White Diarrhoea Due To Several Causes

What It Is—Some Methods Of Prevention.

ROY H. WAITE.
Maryland Agricultural Experiment Station.

So-called white diarrhoea is a symptom of several diseases that affect young chicks during the first few weeks of their lives. There are several causes which are: (1) faulty incubation; (2) faulty brooding; (3) improper feeding; (4) a mold organism (aspergillus fumigatus); (5) a small animal organism (coccidum); (6) a bacterial organism (bacterium pullorum).

WHITE DIARRHOEA.

In birds the normal excretions from the kidneys, which are white in color, are discharged with excretions from the bowels. If from any cause this intestinal excretion is stopped the kidney excretions will be voided alone and be white in color. This explains why the white diarrhoea is present as a symptom of several diseases.

There is no sure method for diagnosing these diseases outside the laboratory, but a careful observer can come close to the diagnosis by considering the history of the case. To determine whether or not the trouble is bacillary diarrhoea is most important. This form of disease is transmitted through the egg from the infected ovaries in the mother hen. Therefore, if the disease occurs quite uniformly in all chicks from certain flocks, no matter how they are raised, bacillary white diarrhoea may be suspected. If on post-mortem examination, the lungs are found spotted, we have a case of aspergillosis caused by mold organism.

Give close attention to correct incubation, brooding, and feeding. In the mold form (aspergillosis) prevent further outbreaks by sterilizing all feed for the first few weeks. This can be done by feeding only cooked feeds or by heating the dry feed in an oven. Keep your brooders clean and disinfected. Keep hatching eggs in a clean place.

For bacillary white diarrhoea, there is no known cure. Sour milk or butter milk is recommended. The best policy is to renew the breeding stock by getting eggs or stock from some breeder whose flock is free from disease. Never breed from a bird that has white diarrhoea.

The early summer season is the most favorable time of the year to study agriculture and allied subjects at the Maryland Agricultural College. The College Farm with its experimental gardens, orchards, field crops, and fertilizer plots is at its best. These opportunities for first hand study in addition to the outdoor life and the freedom from the care of the school room will make a few weeks spent at your Agricultural College delightful and profitable.

GIVE YOUR TOMATOES A GOOD START.

Aim To Have Strong Stocky Plants That Will Not Wilt When Moved.

J. F. MONROE,
Maryland Agricultural College.

Too many growers fail to realize the value of having stocky, healthy, vigorous plants to transplant in the field. The seed should be sowed thinly in rows four inches wide. The distance apart of the rows will depend upon the method of cultivating them. When the plants are about two inches high, thin them to about two inches apart, being careful to leave only the strong, vigorous plants. This gives the plants plenty of room to grow stocky, and develop a more extensive root system, which enables them to withstand transplanting.

The seed bed should be fertile. Avoid excessive applications of nitrogen, especially, Nitrate of Soda or Sulphate of Ammonia, because these materials tend to force a soft growth.

Plants that are growing too rapidly can be pinched back. This will start the growth of lateral branches. It is recommended in cases of extreme growth, rather than as a corrective for a neglected bed of plants or an undesirable condition in growth.

Many have experienced trouble from the flea beetle. Do not dust the plants with lime or other material, because it frequently injures the young seedlings. Spray the plants with 4-4-50 Bordeaux Mixture, to which has been added Arsenate of Lead at the rate of 2 pounds to 50 gallons of water. Keep the young seedlings covered with this spray. It will keep off the flea beetle without injuring the plants, and help to keep them clean and healthy.

Have the seed bed thoroughly wet when removing the plants, water by hand a few hours before if necessary. Never "pull" the plants. Loosen the soil with a spade and remove the plants carefully, in order not to break the small, tender roots. Put the plants in a box or bucket and keep covered from sun and wind as much as possible.

The courses in Domestic Science and Art, and Industrial Hand Work given in the Maryland Agricultural College Summer School are particularly attractive to the women teachers of the State. These courses not only provide useful training for the teachers, but include such work as can be done in elementary and rural schools.

ALFALFA WILL THRIVE IN MANY SOILS

NICKOLAS SCHMITZ.
Maryland Agricultural Experiment Station.

For a number of years the Maryland Agricultural Experiment Station has been testing alfalfa on the various soil types of the State now under cultivation. These tests, together with the successful experience of many farmers, have proven beyond a doubt, that under favorable conditions alfalfa can be grown successfully on practically all soils of the State.

No soil, regardless of type or location in the State, however, will produce fair crops of alfalfa unless it is fertile; producing at least 40 to 50 bushels (or 10 barrels) of corn per acre in a normal season. No amount of fertilizer applied either before or after seeding will make up for poor land at the start. Moreover, starting alfalfa under such conditions is indeed very expensive. If the land is poor, it is far better to wait a few years and grow fertilizing crops such as cow peas, crimson clover, soy beans and red clover in the rotation before each money crop. If manure is available, the more used the better. In fact, the supply of organic matter is a very important factor in the production of alfalfa. It is seldom that land very low in humus grows alfalfa successfully.

NEW CROP ALFALFA.

Drainage must be good. Alfalfa requires much more complete drainage than other farm crops. Land inclined to be wet and springy in winter and early spring, although dry enough during the growing season to produce good crops of corn, wheat, oats and grass, is not drained well enough for alfalfa. On such land alfalfa is sure to be killed out sooner or later by heaving due to the frequent freezing and thawing so common some seasons.

Liming for alfalfa is absolutely necessary on practically all Maryland soils,—even in the natural lime stone sections. It makes little or no difference what kind of lime is used if the proper amount of each is applied. It is a question of cost and ease of handling rather than the effect upon the alfalfa.

The amount of lime to use under average conditions is one ton per acre of caustic lime, that is burnt stone or lump lime, ground lime or burnt oyster shells. Hydrated lime should be used at the rate of 2,600 to 2,700 pounds and ground lime stone or ground oyster shells should be applied at the rate of 3,600 pounds to 2 tons per acre.

The best time to apply lime is the season before sowing the alfalfa. If, however, this is not convenient or impractical, it may be applied just before, or even after seeding, with the assurance of good results and no injury.

SHOULD BE PREPARING FOR MARYLAND WEEK.

T. B. SYMONS.
Maryland Agricultural College.

The premium list for the Maryland Week Exhibition, November 16-21, is now being issued by the Maryland State Horticultural Society and Affiliated Associations. The Club Exhibit Prizes have been increased as well as the prizes for fruits, vegetables, cereals, and dairy products. This show is now looked upon as one of the largest and best of its kind in the East. Now is the time to plan to produce prize exhibits of either fruit, vegetables or cereals. Every section of Maryland should be represented at this exhibition.

All local farmers' organizations should study the rules for the club exhibits and commence planning now for making a club exhibit at this great show. It will be good advertisement for any community besides making such an exhibit aids and advertises the worth of the local association in many other ways. Every section of Maryland should be represented at this exhibition.

This exhibition is educational in every detail, and all farmers should plan to exhibit and attend the show and annual meetings of the associations held at Baltimore in November.

SPRAY FOR ASPARAGUS BEETLE

E. N. CORY.
Maryland Agricultural College.

There are two asparagus beetles, one red with black spots, and the other black with yellow stripes, that infest asparagus. They deposit their eggs along the stalks. The larva, small, dirty appearing grubs eat the shoots. There is little or nothing that can be done to prevent injury when the beetles are present in numbers.

However, the chances of injury from this source can be greatly reduced by a few simple methods, employed after the cutting season is over. When the patch is of considerable extent, a thorough spraying with four pounds of arsenate of lead in a barrel of water in which has been previously dissolved one pound of laundry soap, to aid in the adhesive qualities of the mixture; or one quart of syrup or molasses will serve as well as the soap.

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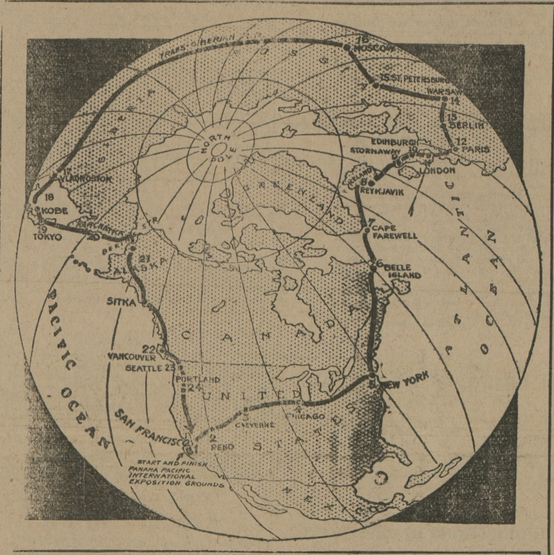
"SUNSHINE" AND "SPRING" AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, 1915.

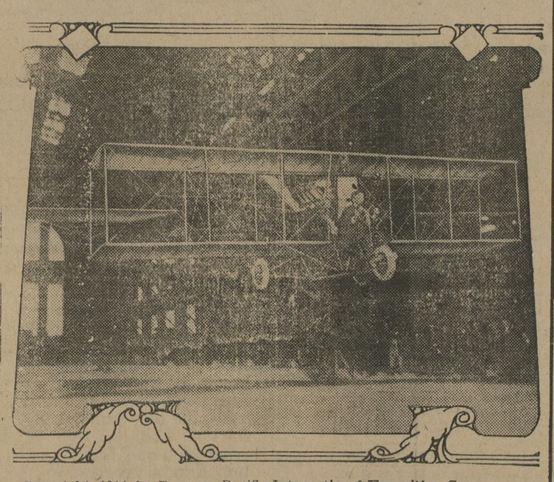
THE large group at the right is "Spring," by Furio Piccirilli, one of the groups in the Court of the Four Seasons at the Panama-Pacific International Exposition, San Francisco, 1915. At the left is "Sunshine," by A. Jaegers, who has created a companion statue, "Rain."



AIRSHIPS WILL RACE AROUND THE GLOBE FROM SAN FRANCISCO IN 1915.

AERONAUTS from all the civilized nations of the globe with every standard type of air craft driven by motors will participate in an aerial race around the world, which will be a feature of the sporting events to be held during the Panama-Pacific International Exposition at San Francisco in 1915.

The race will start from the grounds of the Exposition in May, 1915, and will end there. Three hundred thousand dollars has been hung up in prizes for this stupendous world girdling contest. A number of the world's greatest aviators have signified their intention of entering the races. The recent flight of Stoeffler, ending at Mulhausen, Germany, in which he covered 1,375 miles, convinces aviators that long flights are a matter of adequate supply stations. The above photograph shows the route around the world and the various supply stations.



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THE WORLD'S FIRST INDOOR AEROPLANE FLIGHT, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, 1915.

THE world's first indoor aeroplane flight was made by Lincoln Beachey, the American aviator, on the grounds of the Panama-Pacific International Exposition in San Francisco. Starting at one end of the Palace of Machinery, which is the largest wooden frame structure in the world, being almost 1,000 feet in length, Beachey attained a terrific momentum and rose into the air to a height of fifty feet, actually flying for a distance of 300 feet. At the opposite end of the building barriers of cloth were held by assistants to lessen the impact of the aeroplane. The machine, however, provided with a hundred horsepower engine, easily tore through the cloth, and the aviator received a severe shaking up. The difficulties of the flight were increased by the fact that the interior arrangement of the building consists of three longitudinal aisles each seventy-five feet in width, and Beachey flew down the center aisle, having to keep a straight course in order to prevent the aeroplane from striking the great columns of the aisle.

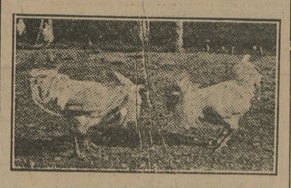
Improve Your Strain of Tomato Seed

Make Selections From Your Own Stock For Higher Production.

J. F. MONROE.
Maryland Agricultural College.

Study your tomato plants while working among them, with a view to selecting several for seed purposes. Set a stake beside those plants, which growing under normal field conditions, you consider ideal as to type. When the fruit on the these plants is fully ripe, pick it for seed. There may be a few of the plants, that have not developed as you expected. Discard these from the seed lot, sending the fruit to the factory.

Crush the ripe tomatoes in a barrel or bucket until it is two-thirds full, then let the pulp stand until it ferments. This will take from 24 to 72 hours, depending upon the temperature obtained. As soon as the mass has fermented, fill the receptacle with water. Let this settle for an hour or so; the pulp will rise and the seed sink. Dip the pulp and water off, and fill the barrel a second time with water. Let this settle for a short time and pour off. The seed will be clean. Pour it out on a screen to permit the surplus water to drain off. Place this in a dry room, where birds and mice cannot reach it. Leave it for some time to dry thoroughly. The seed can then be put in cotton bags, and stored in some dry room over winter. Continue this selection and you will increase the profits from the tomato crop. There is nothing finer than clean, home-grown tomato seed.



FIGHTING IT OUT.
ROY H. WAITE.
Maryland Agricultural Experiment Station.

Anyone having a little nerve and some mechanical ability can quite easily learn to caponize well enough to operate on the males of small flocks. The operation looks difficult but really it is a very simple one. It is simple because of the nature resistance birds have to the attacks of bacteria. It seems strange that the intestinal cavity of birds can be opened up in so crude a manner without disastrous results but such seems to be the case. Antiseptics are not even used as a rule because they would taint the flesh and if the bird happened to be killed during the operation, it would not be so good for food.

THESE DON'T FIGHT.

The advantages of caponizing are that the birds become more docile and can be managed easier, their flesh is of better quality and they can be raised to a given weight on less feed than can cockerels. They also bring a higher price on the market than most any other fowl.

Simple though explicit instructions for performing the operation accompany the caponizing instruments sold on the market.

RURAL MINISTERS CONFERENCE AT AGRICULTURAL COLLEGE.

Will Meet Early In August For the Discusison Of Country Life Problems.

B. H. DARROW.
Maryland Agricultural College.

The country church is continually under fire by critics who declare that it is not fulfilling its function, that it does not stand for something vital to the needs of the average man and woman. If this be true, it is a serious condition indeed.

That there is some truth in the statement is now admitted by any minister who has studied the problem, but the fact remains that the rural church has done a wonderful work in the past and should be sparingly criticised except where criticism may bring about constructive effort toward betterment. Country life has changed, rural institutions have weakened and some have disappeared entirely. Here and there we find a flourishing country church, alive to the needs of its neighbor house and recognized as the most necessary organization in the community. However, in many places may be found "churches" which are but names, buildings, "shells,"—which if not abandoned utterly have but little influence on the people in their neighborhood.

The country minister of Maryland is awake, as is demonstrated by the Rural Life Conference for Ministers which will be held at the Maryland Agricultural College, August 4, 5. 6. Every minister in the State is being urged to attend and should receive a program of this conference.

THE CABBAGE WORMS.—Three or four species of moth or butterfly larvae are annual pests of cabbages, but their ravages are easily controlled by a thorough spraying with arsenate of lead, 2 lbs. to a barrel of soap suds made with one pound of laundry soap to 50 gallons of water. Use a nozzle that will give a fine mist.

Country boys need rotation of experience as fields need rotation of crops.

How To Improve the Dairy Herd

Form a Breeders' Association For Securing Pure Bred Sires.

G. E. WOLCOTT.
Maryland Agricultural Experiment Station.

The most economical way to establish a herd of high grade dairy cattle is to breed the common cows, such as are found in every locality, to a pure bred bull. This bull should not be merely a pure bred of the breed desired; but he should be the offspring of animals that are known to be large producers of milk and butterfat. His dam should be a large producer; likewise the dam of his sire. These two animals exert a great influence on the young bull. If his sire be an aged bull, it is well to note the production of his daughters. If this dam and his granddam on his sire's side are animals of merit, and his sire has bred daughters that are making large productions,

PURE BRED SIRE.

there is reason to believe he will transmit these qualities to his offspring.

The advantage of using a pure bred sire on the grade herd is easily understood when it is seen that the first offspring contain 50 per cent. of his high producing blood. As his breeding is apt to make him prepotent over common cows, his influence on the first cross is really greater than represented by the 50 per cent. When the pure bred sire is bred to the half blood heifers, the progeny will be 75 per cent. pure. This being carried on for several generations, a high grade herd of cows will be developed, which for practical purposes are as good as pure breds.

In localities where one breed is popular, the most economical way to purchase bulls, is to organize a Breeders' Association. The association elects a board of directors who have charge of the affairs of the association. There may be some bulls in the community that are of sufficient merit to be included in the association. By purchasing one or two more a large number of cows could be bred each year.

The community is divided into blocks. When the bull in block No. 1 is no longer desired, he is moved to block No. 2, and one of the other bulls is moved to block No. 1. By this method of co-operation, each farmer has the use of a pure bred bull for a period of six to nine years, at the initial cost of one, or if his herd be small, less than the cost of one.

There is another great advantage to this system of breeding. The bulls are kept in the community for a period of several years. The production of their daughters are known before they are disposed of. If one of the bulls has transmitted to his offspring high producing ability, he is the highly prepotent animal that is worth a fortune to any locality.

Further, the community will become known as a center for a certain breed; and buyers will eagerly purchase the surplus at a higher price than could otherwise be secured.

KEEP THEM TAME.

ROY H. WAITE.
Maryland Agricultural Experiment Station.

It certainly pays to keep chickens tame. Aside from the satisfaction and pleasure of working in agreeable surroundings, the chickens, themselves, will grow and develop much better. It's a simple matter to keep them tame. One of the most important steps is to keep them hungry. Chicks that are overfed do not take much interest in their attendant. Then you must be careful in all your movements when going amongst them for quick or sudden motions will set them all aflutter. If they are wild, make them come close to you to get their feed. Gradually shorten the distance the feed is thrown each day and soon you will be rewarded by them flying upon you and acting as gentle and fearless as one could wish.

Let your boy or girl have a share in the farm business. Give them a pig, a calf, a few hens or a patch of land to work—a place for a hive of bees if nothing else—anyway to make them feel they have a part in the life of the farm that is their very own.

Boys are natural resources. They can be worked out as soil can be impoverished by forever exacting the same thing of them and never fertilizing them with play.

The country school should teach its pupils the mysteries of the soil, the habits and value of birds, and the marvelous wealth of the vegetable world about them.

WARM WEATHER FAVORS SPREAD OF HOG CHOLERA

Those Wishing To Protect Their Hogs From This Disease Should Take Precautions Now.

The season most favorable to the spread of Hog Cholera is now at hand. Every hog owner who wishes to protect his herd against loss from this disease, should secure serum promptly and have it administered before any sign of contagion becomes evident. It should be known that hog cholera serum is not a cure, but a preventative, and as such should be administered before an outbreak is likely to occur.

The cholera was so prevalent last year that the demand for the serum was greater than either the State Laboratory or the commercial laboratories throughout the country could supply and their output in some cases was bought up and contracted for months in advance. Many hog raisers in Maryland availed themselves of the serum manufactured at the Experiment Station, and a number of reports have been returned from time to time indicating satisfaction, particularly where the serum was used before the diseases had actually appeared in the herds.

The tested serum supplied by the Experiment Station should be used at the rate of 35 c.c. per 100 pounds of live weight, the cost price being 2 cents per c.c. or 70 cents for a 100-pound hog. The serum must be administered by or under the direction of a licensed veterinarian or doctor of medicine. If you have any idea of protecting your hogs against cholera, have them attended to promptly. Do not wait until some are taken sick and the serum can do only partial good in saving those still unexposed to the disease. Write now to the Experiment Station at College Park for a full description of the disease and precautions you should take.

LESSONS SHOULD BE FULL OF INTEREST.

Our Country Children Should Be Educated In The Needs Of The Life About Them.

J. E. METGZER,
Maryland Agricultural College.

The successful school is that one in which the teaching is in terms of the child life. Doubtless the decline of the rural school may be laid to the fact that both the preparation of the teacher and many of the textbooks used are foreign to the common things of the farm home and life. Teachers who have come to the rural schools and tried to teach the things they were taught in the city schools have found their work a drudgery and the pupils apparently dull and listless. Parents and school officials excuse this deficiency on the part of teachers by saying that they are from the city and are not expected to be familiar with country life.

What is needed and should be required of every rural teacher is either experience or training which acquaints them with the facts about farm crops, soils, farm animals, sanitation, and the preparation of foods, and the best methods of presenting them in the school. Our Agricultural College is helping to solve this problem through its summer training school for country teachers, which opens for a six weeks' session June the 22nd.

QUENCHING THEIR THIRST.

ROY W. WAITE,
Maryland Agricultural Experiment Station.

A good way to supply water to fowls, especially to the growing chicks, is to keep it before them in stamped-out, galvanized refrigerator pans. The nice thing about these pans for watering chicks is that they are seamless, quite easily cleaned, and can be obtained in any suitable size. Further, they hold a good volume of water and are very easily filled. For young chicks place a brick or flat stone in the centre of the pan so that if any jump in, they can rescue themselves. Some chicks don't know that they can't swim!

THE COMMON FLY A DEADLY PEST.

Breeding Places Should Be Gotten Rid Of At Once.

T. B. SYMONS,
Maryland Agricultural College.

Now is the time to prevent the house fly from appearing in large numbers this summer. Little can be done by a few persons in putting down this nuisance, if some neglect to do their part, for a single pile of horse manure allowed to stand in the open will furnish flies for the whole neighborhood. The greatest good, therefore, will result when all persons keeping stables in the community have the manure removed from the stables at least twice a week or keep the manure in a screened portion of the stable. Too much emphasis cannot be put upon this method of avoiding human sickness and suffering from the deadly diseases that the house fly carries.

Combating the pest in country districts and around farmhouses is largely an individual one, and the presence of flies in large numbers or to a limited extent will depend upon the sanitary conditions around the house and barn. Aside from hauling out the manure at regular intervals, all out houses and similar places should be protected from flies, as it is in this manner that the fly assembles the germs of disease and distributes them to any exposed food. It cannot be too strongly urged that all such places be constructed as sanitary as possible and disinfectants freely used.

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