Zurich, has been studying the effects of solar light and temperature on butterflies. More than forty thousand butterflies were subjected to close examination. Slight degrees more or less change the markings and looks so much that they take on every appearance of having been born in a warmer or colder climate. On one occasion, it being very cold in Switzerland, a butterfly common there suddenly began to look like a butterfly from Lapland. Others subjected to higher or lower temperature changed and looked like butterflies from Cyprus or Syria. The experiments, which are to be continued, led to the production of butterflies of an entirely new species, some being of a very beautiful description.

Soda as Fire Extinguisher.

"Druggists generally realize the value of soda fountains in extinguishing fires," said Chief Musham, of Chicago, the other day to an Inter-Ocean reporter. "They have not, however, carried the idea very far. If each soda store which has a fountain were supplied with a slender line of hose, which could be attached, many a fire which afterwards grow to serious ones could be extinguished promptly. An average soda fountain can throw a small stream of water ten or twelve feet. It carries a pressure of from 150 pounds, which is enough for extinguishing purposes.

"Many an incipient blaze has been extinguished by the use of a common siphon. The great point is to get at the flames at the beginning. If soda fountains were provided, with attachments to which it could be coupled to the water main, a saving of thousands of dollars in small fires could be effected every year."

Amusement of Boer Prisoners.

The Boer prisoners at St. Helena amuse themselves in many ways. They are very fond of cricket and football. They have a recreation hall, in which their musical club frequently gives concerts. They have among them a musical composer named Schr[illegible] who claims to be a collateral descendant of the great composer. He has written a Boer hymn since his captivity. There are many tradesmen among them, and they are constantly employed to ply their trades. They make napkin rings from beef bones which make fine walking sticks, for which they are granted material from the Government forests.—The Photographic Times.

"Thackeray Street."

Another new Kensington street name, says the London Chronicle, has literary interest. The improvement between Charles street and Kensington Square has been named Thackeray street, in honor of the author of "Vanity Fair," who lived for eight or nine years in Onslow Square, close by. At the house which he had built for himself at No. 2 Palace Green, Kensington, he died on Christmas day, 1863. Apparently there is no other street in London bearing his name, though a large temperance hall in the Bloomsbury district has been named the Thackeray, and has been followed by a Kingsley.