

EVENING AT THE FARM.

Over the hill the farm-boy goes. His shadow lengthens along the land. A giant staff in a giant hand; In the poplar tree, beside the spring. The katydid begins to sing; The early dews are falling; Into the stone heaps darts the mink; The swallows skim the river's brink; And home to the woodland fly the crows. When over the hill the farm-boy goes, cheerily calling. "Co', boss! co', boss! co' co' co'!" Farther, farther, over the hill. Faintly calling, calling still. "Co', boss! co', boss! co' co' co'!"

THE MORALS OF PETER.

The cases were rather colorless this particular morning, it seemed to Judge Horton. They were of vital import to Mrs. Archer, who sat as near as she could get to the rail which surrounded the court officers. She watched Judge Horton handle parents, guardians, children, like a wise, tender big brother. Here was no majesty of the law, but only the protection which law is meant to provide. He listened to the complaints of parents, truant officers, and policemen, before he heard the child's side of it. He insisted that the child's story should have the same respect granted the grown-ups' story. Now and then Mrs. Archer had to fight back her tears. A case was called. A big officer came into the room, leading by the hand a boy of five, if such a demonstration of smiling happiness and trustfulness could be called merely "boy." He was sturdy and unafraid. His hair was tow color, his cheeks were bright pink, his eyes as blue as the Lakes of Killarney. But his main personal asset was his smile. It began in his eyes and spread to his toes. He fairly exhaled smile, like an aura! Everybody in the room answered to it. "This is a bye that's got no home, Yeh Honor. He lived with a woman, said to be his mother, at 10 East Strate. The poor thing died yesterday, an' the neighbors handed the kid over to me, sor."

and live with her. Would you like that?" Mrs. Archer held out eager hands. "Oh, Peter, won't you come?" He looked at her earnestly, his cooky held firmly in his grasp. "Have you got a horse?" he asked unexpectedly. "Yes," she replied. His smile enveloped them. "All right, I'll come," he said, and proceeded with his munching of the cooky. Mrs. Archer held out her hand and he put his small fist in it confidently. "Of course, you realize, Mrs. Archer, that you run some risk in his inheritance and the kind of life he has known. But he is young enough and healthy enough to make over into almost any pattern, I should say. I hope he may prove a good investment." "Oh, I know he will. I cannot thank you enough for having given me this opportunity, Judge Horton." "Don't thank me. There is an old proverb that says, 'If each man would heal one, the world would be sound.' Come back to me if you need any help with him. Peter will you be a good boy and make Mrs. Archer glad she found you?" "Sure," said Peter with conviction. They both laughed, the judge shook hands with them, and Peter went off happily with his new parent, saying, "Where is the horse?" The advent of Peter into the Archer household was an event of great importance. In the first place, he was the successor to a much loved English bull terrier, killed by an automobile. At the time of that tragedy, six weeks before, Mr. Archer had said: "This is the third dog we have loved and lost. There is no use getting our affections all tied up in a new dog, and then having some cursed chauffeur run over him. I know I've always opposed the idea, but we must have something young about the house. We'd better get hold of a kid of some sort." All of Mrs. Archer's childless life had been centered in the hope that some day John Archer would say just those words. In the weeks that followed she marched through endless orphan asylums, homes for the friendless, founding retreats. She saw and talked with numberless youngsters: there were sulen children; there were craven institutionalized, travesties of childhood; there were everywhere little creatures averse to please, and so effect an escape. They were pitiful beyond all belief. But down in her heart Mrs. Archer nursed the dream that when the right child came she would know him. So it was that, on her first day in the Juvenile Court, Peter had walked in and claimed his own. But after Peter had become so inevitably hers, she began to wonder whether John Archer would agree to this impulsive feminine method of selection. He had ideas about the history of forebears of any child they might adopt. The one cmen she felt to be propitious was Peter's evident interest in horses, for horses and dogs were a leading passion with John Archer. Womanlike she set her stage for the meeting of the two. She bought Peter a new outfit of clothes before she took him out to the suburb which was to be his home. She restrained her longing to put him into picturesque garments, because she knew that was not the kind of son John Archer wanted. An hour before the head of the house was due to arrive, she began on Peter's toilet. She gave him a bath, she robed him in his new fine linen, a white shirt, blue knickerbockers, socks and patent leather shoes. He protested at the socks, but when she assured him that they were just what men wore, he submitted. He underwent the flowing blue tie, but she wheedled him into it. He certainly was a handsome, upstanding lad, and her heart was satisfied when she settled him in the library, with a new picture book, to await the inspection of his other parent. When she heard John come in, she ran down stairs, her cheeks flushed, her heart beating, as it did when she was a bride and his home-coming was the great event of the day. Greetings over, she put her arm through his and led him gayly toward the library. "John dear, I've got a boy—don't say a word until you see him. He's— he's—Peter!" she called softly. No answer. "Peter!" Still silence. There was no one there. "Why, where is he? I told him to stay here," she said anxiously. "Just a minute until I ask Mary." Mary, when summoned, thought she saw a boy out by the stables. Maybe that was Peter. "Go and see, Mary; and if it is, bring him in at once. And, Mary, if he's dirty, wash his face before you bring him in." "Never mind his face," objected Archer. "Now let's hear about all this." Mrs. Archer told him the story, listening all the time for the advent of the hero. "But you don't know one single earthly thing about this boy," her husband protested. "Wait till you see him," she begged. "Sure." "Peter boy, your mother has gone away," the judge began gently. "I saw her—in a box." "It wasn't really a box, Peter. I think it was a chariot that came to take your mother to a happy place—" "Wif horses?" "Yes, a chariot with horses." "No horses came," Peter objected. "Maybe they came when you were asleep." Peter shook his head. "I would hear horses." The judge tried a new idea. "Peter, have you a father?" The boy shook his head. "Have you a grandmother, or an aunt?" Another shake. He applied himself to the cooky—relatives could not interest him. "Oh, Judge Horton, could I—?" began Mrs. Archer. "Come here, Peter," he said to the boy, who came and stood beside his chair. "Do you see this lady?" Peter inspected her solemnly and nodded. "She is looking for a little boy to go

"Peter!" she called, "Peter!" "I'm here. James won't let me bring 'im in." "Bring what in?" "He's got a cur dog here ma'am," protested James. "Let him come in, James," interposed Mr. Archer. Limping into view in his stocking feet, was a strange figure. Grimy as to face and hands, the new shirt streaked and torn, the new trousers dusty, the tie floating behind, came Peter. He held tightly clutched to his bosom a bedraggled dog, unmistakably yellow in color and pedigree. His face was absorbedly earnest. "I got this dog," he began, "but I had a fight with a boy, an' I had to run a awful long ways to catch him." "Oh, Peter!" cried Mrs. Archer, and dissolved into tears. But Mr. Archer put his hand on the boy's shoulder and led the way into the library. "Now let's hear all about this dog," he said, settling himself into a chair with Peter standing between his knees. Mrs. Archer made a tearful, anxious background. "Where did you see the dog first?" Mr. Archer began. "Back of the stable—" "But, Peter, I told you not to go out," interrupted Mrs. Archer. "I went for just a minute to tell the coachman a story, an' he wasn't there, an' some boys had this dog out back, an' one of 'em tied a can to his tail, an' he sicked another dog on 'im,"—breathlessly. "What did you do?" "I licked 'im!" "Good. Then what?" "Then I tried to catch the dog, but the can made him run awful fast—" "But where are your new shoes, Peter?" demanded Mrs. Archer. "I couldn't run fast in 'em, so I frowed 'em away. I fell down some, and got a little dirty, he apologized, "but I got Snort." "Sport, you mean, don't you?" "No, his name is Snort. Can I keep him?" "We'll get you a good dog—" "I don't want a good dog. I just want Snort,"—earnestly. "Oh, you don't want that ugly, dirty cur, Peter," protested his new mother. "Yes, I do. I just want him," said Peter gravely. "John," said him so clean and nice. He's really quite handsome. If you could only just have seen him, you would have liked him," Mrs. Archer urged, in despair. "Peter, this is your new father." "Father," said Peter, "can I keep him?" "Boy and dog were suddenly all mixed up in John Archer's arms, in a most unexpected, unforeseen embrace, and John Archer answered huskily: "I'm willing, boy. Ask your mother." So it was that Peter and Snort found a home. II From the very day of his arrival Peter walked into the hearts and minds of the Archers, giving their lives such purpose and meaning as they had never known before. Mrs. Archer, started for mothering, found the longest outlet in Peter. He loved her back with the most winning frankness. To be sure, when she petted him too obviously before his father, he assumed a sort of enduring air of "we-men-understand-this-sort-of-thing" which nearly convulsed his parents. But what you might call his private relationship with his mother was perfect in its tenderness. Horses formed one of the bonds between them. He greatly respected her horsemanship. Then, too, she could read to him for hours about horses and dogs. He knew "Black Beauty" by heart, and "Bob, Son of Battle" was his Bible. To John Archer the boy's sturdy independence, his adoration of horses and dogs, made him as dear as a son would have been. Peter gave him in return a single-minded devotion "Father Archer" found more and more reasons why he should go home early in the afternoon, so that he and Peter and Snort could exercise one of the trotters. He formed the habit of staying home all night on Saturday, so he and his son might ride in the morning. Early in their acquaintance, he had offered to get Peter a pony, but Peter insisted that he wanted to ride "a regular horse." So, on a day soon after Peter's accession to his new throne, Archer came home to hear an excited tale from James and from Mrs. Archer. Somehow, Peter had managed to get on a horse, out in the meadow, and somehow he had managed to stick on. By the time Snort's barking made James realize the situation, and he managed to get from the stable to the fence, the boy was lying flat along the bare back, holding tight by the mane, while the astonished animal galloped wildly about the field. James shouted, rushed in pursuit, and finally stopped the mad ride, whereupon Peter sat up, patting the horse's neck and cried: "Aw, James, what did you stop 'm for?" James bore the culprit, kicking and protesting, to the house, where he elaborated the story to his terrified mother, who, in turn, passed it on to her husband. "It's a miracle he was not killed, John! You must give him a good scolding, and forbid him to go in that paddock." "Where do you suppose the little rascal gets his trick with horses?" laughed Archer. He waited for Peter to introduce the subject of that ride. "John," said Peter (he spoke thus, man-to-man, when they were alone, to the immense edification of his parent), "John, you know Mazepa?" Mr. Archer nodded. "Well, James was awful mad because I rode him today. Did Mother tell you?" "I think she did mention something about it." "She was scared, and she scolded me." "How did you manage it without any saddle?" "Well, I was standing on the fence, giving him a sugar, and he whispered to me to get on his back—" (Continued on page 6, Col. 1.)

Health and Happiness

"Mens sana in corpore sano" Number 23. Environmental Influences Upon Bacteria. A SERIES of articles on the relation of bacteria to milk now being published in the Watchman: Aug. 17—The Bacterial Content of Milks Supplied to Bellefonte. Aug. 24—How the Number of Bacteria in Milk is Determined. What are Bacteria? The Microscopic Appearance of Bacteria. Aug. 31—Environmental Influences upon Bacteria, Temperature, Light. Sept. 7—Moisture, Food—Supply, Oxygen—Supply. Sept. 21—Sources of Bacteria in Milk.

Most of the vegetative forms of bacteria are rather quickly killed by ordinary air drying, although there are great differences among the different forms. The tubercle bacillus is one of the most resistant to drying and although not possessing spores, tuberculous material dried retains its infectious properties for many months. The diphtheria bacillus has been known to survive drying for five months in a piece of mucus coughed up from the throat of a patient. Exposure to desiccation for a few hours, or, at most, a few days, destroys the majority of known pathogenic microbes. The spores of bacteria are much more resistant to drying than the vegetative forms. The spores of the anthrax bacillus will germinate after remaining in a dry condition for at least ten years.

OXYGEN-SUPPLY. All living organisms require oxygen to support life and most require atmospheric or free oxygen; but there exist certain bacteria that possess the peculiar property of not being able to grow except in the almost complete absence of free oxygen. These secure what is necessary from oxygen in combination in their food and, on account of their ability to live and multiply in the almost complete absence of free oxygen, are called anaerobes, while those requiring free oxygen are called aerobes. Facultative forms are those that thrive in either the presence or absence of free oxygen. Among pathogenic bacteria, the diphtheria bacillus and the cholera spirillum are forms that require a supply of free oxygen; the tetanus (lockjaw) bacillus grows best in the absence of free oxygen. This peculiarity explains why lockjaw develops from a wound closed to the air.

The majority of milk bacteria are obligate or facultative aerobes. Bacteria are able to derive their food from the most diverse substances. Most plants must manufacture their own foods out of simpler substances, but bacteria, as a rule, feed upon complex organic material already prepared. For this reason they can grow faster than other plants. Less complex substances can also be used as food. The so-called nitrifying bacteria are able to develop in the presence of very simple mineral salts and in the entire absence of organic matter of any kind; in fact are quite unable to thrive in the presence of organic substances.

The majority of bacteria are capable of living upon dead organic matter, such as meats, milk and vegetable material, and are distinguished as saprophytes; a smaller group deriving their nourishment from the living tissue of animals or plants are called parasites. There is no sharp line of division between these two groups as certain species possess the faculty of growing either as parasites or saprophytes, as shown by the ability of the tubercle bacillus and many others to grow not only in the human body but also upon the ordinary culture-media used in bacteriological laboratories. The parasitic group includes the bacteria which are the cause of various communicable diseases.

While bacteria are capable of living on solid substances, the food elements must be rendered soluble before they can be used. The degree of concentration and reaction of the food substance are of importance. Bacteria cannot grow in highly concentrated liquids like thick syrups and condensed milk although the necessary ingredients are present; a dilute sugar solution, however, does not have the keeping qualities of a thick syrup but will speedily sour.

In general, bacteria prefer a neutral or slightly alkaline medium but in this there are considerable differences between the different kinds of bacteria. DISTRIBUTION OF BACTERIA. The broader growth limits of bacteria in comparison with other kinds of life explain why these organisms are so widely distributed in Nature. Bacteria are everywhere—in the soil, air, and water but not in the tissues of healthy animals and plants. They are found, however, in the respiratory and digestive tracts and in secretions, such as milk, urine, etc., for bacteria do exist in the ducts of the glands, and contaminate the secretion as it passes to the exterior.

In soil, they exist in myriads at the surface especially if the soil is moist and full of organic matter but do not extend to great depths, few existing below four feet of soil. In air, the number of bacteria is greatest near the surface of the ground and decreases in the upper strata of air. Wind currents or anything that stirs up dust, of course, increase the number of bacteria. They are more numerous in summer than in winter; city air contains larger numbers than country air. Night air, especially in cities, is distinctly purer than day air on account of the fact that there is much less traffic at night to stir up dust. Wherever dried fecal matter is present, as in barns, the air contains many species of bacteria. When dried in dust bacteria are entirely dormant and are unable to grow even in a moist atmosphere.

In water, there is generally enough organic matter in solution to afford favorable growth conditions for certain forms of bacterial life. They are found in all bodies of water, both at the surface and below it. Water in contact with the soil surface takes up many impurities and is consequently rich in micro-organisms. As the rain water percolates into the soil, it loses its germ content so that deeper waters like the deeper soil layers contain few if any bacteria. Springs may become infected with soil organisms as the water issues from the soil. Through carelessness in the disposal of excreta from typhoid fever and cholera patients water may become contaminated and disseminate these diseases. Streams receiving the drainage of tanneries are sometimes infected with anthrax bacilli and have been the cause of outbreaks of anthrax among cattle, with some consequent cases of human infection. Bacteria are found in excessive abundance in decaying matter wherever it is found—manure heaps, dead bodies of animals, decaying trees, filth, for in such places they receive their best nourishment. Animals, man included, have them in the mouth, stomach, and intestine. In fecal matter there are enormous numbers, so that possibility of pollution of any food medium such as milk with such material is sure to introduce elements of a serious nature. They are on the skin, among the hairs, under the finger nails, flies have them on their feet, etc.; but in most of these places they call grow but little, if at all. Let them fall upon a place where there is food and moisture, however, and they will begin to multiply. It is their universal presence and extraordinary power of multiplication that make bacteria factors of such significance in Nature.

FARM NOTES.

The increased interest in wheat culture due to present conditions leads the Pennsylvania State College School of Agriculture and Experiment Station to offer brief suggestions covering its culture. The place of wheat in the rotation depends largely upon the system of farming followed. Usually wheat is the nurse crop with which clover and timothy are sown. Where oats and wheat are both grown, wheat usually follows oats, and where oats are not grown wheat follows corn, tobacco, potatoes, soybeans, cow peas or sod. Preparation of Seed Bed.—When wheat follows oats or sod, the ground should be plowed as early as possible after the preceding crop has been removed. After a hoed crop, as potatoes, tobacco or corn, or after soybeans or cow peas, the ground should be disk harrowed instead of plowed. In any event the aim should be to conserve moisture and to prepare a seed bed compact underneath with a finely pulverized surface.

Fertilization.—The practice of permitting the manure to accumulate until after the oats are removed and then applying it to wheat is not recommended by State College. Manure thus treated suffers loss in the yard and corn gives a greater return for the manure than wheat. If manure is used for wheat, it should be supplemented with 25 to 450 pounds of acid phosphate to the acre. Where no manure is used, about 75 pounds of dried blood or nitrate of soda and 350 to 400 pounds of acid phosphate or 500 pounds of a fertilizer containing two per cent phosphoric acid is recommended. This fertilizer is recommended when wheat follows corn.

Following potatoes or tobacco which are heavily fertilized, little, if any, fertilizer is needed for wheat. When wheat follows cow peas, soybeans or clover sod, nitrogen may be omitted and only acid phosphate used, but after timothy sod a little nitrogen may be used. Top-dressing wheat during early winter with manure usually gives a good increase in yield of wheat, and improves the clover and timothy. Unless manure is necessary to insure good clover and timothy, however, it should be used elsewhere in the rotation. Seeding.—Good seed of a variety known to do well under given conditions should be sown. Seed should be clean and plump. Early seeded wheat may be sown at a lower rate than wheat sown later. Small seeded varieties may be sown at a lower rate than large seeded.

In Pennsylvania, wheat is usually sown at from six to eight pecks per acre. The rate at State College has been eight pecks. Varieties which have done well in a ten-acre test at the College include Dawson's Golden Chaff, a variety sometimes objected to by millers as low in bread-making quality, Harvest King, Turkish Amber, Fulcaster, China and Reliable. In addition, a four-year test has shown Currell's Prolific to be a good variety. Bulletin 148 of the Pennsylvania State College School of Agriculture and Experiment Station, which will soon be ready for distribution, gives further details concerning the culture of wheat.

This is the season of the year when out-breaks of hog cholera are most common. Every sick hog should be viewed with suspicion until its ailment is definitely known, especially if there are other sick hogs in the community, states Dr. I. D. Wilson, of the Pennsylvania State College School of Agriculture and Experiment Station. The first and most constant symptoms of hog cholera are loss of appetite and fever. The temperature is frequently as high as 107 degrees F. or 108 degrees F. These symptoms may be accompanied by diarrhoea or constipation. Diarrhoea frequently occurs in acute cases and constipation in chronic cases. Hog cholera is usually characterized also by discharge from the eyes and redness of the skin in dependent portions of the body, and a rough, harsh coat. In the last stages the animal becomes weak in the hind parts, especially in chronic cases. To prevent the disease gaining a foothold in the herd, it is highly important, first, to keep the hogs in a strong and healthy condition; second, to disinfect the yards and houses occasionally with unslaked lime or some reliable coal tar disinfectant; third, to keep sick hogs away from streams, and to urge one's neighbors to do likewise; fourth, not to allow others to visit one's hog yards and not to visit the yards of others; fifth, to have all exposed hogs in an infected herd vaccinated. In Pennsylvania, the State furnishes hog cholera serum free to competent veterinarians so that hogs may be vaccinated at small cost. In case of an outbreak of hog cholera one should call a competent veterinarian or notify the Livestock Board at Harrisburg by telegraph or telephone.

If the disease gains a foothold in the herd, do not waste time or money on medicines in an attempt to treat sick animals or to prevent others from acquiring the disease. Experience has proved that drugs, except those used for disinfecting, are valueless in the treatment of prevention of hog cholera. Vaccination with anti-hog cholera serum, if properly done, is a sure prevention and early vaccination may save many sick hogs. In Indiana it is a crime for farmers to harbor rats on their premises. Rat-infested property is declared to be a public nuisance. This law would be improved by including English sparrows along with the rats. Both are pests which ought not to be tolerated on anyone's premises. If every man would work his own farm as he has to work when helping the neighbor haying, the country would be a good deal neater, a good deal more tempting to all concerned. Work, when work is called for; rest when it rains. Besides there is a Sunday every week.

The difference between good farming and poor farming is demonstrated by the condition of the buildings. Where buildings are in good repair you will find good crops and choice herds of cattle. In air, the number of bacteria is greatest near the surface of the ground and decreases in the upper strata of air. Wind currents or anything that stirs up dust, of course, increase the number of bacteria. They are more numerous in summer than in winter; city air contains larger numbers than country air. Night air, especially in cities, is distinctly purer than day air on account of the fact that there is much less traffic at night to stir up dust. Wherever dried fecal matter is present, as in barns, the air contains many species of bacteria. When dried in dust bacteria are entirely dormant and are unable to grow even in a moist atmosphere.

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