

The
POULTRY
HEALTH

Messenger



BABY CHICK
Health Number

JANUARY-FEBRUARY
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The POULTRY HEALTH Messenger

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A HAPPY NEW YEAR NEW YEAR'S CALL

WHEN the logs are burning free,
Then the fire is full of glee,
When each heart gives out its best,
Then the talk is full of zest.
Light your fire and never fear,
Life was made for love and cheer.

—Henry Van Dyke.



HIS MAJESTY The Chick

THIS issue of the POULTRY HEALTH MESSENGER is dedicated to His Majesty, The Baby Chick.

Just as the future of our nation rests on the youth of today, so the future success of your poultry flock depends on the kind of chicks you'll hatch this spring and on the way you raise them.

It is conservatively estimated that over a billion chicks are hatched each year, but only a fraction of them develop into profitable layers. Many and varied are the hurdles that a delicate chick must overcome at every stage of its existence. Dangerous enemies lurk at every turn of the road which the chick must travel. These enemies are ever present, ready to pounce upon the unsuspecting and helpless chick the minute it is not properly guarded.

In this issue of the POULTRY HEALTH MESSENGER we point out these many dangers and show the poultry raiser how he can guard against them. Read it from cover to cover! You are bound to absorb some helpful information that may be worth hundreds of dollars to you in this season's poultry work.

This year it will pay the farmer more than ever to concentrate his efforts and attention on his poultry. Poultry and eggs have declined least in price among all farm products. Egg prices as this is written are higher than they have been since September, 1930. The spread in price between feed and eggs is greater today than it has ever been.

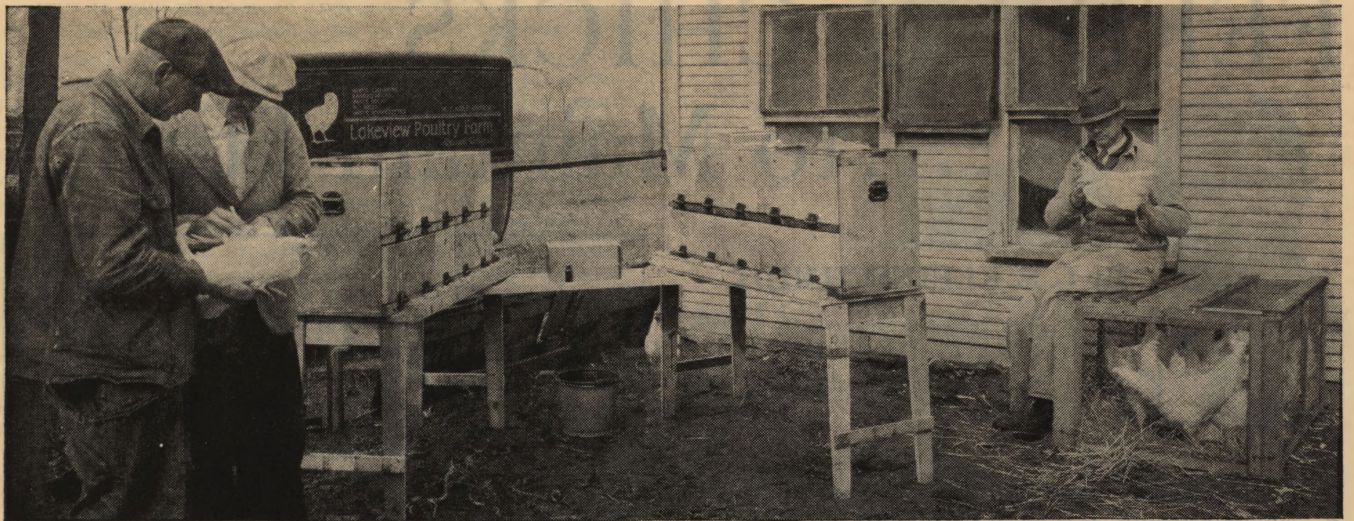
From 1925-1929 the value of poultry and eggs ranked fourth among all farm products. In 1930 they ranked third, in 1931 second, and it is estimated that for 1932 they will rank first. For a considerable portion of the depression poultry meat occupied the enviable position of being the only important farm commodity whose index figures remained above 100.

Isn't it logical then to assume that in 1933 poultry and eggs are going to be the backbone of the farming industry, because they represent the farmer's chief source of income and hold greater profit possibilities than any other farm crop?

It will certainly pay the farmer to take good care of his poultry in 1933, and such care must start with the baby chick. Profits from poultry will increase in direct proportion to the way baby chick losses can be stopped. If you follow the advice given in this issue of the POULTRY HEALTH MESSENGER such losses will be reduced to the minimum. And don't forget that your local Salsbury dealer is always ready to help you and give first aid in cases of emergency.

Dr. J. E. Salsbury

President,
Dr. Salsbury's
Laboratories.



The Lake View Poultry Farm of Holland, Michigan, goes through its annual poultry round-up of culling, testing and certifying.

What's New in Poultry Health

NOTES ON INFECTIOUS BRONCHITIS

THE virus of infectious bronchitis is always found in the trachea of infected birds, reports Komarob and Beaudette in *Poultry Science*. Certain birds that apparently recover from the disease will carry the virus in the upper respiratory tract. The virus could not be demonstrated in the liver, spleen, kidney, ovary or blood. Birds that have recovered and remain as carriers seem to be the greatest danger of causing fresh outbreaks when healthy chicks are brought in.

CONTROL OF INFECTIOUS LARYNGO-TRACHEITIS (Bronchitis)

The following plan of preventing bronchitis was outlined by C. S. Gibbs of Massachusetts at the 1932 meeting of the POULTRY SCIENCE ASSOCIATION.

1. All of the old birds should be disposed of before or at the end of the hatching season.
2. The young chicks should be kept entirely separate from the old birds and the premises.
3. All the buildings occupied by the old birds should be thoroughly cleaned and disinfected as soon after disposition as possible.
4. Permitted disinfectants should be used as directed for disinfecting the houses and equipment.
5. The houses and yards, after cleaning and disinfecting, should be opened to the air and sunshine and left vacant for two months, or longer.
6. The re-introduction of infectious laryngo-tracheitis should be guarded against.

Editor's Comment:

We have frequently found that if the temperature of the brooding quarters can be raised quite high and if the atmosphere can be saturated with Cam-Pho-Sal fumes much better results are attained in checking this disease. Cam-Pho-Sal is a strong disinfectant that may be used by spraying a solution in the air, by heating a solution in the bucket or pouring on hot bricks. In severe cases this may have to be repeated every hour.

Don't expect that a treatment once a day or once every two days is going to do much good when chicks are in bad shape. In spraying chicks we often find that there is not enough vapors generated to fill the entire room in which the chicks are kept. In that case the chicks are to be confined to as small quarters as possible during treatment.

If the birds are in batteries, sacks or canvas may be hung around from the top so that the batteries may easily be filled with fumes. If the birds are on the floor, a false ceiling may be put over them to keep the fumes from being dissipated.

Whenever there is an intestinal inflammation as shown by watery or off colored droppings, use 8 Phen-O-Sal tablets to the gallon of drinking water. By thorough attacks in this manner, bronchitis can easily be brought under control quite rapidly. In our experience most cases of so-called bronchitis is nothing but the old-fashioned colds.

CROOKED BREAST BONES

In the study of the relation between early roosting and crooked breasts, C. S. Platt of New Jersey reported to the Poultry Science Association that 26.6% of White Leghorn cockerels receiving a ration without Cod Liver Oil and having no roosts had crooked breast bones at 8 weeks of age. Birds receiving the same ration with 1 and 2% Cod Liver Oil and no roosts had perfectly straight breasts. When birds without Cod Liver Oil in the ration were put on roosts, 66.6% had crooked bones. Birds given 1% Cod Liver Oil and roosts showed 64.3% crooked bones while the group that received 2% Cod Liver Oil and roosts were 44.4% crooked bones. Apparently there is not enough Cod Liver Oil absorbed to develop straight bones when birds are roosted too early.

HATCHING POWER IN HENS

Under the title of "Hatchability and Fertility Are Not Inherited" on page 6 of the September-October issue of the MESSENGER, slightly incorrect inference was given by this title, says the Junior Author in a recent letter. Following are some of the conclusions drawn by Hyre and Hall in their work on the constancy on Hatching Power in Hens:

1. Hatching power in the domestic fowl behaves as individual characteristic fairly constant from year to year. It increases slightly with age. It seems to be more constant in the Single Comb White Leghorn studied than in the heavy breeds.

2. Fertility in the domestic fowl behaves as an individual characteristic with a fair degree of constancy from year to year as hatching power. Fertility decreases slightly with age. There is no correlation between fertility and hatchability.

FEEDING CHICKS

....to Maintain Health



By L. S. KLEINSCHMIDT

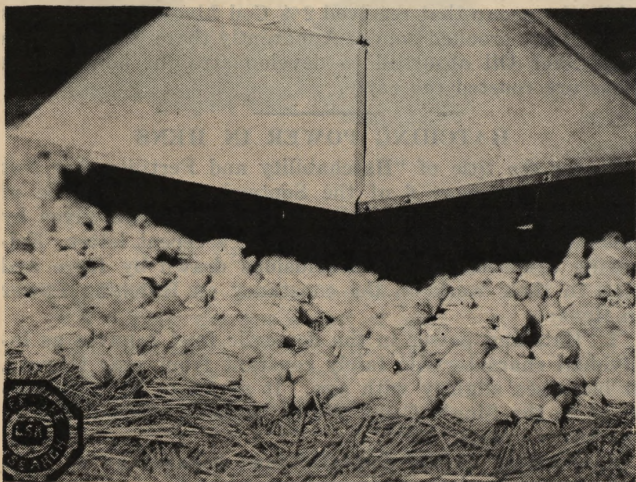
Director of Research,
Gee Bee Feed Company,
South St. Joseph, Mo.

IN DISCUSSING the subject of "Feeding Chicks to Maintain Health" it is taken for granted that we have this health in the chicks when they are hatched. We must have it to begin with if we are going to maintain it. We assume, therefore, that the breeding flock from which eggs are produced has been properly handled and managed so that these birds are healthy, high in vitality, and good feeders capable of producing eggs that will carry these factors into the chick when hatched. This further takes for granted that culling, housing, testing and feeding of the breeding flock for at least sixty days prior to the hatching time has been handled according to the actual needs of this flock based on results. Better results will be had by a longer, definite program of care, yes, extending around the entire year.

It must be remembered that the true chick is simply a small germ on top of the yolk of the egg, and that the yolk and albumen in the egg make up the food material during hatching time. Therefore, this chick depends on its food for three weeks prior to hatching from the material that the hen has stored in this egg.

Start with chicks having the right background and your problem of raising healthy chicks is much simpler. These chicks are ready to continue on feed just as soon as they are dry from the incubator, dry enough to avoid the danger of chilling when moving them.

Regulate the heat to the proper uniform temperature, and place the chick feeders around this brooder stove in fan shape, with waterers in between each pair of these feeders. For 500 chicks provide ten 4 ft. chick feeders and ten quart jar waterers set up in the brooder house filled with feed and water by the time the chicks arrive. The chill should be taken off the water to avoid the danger of chilling the chicks from the inside at least during the first week. Chicks feed best from small open top feeders



A well regulated brooder stove keeps the chicks comfortable on the Gee Bee Experimental Farms.

Incorrect feed may bring about at least 4 distinct classes of disorders in baby chicks. Properly balanced feed prevents them.

1. Rickets or true leg weakness. Prevented by Cod Liver Oil, sunshine and lime.

2. Slipped tendons or hock disease. Prevented by proper balance of calcium and phosphorous. Oat hulls and rice bran help.

3. Crazy chick disease. Loss of balance and sense of direction. Reduce feed, add more corn and alfalfa.

4. Nutritional paralysis. Chicks walk on hocks with toes turned inward. Milk products, green feed, beef and pork liver help.

These conditions should not be confused with infectious diseases.—Editor.

about 2½ inches wide and 2 inches high, with a single wire across the top kept tight by a small spring. The feed is easily accessible in such a simple feeder and yet keeps chicks out.

A dim light should be provided just forward of the brooder stove and above it, equivalent to about a 10 watt electric light, or a lantern on farms where no electric light is available, and burn it all night. This light provides an opportunity for the chicks to feed in the middle of the night, resulting in increased growth. Also this light breaks up the danger of the chicks crowding and the loss resulting therefrom.

With modern feeding science, we are able to make a definite recommendation of never letting the chicks out of the brooder house during the first four weeks, thus protecting against chilling, dangerous infectious diseases, worm infestation, and producing more rapid growth.

In order to meet the requirements of chicks under this Simplified Management Program we recommend a high vitamin starter, running about 19% to 20% total protein, the protein sources being a variety and balance between vegetable and animal protein, carrying a powdered milk content of approximately 10%. The mineral ingredients must also be balanced to produce good firm bone growth without giving excessive deposits in the joints, which cause stiff joints and crooked legs.

Chicks do better for the first four weeks, when this starting feed is an all mash feed so constructed that no other feed is necessary along with this mash. Liquid milk is not necessary, and it is advisable not to feed liquid milk in the early life of the chicks. The milk itself is a good feed, but the amount that gets on the outside of the chicks chills them, and unless the milk feeders are kept clean they are a constant source of disturbed digestion.

After the first four weeks feeding under the system and management outlined above, the chicks should be changed to a Growing Mash constructed on a slightly different principle, and also requiring a less expensive feed during this period. Finely cracked grain should be fed in addition to this Growing Mash, allowing the chicks

to select at will which feed they need for body requirement, either grain or mash. At this age in their lives they seem to be able to control the amount of grain and mash required by their own body demands and appetites. We find that chicks will start off eating a very small amount of grain, gradually increasing the grain as they get older until when they reach maturity they will be taking about two or three parts of grain to each one part of mash. Thus they automatically get what their body needs, a gradually reducing amount of protein as they get older and as growth progresses. They make these gradual changes themselves without any effort on the part of the feeder.

To house these chicks in starting them off we use a 10 ft. section in our regular laying house 20 ft. deep, providing as many of these pens as we desire to use for stoves. This gives us a permanent brooder house close to our own dwelling where they can be handled and looked after in case any attention is needed. We find by experience that this is much better than scattering individual brooder houses over a wide territory where you have to run out to look after the chicks in case of storm or rain or suddenly dropping temperatures. It has no disadvantages because we want to keep the birds inside of the houses anyway to protect them from the elements and various diseases to which young chicks are subject. At maturity we can house pullets in this house through the winter months, and carry them on until spring when we again need the brooder house for brooding chicks.

Further details on feeding and management problems will be gladly given by the writer to readers of the Poultry Health Messenger.

BROILER CHICKS

IN BROILER plants and battery brooding the disease problems are very similar to those found in the colony brooding of chicks. Sanitation and ventilation are two very important factors on account of the large number of chicks in a small space. The oxygen in the air is soon used up. Then the chicks are compelled to breathe air filled with poisons exhaled by other chicks. Instead of the chick being benefited by the oxygen in pure, fresh air, which is so essential to health, its delicate lungs are poisoned, inflamed and irritated by the foul air.

Often times this results in bowel trouble because without oxygen there is no digestion or assimilation possible.

Watch the droppings pans for abnormal droppings. (Normal ones are gray with white tips). If yellow, brown, green, foamy, mustard colored, or bloody droppings are found, don't delay. Use at once 8 PHEN-O-SAL TABLETS to every gallon of water and milk. (It can be used in metal containers). See that every chick has at least one cubic foot of fresh air every hour.

Post some of the chicks that have died and see if the lungs are discolored and the intestines inflamed. (Normal lungs are pink). If this bowel disturbance started from the lungs, use CAM-PHO-SAL as directed on page 6 under Respiratory Troubles.

"BETTER AND CHEAPER BROILERS"

Can be raised by using $\frac{1}{2}$ to 1% of Dr. Salsbury's AVI-TONE in all the mash fed. Try it and convince yourself. It keeps them toned up and enables them to get more nourishment from the feed they consume. AVI-TONE is the cheapest poultry tonic offered the American people. It actually reduces feed costs. It only takes a little because it is 100% pure drugs, no fillers.

Prevention Program

Here is the program that has been so popular with poultry raisers all over the country. Start your birds out by this method and follow it through the entire season. Cash in on the better growth, health and development.



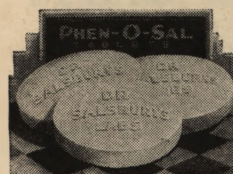
HIS MAJESTY.... the Chick Needs PHEN-O-SAL.... *A Real "Chick Tablet"*

To be used in the drinking water right from the start. A chick saver for the Poultryman, because Phen-O-Sal Tablets in the drinking water or milk, quickly aids in checking diarrhea. Phen-O-Sal Tablets also aid digestion and furnish necessary elements for blood. Healthy blood gives the chicks greater resistance to diseases.

Phen-O-Sal Tablets can be used in any kind of containers, including galvanized.

Phen-O-Sal Tablets come packed in convenient size packages, to suit any sized flock.

Be sure and take home a package when you get your chicks and give them the right start in life. Get it from your dealer. It costs no more.



Note large tablet, actual size, all medicine

PHEN-O-SAL TABLETS

Size	Price
50 Tablets	\$.50
125 Tablets	1.00
300 Tablets	2.00
500 Tablets	3.00
1000 Tablets	5.50

(Birds from One Day Old to 6 Weeks of Age)

Use 2 Phen-O-Sal tablets to every gallon of drinking water or milk or both, for the first 6 or 8 weeks.

Add one heaping teaspoonful of Avi-Tone to every 2 quarts starting mash (or 1 lb. of Avi-Tone to every 100 lbs.) Provide this until 6 or 8 weeks old.

(From 6 Weeks Up to 12 Weeks)

Use 4 Phen-O-Sal tablets to every gallon of water, the same days that you give the birds Avi-Tabs.

For each 100 birds dissolve 10 Avi-Tabs in one pint of warm water over night. In the morning, mix this solution with $1\frac{1}{2}$ quarts of mash and make crumbly. (If not enough water to make this amount of mash crumbly, add more).

● *I LOVE to watch the rooster
crow,
He's like so many men I know,
Who brag and bluster, rant and
shout
And beat their manly chest—with-
out
The first darn thing to brag about.*
—Southern Planter.



Common Chick Ailments

How to Avoid and Correct Them

WHEN the journey of life is first begun by a baby chick, other animal or man, there is always great concern over the health and well being. This concern starts the very first day and lasts throughout the entire period of life. It is present among the rich and poor alike and applies to the small as well as the large flock.

It has truly been said that disease is a limiting factor of poultry raising. If we can raise chicks free from disease we are sure of success even though the price may be fairly low; but if the birds die off, we gain nothing even though prices are at the highest peak.

One of the important things in raising healthy flocks is to keep a constant look-out for danger signals (symptoms of sickness). We must be able to recognize them, know what they mean and what to do when they appear. In raising baby chicks an ounce of prevention is worth ten pounds of cure.

The sentiment back of "The early bird catches the worm," should be keenly applied by the poultryman and translated into "The early observer catches the infection before it has a chance to spread." The point is that early diagnosis and proper steps taken immediately will more than pay for themselves in chicks saved.



A baby chick opened for post-mortem examination.

The color and condition of the liver, lungs and intestines help to tell what is wrong.

TWO KINDS OF TROUBLES. The usual run of chick troubles fall in two main groups, namely infections of the intestinal tract and of the respiratory tract. Also keep in mind that very often these two conditions overlap so that a chick infected with bowel trouble very often also has lung trouble and vice versa.

RESPIRATORY TROUBLES

Respiratory troubles (including brooder pneumonia) are much more common than ordinarily supposed. They are fundamentally of two kinds. First: colds that affect the lungs, eyes and nose and very often show up as cheesy spots on the lungs. This condition used to be thought due to a fungus, but it is now considered to be closely related to various bowel disorders and the same germs found in the bowel disturbance are also found in these lung conditions. Cholera germs, pus-producing germs, streptococci, pullorum and typhoid germs are often found in the various kinds of respiratory diseases.

One of the serious results from lung trouble in chicks is the failure to absorb the yolks.

The second respiratory condition is the newly discovered disease called bronchitis or more technically laryngo-tracheitis. This disease seems to be caused by a specific virus and seems to have no relation to any other condition. The characteristic of bronchitis is that there is a bloody or glassy, sticky phlegm in various parts of the windpipe and this phlegm chokes the bird to death very quickly.

Faulty ventilation, crowding or overheating and then chilling often seem to be causes of respiratory diseases, although the infection may enter under the most ideal brooding conditions.

TREATMENT FOR THESE COMMON TROUBLES

Since the same germs are found in the lungs as in the bowels, when chicks are sick; since it is merely a matter of chance which organ becomes affected the most, it is evident that all of these diseases should be treated in essentially the same way.

1. All sick chicks should be removed just as soon as they are discovered.

2. The floors should be cleaned frequently and disinfected with Dr. Salsbury's Poultry House Disinfectant. In severe outbreaks cleaning and disinfection should be done twice a day for the first two or three days. A little extra work during the first two or three days will result in much quicker response. The reason for cleaning and disinfecting so frequently is to kill off the infection that is spreading from sick to healthy birds.

3. Start treating the inflamed intestinal tract by using 8 Phen-O-Sal tablets to every gallon of drinking water for four or five days and then reduce to 6 tablets per gallon for four more days. When necessary the dose may be increased to 10 or 12 tablets to every gallon. If the birds need a laxative treatment, soda, molasses or Epsom Salts may be used. Molasses is a favorite laxative with many. One pint of molasses may be added to a gallon of water for the first drink in the morning. When chicks are one or two weeks of age they may be given, when necessary, one pound of Epsom Salts to every 500 chicks. This may be given either in the drinking water or in a moistened mash.

4. Spray the chicks with Cam-Pho-Sal. Use three teaspoonfuls to one-half pint of hot water. This is usually sufficient for each spraying of 400 chicks. Repeat the spraying every hour for the first day and every three hours thereafter. The reason for using Cam-Pho-Sal is two-fold. One is to open the breathing organs so that the birds can breathe better and the second is to kill the germs.

Cam-Pho-Sal is both a germ killer and a respiratory stimulant. Cam-Pho-Sal fumes may also be generated by using 3 teaspoonfuls to one-half pint of water, put in the bucket and place near the hover; then drop a red hot brick into this bucket. Repeat this treatment every three hours. This quantity is sufficient for about 400 chicks. Cam-Pho-Sal may also be put in humidifiers and vaporizers attached to brooder stoves. It is important to close the doors and windows during the treatment so that the chicks will inhale a maximum amount of Cam-Pho-Sal fumes. One-half pint of Cam-Pho-Sal solution in small, confined quarters will naturally be much more effective than the same quantity sprayed into a large open, airy building.

Ventilation should be shut down for 20 or 30 minutes after each treatment. This treatment may be given every hour in bad cases and then gradually lessened to once or twice a day as the situation comes under control.

WHAT ARE THE COMMON BOWEL TROUBLES?

Various types of improper feeding, irregular feeding, over-feeding, etc., may cause an upset of the digestive tract and as a result there may be either constipation or a looseness of the bowels. As a rule the white discharge is not really a diarrhea but is a result of constipation. The back part of the bowels are full of droppings and only the white secretion from the kidney passes on through. This is apt to stick to the down and cause a pasting up behind. Such birds need a laxative diet as well as an intestinal corrective. Any intestinal irritation may cause this condition: Coarse, bulky feed, fine sand and specific infections such as pullorum disease.

Unabsorbed yolks are also responsible for bowel disturbances. Possibly we should put it the other way and say the bowel disturbances are often the causes of unabsorbed yolks. We can best visualize this after we think of the yolk stalk attached to the intestinal tract, and if this intestine and surrounding tissues become inflamed, it is impossible for yolk material to become absorbed. Unabsorbed yolks are also caused by infection of the yolk sac. That is, bacteria get into the yolk sac and "sour" the contents and thereby render them indigestible. Pullorum and many other kinds of germs may cause this sourness.

Overheating will not "cook" the yolk because if the heat is high enough to cook the yolk it will actually kill the chick. Some years ago feeding too soon was thought to stop the absorption of yolks but now this has been proven a fallacy.

TREATMENT

Use 2 PHEN-O-SAL TABLETS to every quart of drinking water to heal the intestinal inflammation, to increase the disease resistance of the chick and help it fight the germs. PHEN-O-SAL also helps to build up the blood. It can be used in any kind of container including galvanized.

PASTY EYES

This trouble is seen both in chicks and in ducks. It seems to be due to a specific infection although it is often complicated with incomplete nutrition. Feeding hard boiled egg yolks, green feed and Cod Liver Oil together with antiseptic sprays such as Cam-Pho-Sal usually corrects this trouble.

RICKETS

The best test to find out whether chicks have rickets or not is to place the upper beak between the thumb and finger. If it feels soft and rubber-like you can be sure that the birds are not developing bone like they should. If it feels quite firm and solid, then you are quite sure the trouble is not rickets.

The legs may also be tested for brittleness. If they are fairly brittle lime deposition is satisfactory. If the legs are soft and pliable, lime has not been deposited as it should be. Softness of the bones very often accompanies some of the other infections and these infections do not respond to treatment well unless the rickets is treated also.

Treatment for rickets consists of providing plenty of chick size oyster shell in such a way that they can eat an abundance of it and supplying Cod Liver Oil freshly mixed with the feed at the rate of two pints of Oil to every 100 pounds of feed. Since there is very often an intestinal inflammation with these conditions and this is preventing proper digestion, we find it an excellent plan to use 8 Phen-O-Sal tablets to each gallon of drinking water in all cases of rickets.

CANNIBALISM

This subject is covered on page 15.

MUSHY CHICKS

Mushy chicks are sometimes found in incubators and sometimes in chick boxes the first day or two after hatching. There is usually a characteristic odor and the chicks

decompose and disintegrate very rapidly. This is due to a navel infection with a putrefactive bacteria. To prevent this condition chick boxes, brooders, etc., should be thoroughly disinfected with Dr. Salsbury's Hatchery Spray.

B. W. D.

While B. W. D. is a specific infection and there is no special treatment recognized at this time, we find that if the methods recommended for bowel and lung troubles are carefully followed out, losses can usually be held to a minimum. When B. W. D. is discovered in the baby chicks, the flock from which the eggs came should be tested or retested to remove any of the carrier birds that may be there at that time.

COCCIDIOSIS

Coccidiosis is more prevalent in late spring and early summer than it is in winter and early fall. The coccidial germs live in the soil and other places. It is mostly when warm weather approaches and when chicks come in contact with the infected material that they become affected with the disease. Coccidiosis is not inherited and is not spread through the incubator.

At the first sign of bloody droppings, watery droppings or any type of off colored droppings, start using 8 tablets of Pen-O-Sal to each gallon of drinking water and take the feed away from 9 A. M. to 3 P. M.

(See the next issue of the MESSENGER for full information on Coccidiosis.)

WORM PREVENTION

The prevention of worms can scarcely be started too early. Young chicks and poults are very susceptible to worm infection and untold damage can be done to the chick at an early age. The worm eggs are picked up with contaminated foods, they hatch and develop in the delicate intestinal lining where they set up inflammation and liberate poisons—all of which keeps the chick from growing and developing rapidly. Tape worms are carried by flies and many other filth eating insects.

In your worm prevention program include Avi-Tone, one-half to one pound per hundred pounds of mash, right from the start.

BRONCHITIS

True bronchitis as previously mentioned shows only a phlegm in the windpipe. This disease usually spreads quite rapidly, causes gasping for breath and shaking of the head.

The most satisfactory way to handle this trouble is to run the brooder 3 to 6 degrees (sometimes 10 degrees) higher than normal, spray the chicks thoroughly with Cam-Pho-Sal. The entire room may be thoroughly saturated by spraying Cam-Pho-Sal every hour and following the other precautions previously mentioned under Spraying. Eight tablets of Phen-O-Sal to every gallon of drinking water also helps to keep the intestines in good condition during this treatment.

DISEASES OF POULTS

Poults are susceptible to the same diseases as chicks and respond to the same treatments. Bowel disorders in poults may be due to several kinds of germs akin to B. W. D.

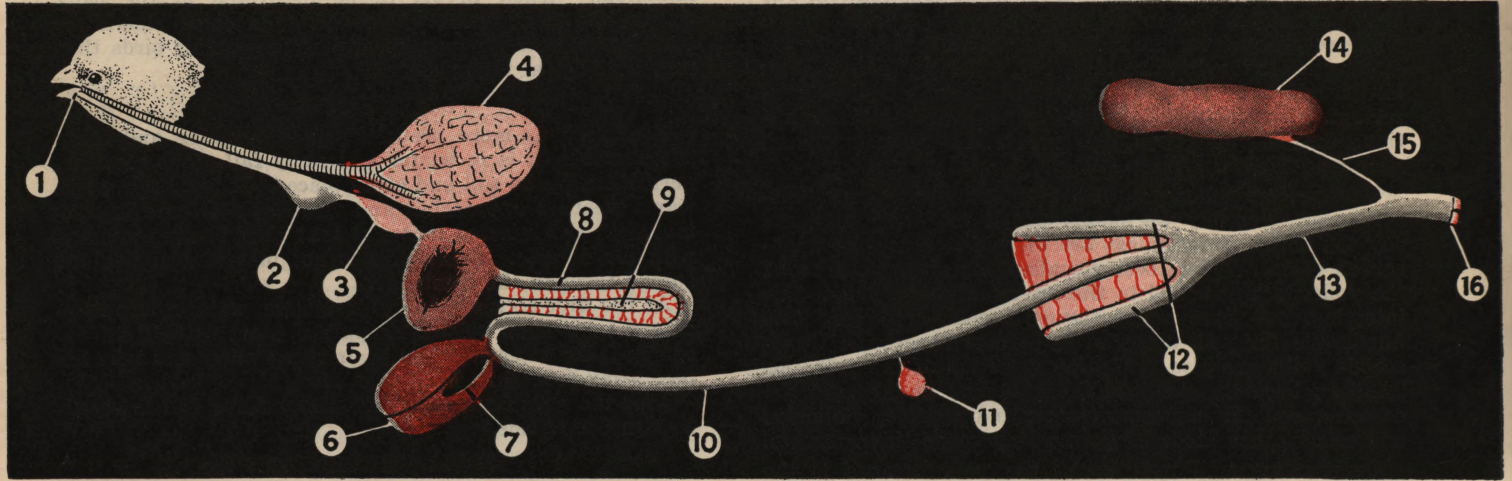
VENTILATION AND HEALTH

The flow of 2 cubic feet per minute per 100 chicks was found by Dougherty and Moses of California to meet their needs of electrically brooded chicks. This rate did not keep the hover dry after the chicks were three weeks old. Even 4 cubic feet per minute per 100 chicks did not keep the interior entirely dry until the chicks were six weeks of age. Dampness is noticed before the air becomes very bad. Excessive ventilation is unnecessary and becomes costly.

"OFF FLAVOR" IN EGGS

It was found by J. H. Vondell of Massachusetts that "off flavored" eggs were laid only by certain individuals. Some birds always laid "off flavored" eggs, other birds laid "off flavored" eggs intermittently.

... INSIDE WORKING PARTS OF THE 1933 MODEL CHICK!



- | | | | |
|--|--|--|--|
| 1 Pharynx where windpipe and gullet meet. | 5 Gizzard. | 9 Pancreas. | 13 Large intestine. |
| 2 Crop. | 6 Liver, normal color dark brown. | 10 Small intestine. | 14 Kidneys, dark in color. |
| 3 Glandular stomach (Pro-ventriculus). | 7 Gall bladder (green). | 11 Yolk with its attachment to intestine. Inflammation here prevents yolk absorption. | 15 Ureters conducts white secretions to cloaca. |
| 4 Lungs. Normal color is pink. Note the two bronchii leading into the windpipe. | 8 Duodenal loop. Contents creamy white. | 12 Ceca. Normal contents creamy to pasty. | 16 Vent. |

WHEN all of these working parts are kept healthy and functioning properly the chicks will grow and make you money. Therefore be on guard for Nature's outward danger signals that always tell what is going on inside. Nature always gives prompt warning when the inner parts are not working properly. Early attention to the danger signals prevents a lot of trouble later.

Diseases may be caused by a number of different kinds of germs, improper feeding and housing, as well as other factors that are not yet well understood.

Faulty ventilation, crowding or overheating and then chilling often seem to be causes of respiratory diseases, although infection may enter under the most ideal brooding conditions.

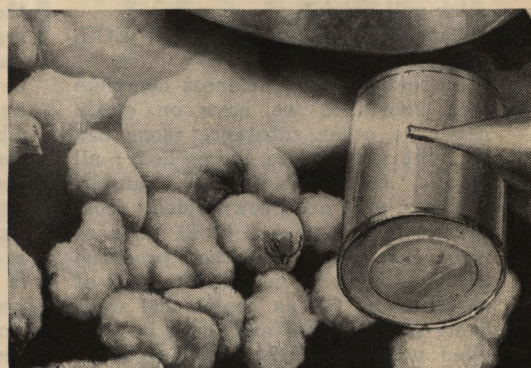
... **PROPER PREVENTION PAYS** ...

MAKE THIS YOUR POULTRY HEALTH GUIDE

● Following is a simple yet complete and accurate description of what you see from the outside of a chick when something has gone wrong inside. It also gives the methods of treatment that have given best results.

Watch These Danger Signs

- | | |
|--|---|
| 1—Yellow or off-colored droppings. | 5—Drooping wings; loss of appetite. |
| 2—Chicks seeking heat, huddling and acting sleepy. | At the first appearance of any of these signs, be prepared to use Dr. Salsbury's Baby Chick Remedies immediately. |
| 3—Gasping for breath. | |
| 4—Pasting up behind. | |



How to Confirm the Danger Signals

Upon opening sick chicks, one confirms the suspicion of diseases by finding:

1. Inflamed intestines.
2. Unabsorbed egg yolks.
3. Yellow liver, enlarged gall.
4. Discolored lungs; red, dark green or with yellow, cheesy spots. (Normal lungs are pink.) Phlegm in throat or bronchial tubes.
5. Blind pouches (ceca) filled with cheesy substance, white, yellow or brown in color; sometimes bloody.

DANGER SIGNALS Nos. 2, 3 and 4 indicate respiratory troubles and bowel disturbances combined, and it is important that a double treatment for both bowel and lungs be used.

Cam-pho-sal Solution Sprayed in a Fine Mist, Phen-o-sal in the Drinking Water and Avi-tone in the Mash Makes a Strong and Desirable Chick Raising Program.

What to Do

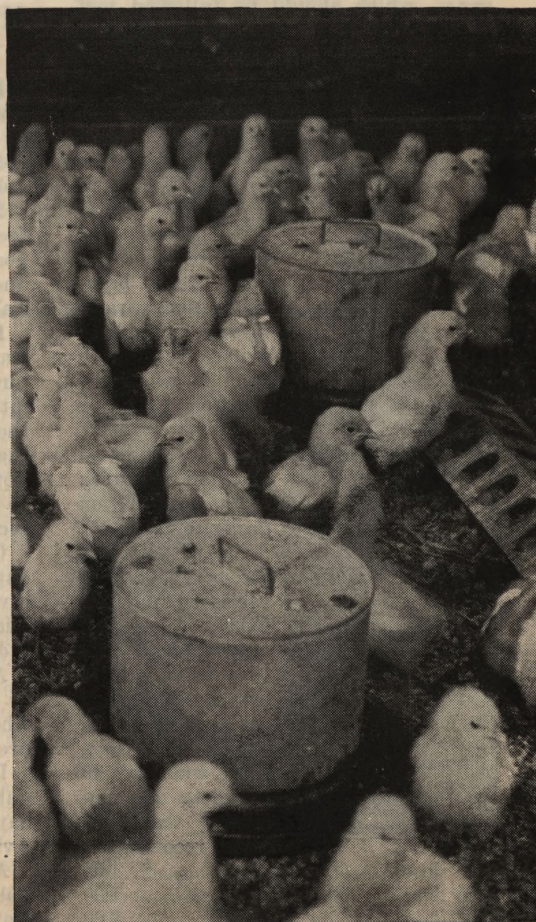
As early as possible, start spraying the birds with a solution of CAM-PHO-SAL. Use 3 teaspoonfuls of CAM-PHO-SAL to each one-half pint of water and spray a half-pint of this solution for each 400 chicks every time you spray. In severe cases spray once every hour during the first day; after that, spray 3 or 4 times each day. Spray at least twice each evening after the birds have settled for the night.

Chicks with pneumonia and bronchitis practically always have an intestinal inflammation and this should be treated by using 8 PHEN-O-SAL TABLETS in every gallon of drinking water. The same germs that cause pneumonia also cause diarrhea, and, therefore, best results are obtained when one gets after the germs from all angles at the same time.

DANGER SIGNALS Nos. 1, 2 and 5 indicate diseases of the digestive tract (Diarrhea) and should be treated as follows:

Use 2 PHEN-O-SAL TABLETS to every quart of drinking water to check the intestinal inflammation, to increase the disease resistance of the chick and help it fight the germs. PHEN-O-SAL also helps to build up the blood. It can be used in any kind of container including galvanized.

Start the treatment early and follow it through vigorously until the trouble is checked.



SEE YOUR LOCAL DEALER
Whose Name Is On The Back Page

Let Us Not Neglect the Parent Stock

What's in an Egg and Who Put It There?

MUCH is being said these days on how to care for baby chicks after they are hatched. But what about the mother hen that produces the egg from which the baby chick will hatch?

Consider for a moment AN EGG. What is it?

In reality it is the most complete food substance we have on earth. From no other substance alone can be built a complete living body; all organs, bone, blood, skin, muscle, feathers, etc., are grown chiefly from the white of an egg, in 21 days of incubation. The hen that produced that egg must be kept in the pink of condition as far as health and well-being is concerned and must be supplied with proper balanced feed rations to furnish the nutriment necessary in an egg to develop this complete life.

If the parent stock, the hen, is infested with internal or external parasites: lice, mites, worms or coccidiosis, it will not be able to do as good a job of producing a high-quality egg that is to hatch a high-quality and livable chick. Therefore, it is important to adopt into our poultry keeping a worm and disease prevention program, which should be followed just as religiously as our feeding sched-

ule. Like produces like, and the chick cannot have greater vitality than the hen that laid the egg.

Many folks have seen the handwriting on the wall and are taking all the necessary steps in following a regular monthly program to keep their fowls free from internal as well as external parasites. Disease germs and worm eggs are present everywhere and our flocks are exposed to them at all times. Therefore, we should assist in preventing worms and germs getting a foothold by treating our flocks at least once a month. It is not an extra burden or drudge nor is it an expensive procedure. By properly following a prevention program we increase our poultry profits, because only healthy birds can lay first-quality eggs that will produce first quality chicks. Second: The increased number of eggs offsets the cost many times over. Third: The mortality in the flock can be greatly reduced. Fourth: It is much more fascinating and enjoyable to any poultryman to care for a flock of good healthy, producing birds than it is to care for a scrawny, under-fed, unprofitable flock.

HERE IS THE PROGRAM Use It Once a Month

Put 8 Phen-O-Sal tablets into EVERY gallon drinking water or milk or both, for 5 days. Then use 6 Phen-O-Sal tablets to EVERY gallon for 4 days more.

Start using a moist mash as first feed in the morning on the same day you start your Phen-O-Sal treatment and on the 5th day start using Avi-Tabs:

Place 20 Avi-Tabs in one quart of warm water over night (for each 100 birds). In the morning, mix this solution with three quarts of mash. Mix thoroughly, and feed it to the flock the FIRST thing in the morning. Cover the hoppers the night before, so the birds cannot eat until they have received and eaten the moist mash.

Continue this treatment for ten days. (In severe cases of large worms give one of Dr. Salsbury's Kamala Nicotine Caps in the evening of the 5 days of Avi-Tab treatment.)

Avi-Tone may be used in either dry or moist mash instead of Avi Tabs when there are no microscopic worms present.

Use six Phen-O-Sal tablets to each gallon of water or milk, the same days that you use the Avi-Tabs or Avi-Tone.

After the birds have been on Avi-Tabs or Avi-Tone for three days, you may give the flock a dose of laxative, as follows:

$\frac{3}{4}$ pound of Epsom Salts mixed with Moist Mash or $\frac{1}{4}$ pound of Baking Soda in 4 gal. of water per 100 birds.

Keep the litter clean. When you clean out the poultry house, BURN the litter. Do not put it on land where poultry may run later.

Paint the roosts with Dr. Salsbury's Nic-Sal, to prevent lice.

Disinfect the house with Dr. Salsbury's Poultry House Disinfectant.

A healthy flock properly maintained will give you more eggs—and—cheaper.

This Is How We Brood Our Chicks

At The Idlenot Poultry Farm,
Sumner, Iowa

TO SUCCESSFULLY brood chicks there are several definite things to keep in mind. As this article deals only with brooding so will take for granted that the chicks are of high quality and livability.

First, the house: See that the house is clean, properly demitted and disinfected so as to kill off all germs and vermin left in the house from the year before. See that the floors are dry and if at all possible the house should be moved to clean ground that hasn't had any chicks or poultry manure scattered on it for the past two years. A house 10x12 or 14 will accommodate about 350 chicks with a 54 to 60 inch canopy over the brooder stove. A larger canopy in the same size house will not increase the capacity of the house.

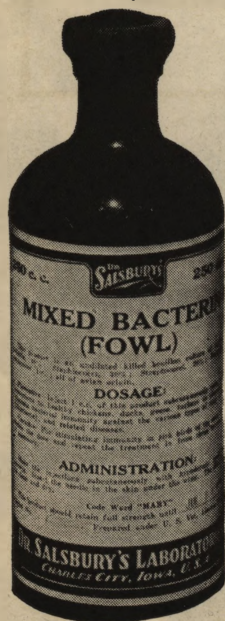
Second: Have everything in readiness when the chicks arrive. As the chicks know better when they are hungry or ready to eat, than anyone can guess, have all the feeders and waterers ready, using one inch of feeder space per chick.

As the chick's body is approximately 70% water and water is one of the cheapest materials we have, provide one 2 quart waterer for every 60 chicks.

Third: A ring of wire netting placed around the brooder stove about 30 inches from the edge of the hover for the first few days helps to teach the chicks where the supply of heat comes from and also helps to keep them from piling in the corners and becoming chilled.

Fourth: Place a piece of plaster board about 2½ to 3 feet high on the inside of the door to break the cold air waves that are bound to flow in when the outside door is opened. This protects the chicks against sudden drafts. A tested thermometer should

MIXED BACTERIN (FOWL)



A bacterin for the treatment of colds, roup, bronchitis, and various diseases of the head and respiratory tract in which the common disease germs are found. Each dose is based on a full c.c. which means that if you decide to use $\frac{1}{2}$ c.c. dose, you get twice the amount of bacterin for the money.

Use mixed bacterin in the fall to prevent roup and colds. Use it on birds that have colds and roup to stimulate an immunity that will hasten recovery.

60 doses, 60 c. c.	1.50
250 doses, 250 c. c.	5.00
500 doses, 2-250 c. c.	8.00
1000 doses, 4-250 c. c.	15.00

be hung from the ceiling with a string to about 2 inches from the floor and 4 inches from the edge of the canopy. The temperature there should run from 85 to 90 degrees the first week and 2 degrees lower each week thereafter. Where a stove is used without a canopy that heats the entire room. The temperature should be gauged about 15 inches from the stove and two inches above the floor.

To keep the chicks from crowding or piling into corners a dim, electric light or kerosene lantern can be hung in the brooder house so the chicks can see just enough to find their proper sleeping places.

The second week for light breeds or third week for heavies, I advise to place roosts into the house especially along the back wall. 2x2 strips may be used as carriers running from 12 inches high on the back side sloping to floor level about 24 to 30 inches long covered with 1/2 inch sparrow netting. Laths are then nailed on top about 3 inches apart. In this way the chicks will soon acquire the habit of going on the roosts which is an advantage in several ways. First, it will help the chicks away from the droppings: Second, chicks have a better supply of oxygen when sitting on the roosts separated than when huddled together on the floor; and third, in case of piling on the roost, the bottom ones will not be smothered because they have access to air from below.

Oxygen is very important in a brooder house. The chick requires about one cubic foot of air every hour. A cheap ventilating system can be installed by placing two 6 inch tubes as out-takes in opposite corners running from about 10 to 12 inches from the floor to two or three feet above the highest point of the roof. In-takes can be provided by placing the same size tubes in the other two corners drawing the air in low outside, carrying it through the wall and entering it at the highest points in the respective corners.

There are many good floor coverings to be used on the board or cement floors: Oat hulls (vim), coarse, flaky bran, peat litter that is not dusty or good clean straw. In case wire floors are used in the house, I would advise to cover them with newspapers several thicknesses deep so that all one has to do is to roll up a layer once or twice a day. In that way you have clean papers to feed from and are also disposing of the droppings frequently. If a movable house is used care should be taken so that drafts will not come through under the floor by banking it up with straw or earth around the outside so as to make it air tight at the bottom. This will also eliminate cold floors. Unless a cold room and warm room can be provided, place the stove a little more to one end of the house and not in the center. This will give the chicks an opportunity to get away from the intense heat.

For Your CHICKS and POULTS use .. AVI-TONE

The friend of Poultrymen everywhere.

Start your chicks and poults with Avi-Tone in the mash.

You will be surprised to see how much better they will grow and how much feed you will save.

Avi-Tone is a vitality builder.

Avi-Tone improves the appetite.

The tonic drugs help the body build resistance.

Avi-Tone also aids in preventing worm infestation.

Avi-Tone is inexpensive to use. It takes only a little because it is 100% pure drugs. It contains no filler.

The feed cost saved by using Avi-Tone alone more than pays for its use not mentioning the better health in your birds, the faster development of your flock, the culls you will not have, and the worms you will prevent, which are the poultryman's enemies, wasting feed and destroying the fowls' health.

Plan to use Avi-Tone and start your chicks right. Be convinced like thousands of poultrymen are, who would not think of starting their chicks without Dr. Salsbury's Avi-Tone.

Get it from your Dealer. His name is on the back of this Magazine.

It is put up in handy sizes to suit every sized flock. Avi-Tone comes in dry Powder form and is easily mixed with wet or dry mash.



If two or three quarts of water can be steamed into the room by means of a bucket on top of the stove or humidifier attached to the smoke stack of the hover, much better development and feather-growth will be obtained. Use Cam-Pho-Sal either as a spray about one-half pint per 500 chicks or evaporating it through the humidifier or a bucket of water every evening after the chicks have settled for the night. This kills off the germs in the dust laden air and also stimulates the respiratory tract of the chicks. It will also aid in developing feather growth and preventing bare backs.

As direct sunshine is good for all growing fowls or animals, I recommend to get the chicks outside as early as possible on nice days. Do not crowd them out of the house but fix a pen or screen porch on the south side of the house so that they can get out at will.



CHOLERA-TYPHOID BACTERIN

A bacterin for the prevention and treatment of cholera and typhoid in chickens, turkeys, ducks, geese, etc. When in doubt, as to whether your chickens are dying from cholera or typhoid, use the Cholera-Typhoid Bacterin. 1 c.c. is

the average dose. Protect the chickens in your flocks by vaccinating.

Notice: One full c.c. per dose.

60 doses,	60 c.c.	\$1.50
120 doses,	2-60 c.c.	2.75
250 doses,	250 c.c.	5.00
500 doses,	2-250 c.c.	8.00
1,000 doses,	4-250 c.c.	15.00

Laboratory Diagnosis . . .

LABORATORY DIAGNOSIS is conducted as a free service at Charles City. If the local service dealer cannot tell exactly what the trouble is in your flock or cannot get the situation under control, birds may be sent to Charles City for complete laboratory examination.

Baby chicks are sent in ordinary shipping boxes. Grown birds may be sent in light crates that have a tight bottom

and plenty of absorbent material. The tight bottoms and absorbent material prevent infection from scattering. Select typical specimens and send two or three so that we will be sure to get a fair representation.

Reports of laboratory findings with suggestions for control are sent just as soon as the diagnosis is made, usually within 24 hours.

RICKETS

From Wisconsin we received three chicks about three weeks of age showing stunted growth and improper development. The birds were unable to stand and on examination the bones and beaks were quite soft. The bowels seemed to be in good condition, feathering was retarded.

Our Reply:

These chicks showed typical symptoms of rickets. Evidently they are not getting sufficient Cod Liver Oil, direct sunshine or lime. Use 2 pints of Cod Liver Oil to every 100 pounds of feed, supply them fresh lime and expose the chicks to sunshine as much as possible. Eight tablets of Phen-O-Sal in each gallon of drinking water will help the absorption of these nutrients.

BROODER PNEUMONIA

From Illinois we received five chicks with the history that many of the chicks were gasping for breath while others were not. Many of them were pasted up behind. Most of the flock was unthrifty and not developing properly.

Our Reply:

On post mortem examination cheesy nodules in the lungs were the most outstanding finding. The birds that were pasted up behind had some constipation. The infection has apparently settled chiefly in the lungs but is present elsewhere in the system. This is why the birds are not developing as they should. The disease should be attacked by separation of the sick and healthy birds, a thorough cleaning and disinfection, providing plenty of fresh air without drafts and without chilling.

Spray with Cam-Pho-Sal as directed on page 6.

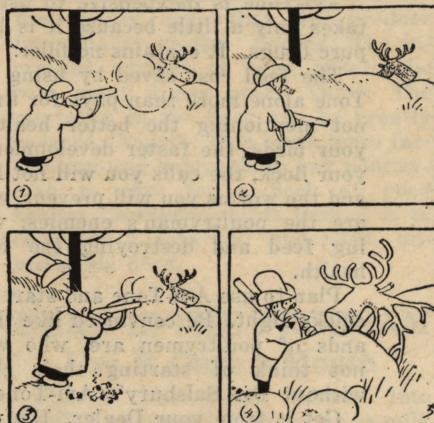
To check the bowel disturbances use 8 Phen-O-Sal tablets in each gallon of drinking water for 4 days, then drop 6 tablets for 4 more days.

PASTING UP BEHIND

Two chicks were sent in from Minnesota with the statement that a great many of the chicks showed pasting up behind and those that are affected become short and develop long wing feathers. They stand around and chirp. Usually sick several days before they die. The chicks become thin and literally dry up.

Our Reply:

These chicks had considerable inflammation of the intestinal tract and the posterior bowel was full of material. Such chicks should receive a good laxative, then be followed with Phen-O-Sal in the drinking water to allay the intestinal irritation. Very often such chicks have lung trouble and therefore the Cam-Pho-Sal spray should be used both as an antiseptic and respiratory stimulant.



—Cartoon by Jacobson.

BRONCHITIS

A group of chicks from Ohio came from a flock where the chicks became sick suddenly, gasping for breath, threw their heads from side to side trying to dislodge something in their throat. There seemed to be no bowel disturbance, no pasting up behind.

Our Reply:

These chicks had the bloody mucus and the phlegm characteristic of bronchitis. This is a specific virus disease and radical measures of attack must be initiated. The temperature should be run high, drafts should be avoided and yet fresh air must be provided. Tubes should be arranged so that the cold air is drawn off from the floor and fresh air is introduced from near the ceiling.

The chicks should be sprayed every hour with Cam-Pho-Sal. While spraying they should be confined to as small a space as possible so as to get a concentrated treatment.

B. W. D.

A group of chicks from South Dakota came from a flock that had not been tested. They began dying on the third day and had gradually been in-

creasing in death rate during the first week. Some chicks have a diarrhea, some do not. Some die without showing any symptoms, others become thin.

Our Reply:

These chicks showed the inflamed reddish to ochre colored liver, the cheesy plugs in the ceca that were easily removed on scraping. Some of the yellowish, small nodules in the lungs all of which were characteristic of B. W. D. infection.

These chicks should be treated as recommended for B. W. D. on page 7 of this issue and the parent stock should be tested for white diarrhea before eggs are saved for further hatches. Some of the chicks in this lot also gave positive reaction to the Antigen test. This test is sometimes useful in detecting the disease in young chicks. Reactions will show up if the chicks have had the infection for several days before they die.

Dec. 8, 1932.

We started using your Antigen late last season, having used another brand earlier, which was not nearly so satisfactory.

—Howard F. Hughes,
Hillsboro, Oregon.

"How much are eggs?"

"Fifty cents a dozen—thirty cents a dozen for cracked ones."

"Good—crack me a dozen."

Dr. Salsbury's

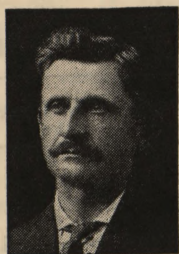
MITE DEATH and POULTRY HOUSE DISINFECTANT

For keeping brooder and chicken houses free of mites and other vermin, as well as disease germs, this disinfectant fills the bill.

For disinfecting the hen house after the fall clean-up to make it safe for the new flock of layers, use Mite Death and Poultry House Disinfectant. It kills the germs and mites.

Quart can	\$1.00
Half gallon can	1.50
Gallon can	2.50

Why We Vaccinate for Bacterial Bronchitis



By GEO. E. "DAD" RICK

WE can first answer this question by saying that the reason we vaccinate is because we get results and here is how we do it.

Just the other day a party having a flock of 200 pullets dying rapidly called me up and said, "Dad, I have been investigating your work vaccinating for bronchitis and I think I better get busy in my flock. At the present death rate I will be out of business in about 30 days. I carried out 40 dead ones this morning. What do you think I better do?" (This man lives within 100 feet of the President of the Utah Poultry Association.)

As a result of this conversation we made a trip to visit some of the farms where we had vaccinated with Mixed Bacterin so that we could get the history first hand. At farm No. 1 the question was asked, "What do you think of this work?" The reply was, "I don't think at all. I know. It is the only thing for you to do and I am speaking from past experience."

Farm No. 2 across the street from home, had a flock of 450. They had been vaccinated four or five days before. To a similar query the reply was, "The only thing we hate about it is that we didn't take 'Dad's' advice and do it sooner. Next year we are not going to put pullets into laying quarters until they have been vaccinated."

Farm No. 3 had 750 birds that had been vaccinated three months before. This flock of Group 1 had come down with bronchitis, had been vaccinated with Dr. Salsbury's Mixed Bacterin, 1 c. c. dose, and had come through with a very small loss. Group No. 2 did not have bronchitis but were vaccinated with 1 c. c. Mixed Bacterin. None of the birds took the disease and all were over 50% production. Was the owner satisfied? Yes, you bet.

Farm No. 4, the owner had 6 hopeless looking cases penned up and expected them to die any minute. We gave them 1 c. c. Mixed Bacterin and in 24 hours four had recovered sufficiently to be put back in the coops and two had died. (We do not advise putting birds back in the coop as early after recovery.)

All the flocks that we have vaccinated around Lehi have shown a wonderful improvement in from 36 to 48 hours. One of the flocks treated in a so-called official way, not by the Salsbury method and not vaccinated, lost 400 birds out of 1,100 and in another flock there was a 275 loss out of 700 birds. We feel sure that this loss would have been largely saved if the birds had been properly vaccinated.

Personally, I feel well repaid for having done the best I could to help the unfortunate flock owners.

REMODELED HOUSE FOR 75c

I certainly enjoy reading the MESSENGER each issue. Here's a little information for you. My pullets have begun to lay the past three days. They were hatched about the first of June and had to put up with coccidiosis and tape worms all summer and fall, but nevertheless, at the age of six months past with the aid of Salsbury's Remedies they have begun to shell out a few eggs. I remodeled my henhouse this fall. The old building was 10x40 feet. I put on eight feet more on the front side making it now 18x40 feet with an open front clear across the south side. Covered the roof with a lot of long coarse bottom hay that turns the rains good. All the expense I had was 75c for nails and the work which I did myself. There was enough lumber on the high side of the old front to box up the ends and one side of the new part I put on. A long narrow building is like a narrow street alley. You cannot check the draft in this kind of a building. I have built four Mo. type poultry houses for other poultry raisers in my community the past five years. Two 30x30 houses and two 20x20 houses. I am always interested in getting other people to build the right type of a henhouse.

—Herrold Hatchery and Poultry
Farm, Schell City, Mo.

PIGEON STRAIN—FOWL POX VACCINE

We have recently been granted license by the Federal Bureau at Washington to manufacture Fowl Pox Vaccine, pigeon strain. This type of vaccine is particularly recommended for vaccination of birds in production. The take is not as severe as the chicken strain of vaccine and in some cases a duration of immunity may not be as great. Pigeon strain vaccine has been very popular in vaccinating laying and mature birds during the fall and winter. The chicken strain is still used for vaccinating young birds.

The pigeon strain is marketed in packages containing 100 doses and 500 doses. The price is the same as the Chicken Pox Vaccine. See page 14.

"Can you imagine anyone going to bed with his shoes on?"

"Yes, my horse does"



When labored breathing is noticed

When chicks paste up behind

When chicks sneeze, or have a discharge at the nose or eyes

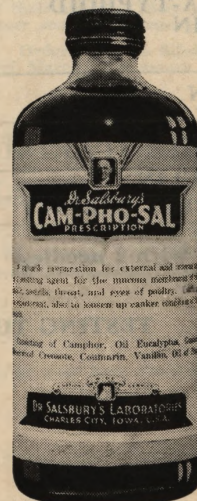
SPRAY THEM WITH CAM-PHO-SAL

It kills germs.

Cam-Pho-Sal is in a class by itself. When all others fail, Cam-Pho-Sal produces results if used according to directions, and for its intended purpose.

Cam-Pho-Sal is composed of powerful healing and soothing oils but is not injurious. It is non-inflammable and concentrated medicine. You add the water. Cam-Pho-Sal is a "Cough Syrup" for Poultry.

Small bottle makes 2½ qt. of spray	\$ 1.00
Medium bottle makes 5 qt. of spray	1.50
Large bottle makes 2½ gal. of spray	2.50
Quart can makes 5 gal. of spray	
Gallon can makes 20 gal. of spray	17.50



Makes an ideal antiseptic for treating sores, burns and cankers.

DR. SALSBUURY'S COMPLETE LINE

Preparations	Size Packages	Price	Uses
AVI-TONE 100% Medicine	5 lb. carton 15 lb. drum 25 lb. drum 50 lb. drum	\$ 3.00 8.25 12.50 24.00	Flock treatment for worms, worm preventive and general tonic. For baby chicks and turkeys, growing stock and laying flocks. In powder form.
AVI-TABS	50.....\$.60 100..... 1.00 200..... 1.75 400.....\$3.00 1000..... 7.00		Wormer and tonic in tablet form. For flock treatment.
KAMALA NICOTINE COMBINATION WORM CAPS	Small Size—10 to 16 weeks 50.....\$.75 100..... 1.25 200..... 2.25 300.....\$3.00 500..... 4.50 1000..... 8.00 Large Size—16 weeks and over 50.....\$1.00 100..... 1.75 200..... 3.00 300.....\$ 4.50 500..... 6.75 1000..... 12.00		Individual treatment for tape and round and pin worms in chickens, turkeys and other fowls. A properly coated tablet that is easy on the birds.
PHEN-O-SAL PRESCRIPTION TABLETS	50.....\$.50 125..... 1.00 300.....\$2.00 500..... 3.00 1000..... 5.50		Excellent corrective for diarrhea and coccidiosis of chicks, Fowl Typhoid, Fowl Cholera, Enteritis, irritation from worms, Blackhead in turkeys, also duck and goose cholera.
CAM-PHO-SAL PRESCRIPTION	Small bottle Medium bottle Large bottle	\$ 1.00 1.50 2.50	For roup, colds, flu, gapes, bronchitis, brooder pneumonia, etc., in fowls of all ages. Pure medicine to be diluted with water.
STOP-PICK	6 oz. can 16 oz. can	.50 1.00	A preparation for toe, vent, tail picking, and all forms of cannibalism in poultry.
MITE DEATH AND POULTRY HOUSE DISINFECTANT	Quart can Half gallon can Gallon can	1.00 1.50 2.50	To control mites and disinfect poultry houses. A powerful germ killer and insect destroyer.
NIC-SAL	½ pint 1 pint 1 quart 1 gallon	.75 1.25 2.00 6.00	A nicotine preparation to paint on the roosts for lice.
LOUSE POWDER	1 lb. sift top can	.40	Very effective for dusting fowls for lice. May also be used in the nests to keep down vermin.
HOG WORM OIL	Quart can Half gallon can Gallon can	1.80 3.25 6.00	To kill round worms in hogs. A two ounce all metal syringe for administering oil, \$1.20.
HATCHERY SPRAY	Quart can Half gallon can Gallon can	2.75 4.50 8.60	Effective germicide for spraying eggs and incubators. Not poisonous.
RAT DEATH	4 oz. can	.50	A Red Squill preparation that kills rats and mice only.
FOWL POX VACCINE Chicken and Pigeon Strains	100 dose pkg. each 500 dose pkg. each	1.00 4.50	To prevent Chicken Pox by feather follicle or stick method of vaccination.
MIXED BACTERIN, FOWLS	60 doses, 60 c.c. 120 doses, 2-60 c.c. 250 doses, 250 c.c. 500 doses, 2-250 c.c. 1000 doses, 4-250 c.c.	1.50 2.75 5.00 8.00 15.00	A preventive and curative treatment against roup, colds, and related diseases affecting the head of chickens and turkeys. Note that you get one full c.c. per dose.
CHOLERA-TYPHOID BACTERIN	60 doses, 60 c.c. 120 doses, 2-60 c.c. 250 doses, 250 c.c. 500 doses, 2-250 c.c. 1000 doses, 4-250 c.c.	1.50 2.75 5.00 8.00 15.00	To vaccinate for Fowl Cholera and Fowl Typhoid in all poultry, both preventive and curative.
ANTIGEN	Write for special literature		Blood or slide test for B.W.D. The Ultra-Rapid Antigen Test.
PULLORIN	Write for special literature		Wattle method for B.W.D. testing.
TUBERCULIN	100 tests, 5 c.c.	2.00	For T. B. testing. Wattle method.
B.W.D. TEST CABINET	Complete equipment	5.00	For rapid Antigen test.
SYRINGE Complete with 2 needles.	10 c.c. 2 c.c.	2.75 3.50	Lifetime Bacterin syringe. Pullorin or Tuberculin testing syringe.

TESTING TUBES—SYRINGE NEEDLES—DISSECTING SETS—OTHER EQUIPMENT

Cod Liver Oil—Write for quotations in barrel lots.
Garget—Special Bacterin for Garget. Write for special literature.

Blood tests for abortion—15 cents each.

DR. SALSBUURY'S LABORATORIES **BOX 140**
CHARLES CITY,
IOWA

Cannibalism and Feather Picking

DURING the last few years cannibalism in poultry ranging from baby chicks on has become quite a serious trouble. It usually starts with feather picking or toe picking and ends up in picking the flesh and blood to a very serious degree.

Two things are necessary to prevent early tendency to cannibalism. First, is a well balanced ration containing a proper balance of proteins and minerals. Second is proper temperature. A third classification could be added, that of idleness.

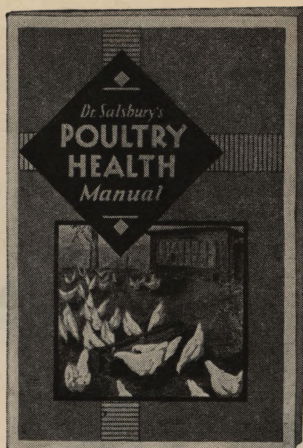
In balancing the ration just the proper amount of protein for good growth, the right amount of minerals for good bone growth, sufficient bulk for keeping the intestinal tract fairly full and Cod Liver Oil for lime deposition should be provided. These things are included in most of the good prepared feeds.

High temperature stimulates feather picking and also retards feather growth. It is well to arrange brooders or brooding houses so that the entire place is not heated at the same temperature. It is a good plan to have a warmer place for the chicks to sleep and a cool place for them to scratch and eat. The cooler temperature will develop better feathering and tend to more contentment.

Plenty of grit in the gizzard seems to give a more satisfied feeling. Some fresh succulent greens for chicks to pick at may be resorted to.

Should the picking habit break out, the flock should be treated with Dr. Salsbury's Stop Pick. This is a red colored bitter tasting preparation that resembles blood and flesh. The chicks pick it and discover that it is not the pleasant tasting blood that they expected. If after two or three attempts to get a mouthful of blood they only get this bitter substance, they soon decide that everything that looks red is bad tasting and they stop the picking habit.

It is an important point to remember that enough of the Stop Pick should be applied so that all chicks that have a tendency to pick things of that sort get an opportunity to find out what it actually is. Darkening the windows will help in many cases and, when possible, birds may be put out on the grass range.



POULTRY DISEASES

Illustrated in Natural Colors

● HERE at last is a textbook on poultry diseases that depicts all the common ailments of poultry by means of pictures of the diseased organs in natural colors.

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