

# *The* **POULTRY** **HEALTH**

## ***Messenger***

### ***FEATURED IN THIS ISSUE***

#### **Baby Chick Number**

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# *The* **POULTRY HEALTH Messenger**

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Dr. Salsbury's Laboratories

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**WHEN YOU MOVE**—Don't forget to tell us about your new address. We want you to have an unbroken file of the **POULTRY HEALTH MESSENGERS** so your library on Poultry Diseases will be complete and up to the minute.

Just a postcard with the old and the new address will do. Thank you!

## **RUTS**

The world is full o' ruts, my boy,  
Some shaller and some deep;  
An' every rut is full o' folks  
As high as they can heap.

Each one that's growlin' in the ditch  
Is growlin' at his fate,  
An' wishin' he had got his chance  
Before it was too late.

They lay it all on someone else  
Or say 'twas just their luck—  
They never once consider that  
'Twas caused by lack of pluck.

But here's the word o' one that's lived  
Clean through from soup to nuts:  
The Lord don't send no derricks round  
T' hist folks out o' ruts.

—Peoria County Farmer-Junior.

## **The Meaning of a Word**

One word is so loosely used that I hope some publisher of a dictionary will leave it out of his next edition, or mark it obsolete.

The word is "guaranteed."

Today I received calls from three salesmen—shirts, clothes and books. Each announced that his product was guaranteed. I questioned each closely to find out what was meant. The shirt man and the clothes man said that I must be entirely satisfied or I could have my money back.

"Do you mean," I asked the shirt man, "that these shirts at three for five dollars will satisfy me as well as shirts costing three times as much?"

He confessed that he didn't mean that. The guarantee, I concluded, merely meant that if I raised enough fuss and made myself thoroughly disagreeable, I could have my money back. The other guarantees meant no more than that.

My attitude may be wrong, but when anyone proposes to guarantee me against loss or dissatisfaction, I immediately become suspicious. For example, I don't want seeds or rose bushes that are guaranteed. After I've toiled in a garden, it's a small satisfaction to get a free package of lettuce seeds when the first lot has failed to germinate. No reasonable money payment can offset my disappointment.

Who wants a guaranteed haircut, or a guaranteed pipe, or a guaranteed dog? In these, as in the other purchases, we want all that the word "guaranteed" means in its noblest sense, but we do not care to harbor the suspicion, while we are falling in love with our Irish terrier, that he may turn out to have a little German police in him.

When we buy things we want them right. Guarantees don't make things right. They just make a lot of trouble.—**WILLIAM FEATHER**. Copyright 1933.

## **Something New in Poultry Education**

Dr. Salsbury's School of Poultry Diseases which is now an accomplished fact marks another long step forward in poultry disease education.

The first school opened in Charles City, Iowa, on January 15 with a class of 16 students who came from different states as far away as Pennsylvania and Colorado. On February 9 the graduates from the first school received their certificates as Poultry Disease Technicians. They have returned to their various homes much better qualified than ever before to help the poultry raisers of their community.

The first class was a very enthusiastic one and its members are well pleased with the training that was given them. The forenoon of each day of the school was devoted to classroom lectures and quizzes, while the afternoons were mostly taken up with laboratory work, including clinics and post mortem work.

The second school which starts February 19 will have students from as far away as Alabama and Texas. Present plans are to start a third school on March 19.

Dr. Salsbury's School of Poultry Diseases is strictly educational and is conducted by a staff of full time resident instructors who are recognized as some of the leading authorities on poultry diseases in America.

Any one who wishes to secure the necessary fundamental training on poultry diseases which is necessary to succeed in the poultry business is invited to come to the school. A complete catalog will be sent free upon request to anyone interested in the course.



# How to Keep Baby Chicks

**A** CHICK just out of the shell is practically always free from disease germs and parasites of all kinds. A newly hatched chick is as free from infection as it is possible to be.

In starting out to care for the young chicks it is therefore a matter of keeping them as free from disease germs and parasites as possible. When they are started free from infection this should not be such a hard job, and as a rule it is not. It is not at all unusual to raise from 97 to 100 per cent of the chicks put in the brooder house. There is only one thing that makes this possible and that is freedom from disease. Of course, good feed, proper ventilation and comfortable quarters are necessary. But even these may vary a good deal if disease germs can be kept out.

## THE THREE SECRETS

**Brooding in Small Lots.** One of the secrets of keeping chicks healthy is to brood them in small lots; 200 to 300 chicks under one hover is much better than a larger number. If large stoves are used it is better to partition the room off so that the chickens will be confined to one section rather than to roam over the entire building. The reason for this is that should only one chick be affected with disease, he will soon have an opportunity to spread it to the entire flock. While the chick is hatched free from disease in most cases, a few may not be and the ones that were healthy will soon contract disease after being exposed. Small lots help to check the spread of disease should it appear.

**Cleanliness.** The second secret is cleanliness. Frequent change of litter and thorough cleaning every week should be insisted upon. During the first few days it is best to change the feeding papers after each feeding or litter around the feeding troughs every few days. With cleanliness goes disinfection. After each cleaning the floors and equipment should be disinfected. It is not necessary to use a fowl smelling, terribly penetrating preparation in order to get a good job of disinfection. The more refined antiseptic such as Dr. Salsbury's Hatchery Spray is much more suitable than cheap dips for disinfecting where the baby chick is to live. Odor is no indication of antiseptic value and a pleasant smelling preparation can be just as valuable from an antiseptic standpoint and even more so than a foul smelling one.

In disinfecting a brooder, half of the building may be done at one time and this portion may be screened off with poultry netting fastened to frames. These frames covered with netting find many uses about the poultry plant. As soon as the disinfectant has begun to dry the chicks may be put on the clean half and the remainder treated immediately.

**Regularity.** A third secret is regularity.

Keep the temperature regular as well as the ventilation and the feeding habits. Regularity in feeding develops good digestion because the organs get accustomed to feeds at certain times. Where the all-mash method and hopper feeding is used, this is not so essential. One hour of over-

## ♦ Healthy

heating, over-crowding or foul air poisoning may ruin all the other work you have done so carefully. There seems to be no particular preference to hopper feeding as compared with hand feeding at regular intervals. Both systems work when properly used.

A good prepared mash is reliable and may be depended upon for good results. Home made mashes are apt to vary in quality because of the difficulty in properly preparing them. When a person has an abundance of grains they naturally want to use them as much as possible. There are a variety of formulas available that may be used under these conditions.

Keep in mind that the essential parts of the ration are the proteins to build the body, the lime and phosphorus to build bones and the carbohydrates for heat and energy. Protein supplement may be had on the market for mixing with home grown grains. A mixture of two or three grains is always better than one grain alone. Excessive bulk and fiber should be avoided.

## Medication

Under ideal conditions and with perfectly healthy chicks, medication is not always necessary but since conditions are seldom ideal and since disease germs may get in from so many different sources, it pays good profits in better health and uniform growth to use regular medicinal treatments to keep the flocks healthy.

Daily treatment of baby chicks using PHEN-O-SAL right from the start in the drinking water, milk or both helps a good deal to aid the digestion, to ward off disease germs and furnish some of the necessary blood building elements for the chicks. After the first ten days use a PHEN-O-SAL treatment two days each week until the birds are three to five months of age at which time it may be extended to four or five day treatment once every month. These regular treatments help to correct many bowel troubles that may be in the early stages of development and to check infections before they have a chance to start.

As a rule when chickens start to get sick, they are VERY SICK before they attract attention. In fact, they are often beyond help when they are noticed. Medicine at that time is given too late because many of the birds are hopeless and others have become very badly infected. By adopting a regular weekly or monthly treatment much of this infection can be stopped before it has had a chance to do damage. It has been demonstrated time and again that the healthy chick is the profitable one—the one that grows rapidly and

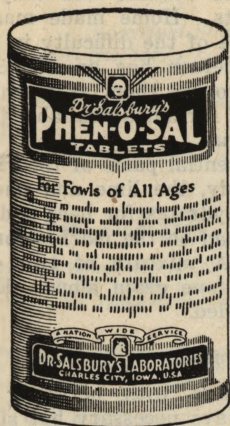
develops into a worth while pullet and hen. It is worth while spending time and money as well as medicine on keeping the chick healthy to give him the maximum opportunity.

Respiratory diseases are very common in young chicks. A little cold in the nose, a little pneumonia and





# To Preserve THE HEALTH of the BABY CHICKS AND KEEP THEM GROWING LET



## Help You

Bowel troubles which upset digestion are the beginning of nearly all forms of losses in baby chicks. Help combat the common digestive upsets by using the PHEN-O-SAL treatment right from the start. One tablet to each quart of water for the first two weeks is very essential.

PHEN-O-SAL is mild and safe for the youngest chick. It furnishes needed blood building elements and tones up the delicate digestive organs so they can function more normally.

Let PHEN-O-SAL help you with your chick raising. Let it carry the worries and the burdens for you.

Used in drinking water, milk or feed. May be used in any kind of container.

It does not corrode vessels.

Also good for old hens in checking common bowel troubles.

Your dealer has it in the following sizes:

50 tablets.....	\$ .50
125 tablets.....	1.00
300 tablets.....	2.00
500 tablets.....	3.00
1000 tablets.....	5.50

In buying the PHEN-O-SAL treatment figure one tablet for every 2 chicks and one tablet per grown fowl.

bronchitis will get in even under ideal conditions. Much of this may be prevented by regularly spraying the chicks with a solution of CAM-PHO-SAL each evening after they have settled for the night. The medicine in CAM-PHO-SAL stimulates the respiratory tract to throw off the extra secretions and kill off infection. The medicated spray helps to settle the germ laden dust in the air and adds much needed moisture. CAM-PHO-SAL also helps feather growth.

These two medicines, PHEN-O-SAL and CAM-PHO-SAL, should be in the medicine chest ready for use the minute the chicks are put in the brooder.

### What to Do When Trouble Appears

If you notice any of the young chicks standing around with a sleepy attitude, if they have lost their pep and interest in life, you better check up to see if they are sick and what may be the cause.

There may be a little constipation which may appear like a white diarrhea. Often the bowels become clogged with the bulky residue of digestion that has not passed through normally. The secretions from the kidneys come into the cloaca above and behind the intestinal material. Therefore, when the chick is constipated the kidney secretions pass out and the condition may be called white diarrhea when it really is constipation. Such chicks should be given a mild laxative at once and then PHEN-O-SAL, 8 tablets to the gallon should be given for three or four days to correct the bowel disturbance. Very often bowel trouble also causes lung trouble. In fact, the two go together more often than is commonly realized. For that reason best results for the health of the chick are obtained when treatment for the lungs is started early. That is where CAM-PHO-SAL plays an important part in regaining and maintaining health.

The CAM-PHO-SAL spray, used as frequently as the condition seems to warrant, will help a good deal in killing off any germs that might be present and also in keeping the breathing organs in good condition. In mild cases spraying every evening after the chicks have settled for the night is sufficient but when real trouble breaks out, when chicks stand around and gasp in large numbers, spray every hour or two and use one pint of the spray solution to every 500 chicks at each spraying. Prompt treatment if any trouble shows up is most important.

Probably 90 to 95 per cent of baby chick troubles fall in the class of bowel and lung troubles either singly or combined and will respond to the treatment just mentioned.

### Leg Weakness and Cannibalism

In early hatched chicks leg weakness must be guarded against. This is done by including plenty of cod liver oil in the feed and by having a

good grade of oyster shell available. When chickens are kept indoors without much sunlight it takes plenty of cod liver oil and lime to build good bone. When chicks are crowded into small quarters and fed a highly concentrated ration they sometimes develop a habit of self picking, often called cannibalism. Chicks may pick each other's toes, vent, tail, wings or eyes until it becomes a serious menace. Here again early treatment is important. Use some Stop Pick on about 10 per cent of the chicks in the flock. This is a red salve with a disagreeable taste that tends to stop the picking habit.

Another method is to paint all the outside openings with PAINT-O-SAL. (All openings must be covered with glass or a substitute.) This makes the red objects in the room look greyish and chicks cannot distinguish bloody or inflamed organs.

### B.W.D. in Chicks

Pullorum disease or so called white diarrhea is much less prevalent in chicks now than it was a few years ago before testing became a general practice. By careful blood testing of the breeding flock most of the trouble from white diarrhea has been eliminated. Since the Hatchery Industry has very largely eliminated the inherited B.W.D. it is up to the poultryman to keep the infection out by following a regular disease Prevention Program. Pullorum disease may break out in chicks from various sources and one should always be on the look out for it.

If there are indications of white diarrhea, segregate the chicks into as small groups as possible, thoroughly clean and disinfect the brooder house every morning, kill all the chicks that appear sick, give the balance a mild laxative treatment and follow with 8 PHEN-O-SAL tablets to each gallon of drinking water and also spray every three hours with the CAM-PHO-SAL to kill off the germs. Here again we must emphasize the need of early treatment in order to reduce the losses as much as possible.

### Unabsorbed Yolks

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 (Continued on page 7)



# Incubation Problems

*Notes from and Address Delivered by Prof. H. A. Bittenbender of Cleveland, Ohio, at Dr. Salsbury's Short Course on Poultry Diseases, Charles City, Iowa, August 31, 1933. An Insight Into the Hatcheryman's Problems.*

We used to say that there was luck in raising chickens and there still are some people who think successful poultry raising is a matter of luck. This is not so. There is a reason for every failure. I think the purpose of this school is to point out some of these reasons. It is my job to talk about one of the reasons for success or failure of poultry and that is the question of incubation.

We can do a good job of incubation or we can do a poor job. A few years ago we were interested in only one thing. "How many chicks can you get out of 100 eggs?" Today we cannot be satisfied with the answer to that question. We want to go further and ask how many chicks can our customer raise? It is not only a question of getting the chicks out of the shell but a question of livability thereafter and even this is not enough. The eggs produced by the pullet that lives must be of marketable size. The hatcheryman has a real problem not only in the handling of the eggs after they come into the hatchery but also of supervising the laying flock and the production of eggs before they come into the hatchery. The subject of this discussion is what to do with the egg after it gets into the hatcheryman's hands.

There are some very fundamental facts regarding the incubation of an egg. The first thing is egg size. The size of the chick is largely dependent upon the size of the egg and how it was handled during incubation. The minimum should be 24 ounces to the dozen. Good livability could not be expected from small eggs. After the eggs are in the incubator the question of temperature, moisture, ventilation and turning are not only important but absolutely necessary for proper hatching results. It is incorrect to say there is only one temperature at which you can run your incubator. The temperature will depend upon the equipment and the amount of moisture supplied as well as ventilation. Temperature, moisture and ventilation are all interwoven. If you change one and don't change the other you will not get satisfactory results. The balance between ventilation and moisture is often included in the word "humidity." The balance between these three factors is extremely important. This balance plus sanitation are the most important factors in livability. A well balanced moisture and humidity will not produce healthy chicks if sanitation is neglected.

## Two Stages of Incubation

We find in our research work there are two very distinct stages of incubation. The first stage includes the first 18 days, the second stage includes the 19th, 20th and 21st days. These two distinct periods must be treated differently. When eggs are first put in the incubator supplying heat is the first essential. The germ will grow at any temperature over 68° Fahrenheit. It grows normally only when the temperature is around 99 to 101°. For 12 to 14 days heat must be supplied to make the embryo grow. After 14 days the chick inside of the egg produces so much heat that it is a question of getting rid of some of it. By the 18th day he can go under his own steam and have some to spare. That is when ventilation becomes important. To take away some of the heat so that the chick can grow normally.

To maintain the proper humidity a wet and dry bulb thermometer is used. We find that the dry bulb thermometer should read from 99½ to 99¾° Fahrenheit and that the wet bulb thermometer should read from 86 to 87° and this gives the best condition for the first 18 days of incubation. The dry bulb temperature can now be lowered to 96¼ to 97° and the wet bulb increased to a temperature of 88 to 90°. This helps to take the excessive heat from the chick in the egg and enables the chick to utilize more of the food material that has been left there by the hen. The yolk is taken into the body better and the egg albumen around the chick is disposed of. Lowering the temperature keeps the chicks from puffing and showing signs of over-heating. This should by all means be avoided. Increasing the wet bulb readings helps to maintain the proper relation between temperature and humidity. The temperature must not be dropped in this fashion before the 18th day and if eggs of various ages are in the same machine this method can not be used. The temperature is dropped only for the last stages of incubation.

In hatchery sanitation the down or fluff must be controlled because disease germs may be spread in this way. In Washington at the Bureau of Animal Industry they carried on a series of experiments. They set a hen in one corner of the building with eggs that were known to come from reactor hens. In another part of the building they set a hen on eggs that came from a pullorum disease-free

(Continued on page 7)

## New Low Prices

on

## AVI-TONE

In order to give more poultry raisers an opportunity to cash in on the vitality building and growth promoting virtues of AVI-TONE the price has been materially reduced for the 1934 season.

**This brings AVI-TONE  
within the reach of all**

AVI-TONE, of the same high quality that has met with such high acclaim among poultry raisers for its worm-preventing properties, its tonic effects and palatability for old and young fowls is now so low in price that no one can afford to be without it.

It paid big to use AVI-TONE at the old price. It will pay many-fold to use it now—with poultry prices on the upgrade.

Only large volume and nationwide distribution makes this low price possible on this 100% drug preparation.

**REMEMBER AVI-TONE contains no fillers.**

It is composed entirely of tonic and worm-removing drugs blended in proper scientific proportion.

### USE IT—

1. For baby chicks in a prevention program.
2. For growing stock to induce highest vitality.
3. For layers and breeders to promote high production and good fertility.

You can now buy AVI-TONE in a small 2-lb. package which sells at only 75c. Here are the

### NEW LOW PRICES

2-lb. package .....	\$ .75
5-lb. package .....	1.75
15-lb. drum .....	4.75
25-lb. drum .....	7.50
50-lb. drum .....	14.00
100-lb. drum .....	27.00

**SEE YOUR DEALER**



# Mr. Wiggers Wiggles Through

## The Morrisons tell the Vice President--HOW

(An Original Story)

By WILLIAM HERBERT RICE

**A**LTHOUGH Mr. Wiggers, dapper, fidgety and forty-four, had never written a play nor raised chickens, he felt sanguine that he could contribute something better than Abie's Irish Rose, and—if, as and when necessary—make a grand slam at poultry raising.

At forty-five, after working through the stools, cages and desks to a Vice Presidency of a Manhattan, placer-field bank, he had, due to Wall Street's stripping its gears, been permitted to "resign." With one year's harrowing experience behind him, as proprietor of an East Norris, Conn., hatchery, he found himself in Tuperton Corners confessing to Jeff and Janet Morrison, at their Dr. Salsbury Service Station, that he had not made a grand slam.

"As a hatcheryman," he confessed, "I guess I'm a better banker. When I bought that hatchery, I thought myself—smart. I wasn't! At any rate, it's for sale. I'm quitting."

"I wouldn't say that, Mr. Wiggers," counselled Jeff, "Tell me what happened; maybe I can help."

"Yes, do!" insisted Janet, sympathetically. "Jeff and I attended Dr. Salsbury's poultry 'Short Course,' this summer, at Charles City, Iowa, and Jeff knows lots about raising chicks. What went wrong, Mr. Wiggers?"

"Everything! Eggs, incubators, housing, sickly chickens, feeding—everything!"

"Well," encouraged Janet, "let's begin with the eggs. Which came first, Jeff, the eggs or the chicks? You ought to know."

"I don't," grinned Jeff, "but let's say—eggs. Did you buy your hatching eggs from tested flocks?"

"Well, no," admitted Mr. Wiggers. "I bought wherever I could—and cheap. After all an egg's an egg."

Jeff shook his head. "Cheap eggs hatch dear cheeps. A professor at the Short Course—what was his name, Janet—that good looker with a forehead extending back to his collar button?"

"Prof. Kleinschmidt?"

"That's the man. He said that good chicks came from eggs of properly fed hens, whose eggs are stored with the right vitamin content to develop and feed the chicks during hatching time. How did your chicks come through?"

"Terrible! Sleepy, shivery, wheezy, pasted up like envelopes. They died like flies—bowel trouble, you know."

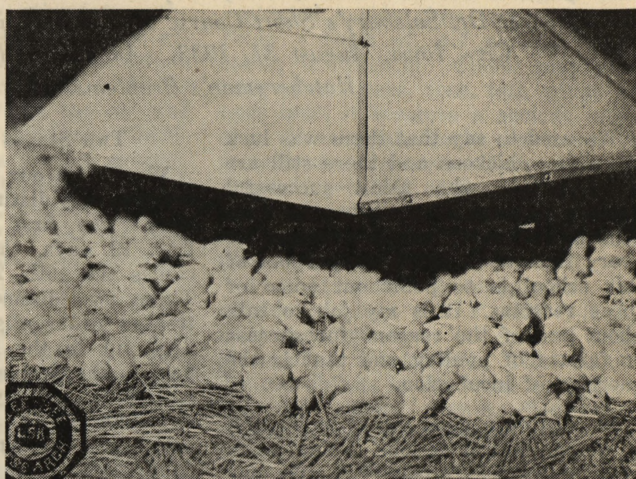
"Not necessarily. Dr. Salsbury's experts have discovered that pasting up generally indicates lung trouble. Sounds funny, perhaps, but they find that the bowel trouble is merely the result of lung trouble. CAM-PHO-SAL for the lungs, and PHEN-O-SAL for the intestines cures both complaints."

"Well, that's a new one! The Doctor and his brain-trust boys must be wizards. By the way, did any one at his poultryfest mention incubators?"

"Sure! A man named Bittenbender. He certainly knew his stuff. He's strong for separate hatchers—automatic, of course."

"Frills!" shrugged Mr. Wiggers. "Why separate—and why automatic?"

"Well," smiled Jeff, "besides being economical, easier to clean and safe to fumigate, their thermostats keep one



from running himself ragged, fussing about the temperature and moisture balance. That's the thing Bittenbender stressed—that the proven balance between temperature and humidity can only be maintained through automatic means. You see,—through automatic ventilation—they keep a uniform temperature in all the trays, and get rid of animal heat—the hatcheryman's big bugaboo, after the eighteenth day."

For a time Mr. Wiggers sat silent. "You think, then," he said, finally, "that with first class eggs and equipment, I might make a go of it?"

"Why not?" encouraged Jeff. "Of course," he added, "after the chicks move in, they must have proper housing, sanitation and ventilation (no crowding, chilling nor mixing with older chickens), a balanced ration, and—most important—a keep well, health program. You'll find that Dr. Salsbury's 'Prevention Program' for chicks, is as salubrious as his pellets and prescriptions for pippy poultry."

"It's a big order," sighed Mr. Wiggers, "but, but—I wonder if you'd come over and look over my outfit? I hate to quit!"

"You shan't!" gushed Janet. "Of course he'll come. He'll be there tomorrow—Wednesday; I'll see that he's there!"

Janet was waiting, when Jeff returned. "Is he going to stick?" she questioned.

"Like a leech! Somebody goldbricked him for fair, with that hatchery; but he has—guts, Wiggers has!"

"Good for him! How were things?"

Jeff shivered. "Awful! The main building's a draughty, made-over stable; his brooder houses, movable—with cracks big enough to throw a cat through; and the floors—Whew! It makes me weep to think of the chicks resting their poor little bell—abdomens, I mean—on those cold floors. No wonder they died."

"All?" asked Janet.

"No—but they should; they're not worth saving. And the incubators—Boy! Original Noah's Ark model."

"What's he going to do?"

"Do? He's already done it. He's no snail! Why, today, he ordered automatic incubators and separate hatchers (best on the market), building plans for brooder houses, water fountains, lumber for feeders, brooder stoves with built-in humidifiers, and A-No. one eggs—and all by telegraph."

"What a man!" breathed Janet. "Say, did you mention feed? Remember what Professor Kruech said—minerals for bone, proteins for muscle, carbohydrates for energy?"

"Sure! That's ordered, too; the ready-mixed kind, nothing to add."

"Nothing, Jeff? Not even AVI-TONE?"



"Oh, of course—that! That's to keep worms away and give disease resistance. I lectured," continued Jeff, "on danger signals, taught him the Salsbury Prevention Program, from A to Izzard, and stocked him with AVI-TONE, PHEN-O-SAL, CAM-PHO-SAL and POULTRY HOUSE DISINFECTANT. I certainly toiled!"

"You would!" smiled Janet, proudly. "I suppose, though, he'll be keeping the 'phone busy."

"Betcha a big kiss—he won't!"

"Catch me!" giggled Janet, running for the store.

Weeks later, summoned by 'phone, the Morrisons motored to East Norris. Mr. Wiggers, khaki-clad and joyous, met them. "Come and see!" he bubbled. Here's rubbers."

"Rubbers?" grinned Jeff,—"Frills!"

Laughingly, they trooped into the new, last-word brooder house. What a sight! Cheerfully-comfortable—and capering, fluffy, bright-eyed chicks feeding happily around the hover. "Splendid!" enthused Jeff. "Evidently everything jelled—"

"Perfectly!" exulted Mr. Wiggers. "Everything did, thanks to you! The incubator units were marvelous—didn't lose a chick! They're cam-pho-salubrious, phen-o-salient and avitoned up to high C! Tomorrow (their second week) they're going on grit; been on that new mash, you suggested, since forty-eight hours."

For an hour they jubilated in poultrymen's parle-vous. "I wonder, Mrs. Morrison," smiled Mr. Wiggers as they parted, "if Dr. Salsbury has any more at home like Jeff? Jeff's a brick!"

"Brick-top—you mean?"

Mr. Wiggers chuckled. "I wasn't thinking of his hair; it was what's under it. He has revamped my spunk, taught me the whys and wherefores, and proven that I can raise chicks. When they get a bit older," he confided, "I'm going to—write a play."

## Minerals for Chickens

(From the University of Illinois Circular No. 411.)

Chickens should be provided with common salt at all times. From ½ to 1 per cent of common salt should be added to the ration of both chicks and hens.

When rations for growing chicks or laying hens contain as much as 10 per cent of meat scrap, tankage, or fish meal, it is not necessary to include any additional calcium or phosphorus. Milk products are less efficient in this respect; about 25 per cent of them (on the dry basis) would be required in a ration in order to supply as much calcium as 10 per cent of tankage supplies. When meat

scrap, tankage, or fish meal is replaced in whole or in part by vegetable protein concentrates, the mineral deficiency incurred may be supplied by adding 1 pound of steamed bone meal (or a mixture of steamed bone meal and limestone) for each 5 pounds of supplement replaced. Laying hens also have a high calcium requirement for eggshell formation and should be given free access to oyster shell or other satisfactory form of calcium carbonate at all times.

Excessive feeding of minerals may have an unfavorable effect on growth and bone formation and should therefore be avoided.

## INCUBATION PROBLEMS

(Continued from page 5)

flock. They also set two classes of incubator eggs and they found that somehow the infected down or fluff from the reactor eggs would get into the air and infect the chicks that came from the healthy stock. By running the wet bulb thermometer around 88 to 90 very little of the down circulated in the air. A high wet bulb temperature and the use of solid pieces underneath each hatching tray has stopped the movement of the infection.

It is absolutely necessary to clean the machine, clean the trays and use a good disinfectant. Use a product that will kill and clean.

In conclusion let me remind you that we must pay special attention to the relationship between the dry bulb temperature and the wet bulb temperature, that we must clean our machines, scrub them and use a good disinfectant. On top of all this go back to the flock owner and see that he does a good job of producing eggs. Just as much needs to be done prior to the time the eggs go into the machine as afterwards. The closely supervised flocks produce the kind of chicks that bring the most money and the best results.

## HOW TO KEEP BABY CHICKS HEALTHY

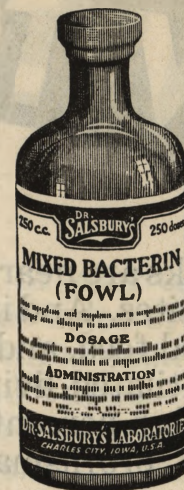
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enough to cook the yolk it will actually kill the chick. Some years ago feeding too soon was thought to stop the absorption of yolks but now this has been proven a fallacy.

For 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.

Plan now to vaccinate your chickens when they are still in the growing stage. The next Poultry Health Messenger will tell you how and when to vaccinate.

## COLDS, ROUP—



and various bronchial troubles are common in the winter. Over 80% of them are due to disease germs. Immunize against the germs with—

## DR. SALSBUARY'S MIXED BACTERIN

The extreme popularity of this bacterin is due to the excellent results obtained.

Remember that you get one full c.c for each dose.

Prices: 60 c.c., \$1.50  
120 c.c., \$2.40  
250 c.c., \$5.00

## Mid-Winter Losses

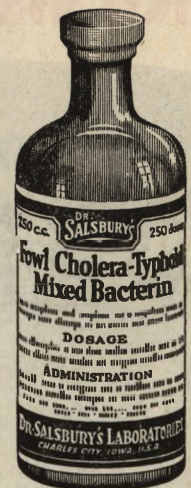
Are Generally Due to

## Cholera and Typhoid

Whenever chickens die suddenly, get either dark or pale around the head, are dead on the nests or under the roosts and have green or yellowish droppings, vaccinate with

## DR. SALSBUARY'S Cholera-Typhoid Bacterin

SAFE—It Cannot Produce Disease CERTAIN—it contains the maximum immunizing properties. INEXPENSIVE—you get 1 full c.c. in every dose and one treatment is practically always sufficient.



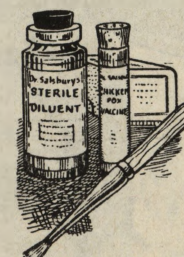
PRICES

60 c.c.—\$1.50 120 c.c.—\$2.40  
250 c.c.—\$5.00

## FOWL POX

and

## CANKERS



will cause heavy losses if the birds are not immunized. If birds are in production, vaccinate with Dr. Salsbury's Pigeon Strain Vaccine. Highly potent, double tested and a safe vaccine to use.

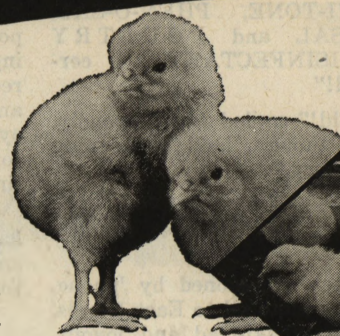
Packages of with brush and 100 doses, \$1.00

100 and 500 doses instructions for use. 500 doses, \$4.00

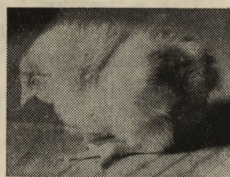
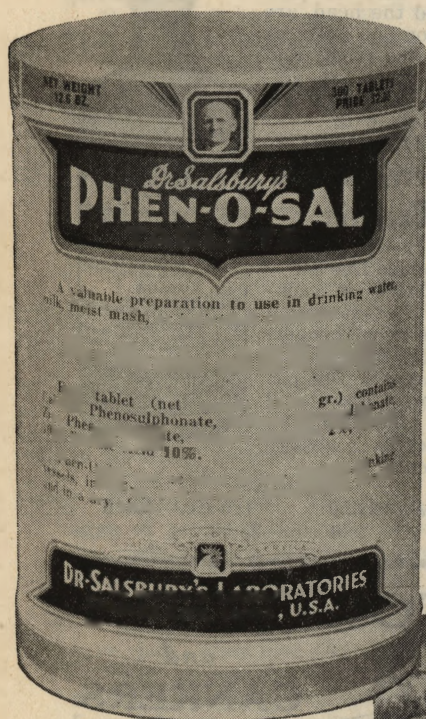


# HOW TO RAISE STRO

● Baby chicks are nearly always free of disease and parasites. And if you keep them healthy, give them good feed, and provide clean, comfortable, well-ventilated living quarters, you should raise a very high percentage of them. They will then be good profit-makers for you, as early broilers or heavy layers.

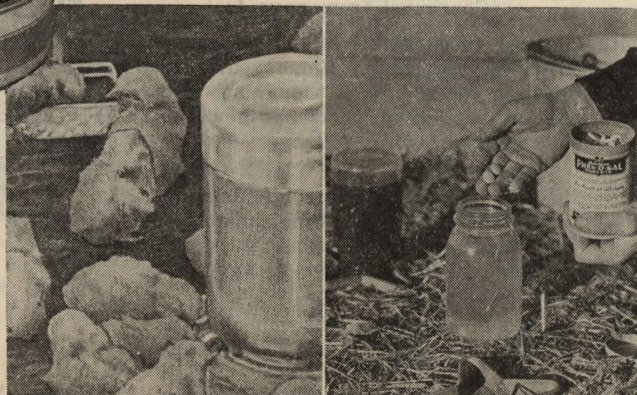


## Put PHEN-O-SAL IN THE DRINKING WATER *Every DAY*



It may not be possible for you to raise your chicks under ideal conditions, but even if it is, sickness and disease can get a start in so many different ways that it is absolutely necessary to follow a definite prevention program to keep your flock healthy.

A prevention — or health-preserving — program has two sides—keeping the bowels in good order, and guarding against respiratory diseases. To keep the bowels in good order use PHEN-O-SAL in the drinking water every day right from the start. After the first ten days, use PHEN-O-SAL in the drinking water, two days a week until the birds are three to five months old. The tablets quickly dissolve in the water and form a medicinal fluid that the chicks take into their systems all day long to check and correct bowel disorders such as constipation, diarrhea, inflammation, etc., in the first stages of development. At the same time, PHEN-O-SAL furnishes many blood building elements and aids digestion.



**Dr. Salsb**

**Get Your FREE Co**

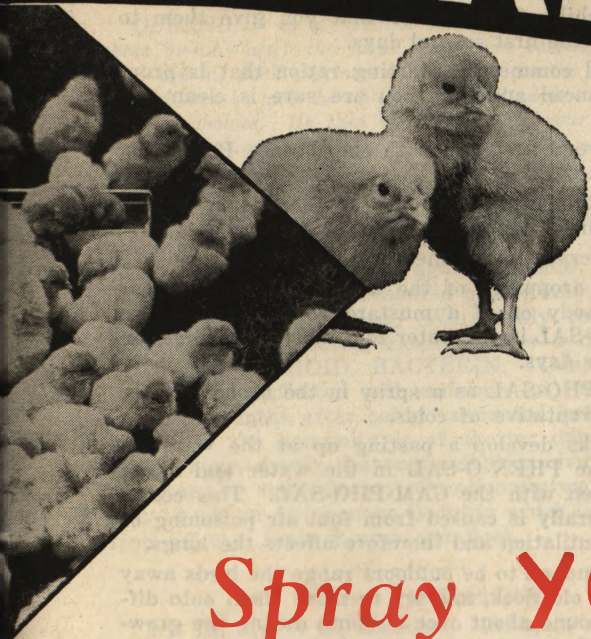
No trouble to use PHEN-O-SAL. You just drop the tablets in the drinking water or milk. Box of 125 tablets, \$1.00; 300 for \$2.00.

**Ask him fo**

**FOR COMPLETE DIRECTIONS IN TREATING BOWEL AND LUNG TROUBLES**



# NG HEALTHY CHICKS



But to raise most of your chicks, you must observe these three rules of keeping chicks healthy: (1) Brood them in small lots to prevent spread of disease should it appear, (2) Keep quarters scrupulously clean through frequent change of litter and disinfection, (3) Observe regularity in temperature, ventilation and feeding.

## Spray YOUR CHICKS Every Night With CAM-PHO-SAL

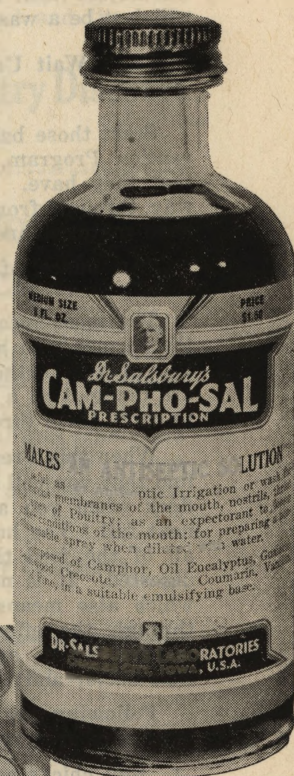
### HOW TO GUARD AGAINST RESPIRATORY DISEASES

—Much of the common respiratory diseases can be prevented by spraying your chicks every evening, after they have settled for the night, with a solution of CAM-PHO-SAL. It contains antiseptics that kill the germs before they have a chance to cause colds, pneumonia or bronchitis; and its soothing oils heal the sore, inflamed air passages and lungs, and keep them free of congestion.

### TREAT BOWEL AND RESPIRATORY TROUBLES AT THE SAME TIME—

Since disease germs may locate in either the lungs or bowels of your chicks, and be carried from one set of organs to the other, it is necessary to treat with PHEN-O-SAL and CAM-PHO-SAL at the same time. If you don't, trouble in the lungs will set up a bowel disorder, or the other way around, and you will lose chicks from one cause, while you are treating for the other.

**WATCH FOR THESE DANGER SIGNS**—When there is something wrong with your chicks—in the lungs or bowels, or both—you will notice these definite signs: Yellow or other off-color droppings, pasting up behind, drooping wings, chicks seeking heat, huddling and acting sleepy, no appetite, sneezing, watering at the eyes, and gasping for breath. Any one or more of these symptoms is a signal for you to start treating immediately with PHEN-O-SAL and CAM-PHO-SAL, in order to check the outbreak and save your chicks.

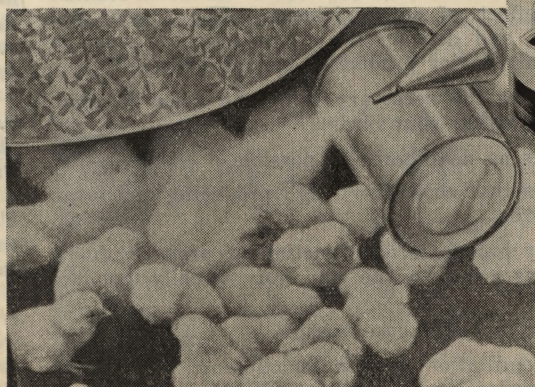


### Dr. Salsbury's "FIRST AID to BABY CHICKS"

Ask for a copy of this valuable circular at your local Dr. Salsbury's Poultry Health Service Station. Tells you how to keep your chicks healthy and gives you detailed information on what to do for the common ailments of baby chicks.

See Your Local Dr. Salsbury Dealer  
WHOSE NAME APPEARS ON THE BACK PAGE

PHEN-O-SAL and CAM-PHO-SAL by name



CAM-PHO-SAL mixes readily with water and can be sprayed with an ordinary fly spray. 250 chick size bottle, \$1.00; 500 chick size bottle for \$1.50.

WITH DR. SALSBUURY'S PHEN-O-SAL AND CAM-PHO-SAL SEE ARTICLE ON PAGE 15



# Success vs. Failure

**A**NOTHER baby chick season is about to be ushered in and it will pay us well to face the facts on poultry diseases, and call A SPADE A SPADE.

We know that there are diseases which take the lives of many chicks each season, regardless of how careful we are. We know that the birds in the air are carriers of many of these diseases. We know that the ground is literally covered and filled with disease germs. We also know that just sanitation alone is not complete in its eradication of disease and disease germs.

Many of you folks will recall your experiences with the dreaded coccidiosis attack that hits your flock almost annually. Many of you realize now, more than ever, the damage done by an infestation of worms, and the discouraging hours that you spent trying to get your flock out of an abnormal moult and back into production, due to the presence of worms. Then again there are the folks that have had the misfortune of losing a large percentage of their flocks as a result of an outbreak of cholera or typhoid.

Still another group of people will realize the hazards connected with respiratory outbreaks, such as brooder pneumonia, influenza, bronchitis, roup, etc.

There will be another large group of poultry people who will encounter poultry troubles and diseases this year for the first time, and they will wonder what to do. They will not report their troubles to their Dr. Salsbury dealer when they first notice trouble, because they figure that the ailment is just some little temporary condition that will adjust itself in a day or two, and that a trip to town will just be a waste of time.

## Don't Wait Until Trouble Creeps Into Your Flock. Prevent It.—How?

Start those baby chicks off on the Dr. Salsbury's Prevention Program, in the FIRST feed and FIRST drink that they have. Follow the Prevention Program all the way through from the time they are hatched until they have matured and are placed into the laying house.

"An ounce of PREVENTION is worth a pound of cure."

The most successful and largest poultrymen, down to the farmer who has only 100 birds, are using this tested and proven method of keeping their flocks healthy, and are doing it at a profit. The cost per bird is very small to carry them through to the laying house, in good health.

When this Prevention Program has been used, you will find that you will have very few pullets to cull out of your flock when you are putting them into the laying house next fall. You have kept them in good condition, so that all of the feed they have eaten can be assimilated and digested. It is not wasted. You have kept disease out, which also means that the birds have not been stunted through the effect of some sickness. They grow and mature better, and develop the reproductive organs, so that better and heavier production can be expected.

Following are the necessary things to keep in mind, when you are raising your birds:

1. Buy chicks as near home as possible.
2. Buy chicks that come from high producing and large sized birds.
3. Have your brooder stove functioning properly for a few days prior to the day you actually get the chicks.
4. Have your brooder house warm.
5. Have a ventilation system functioning properly in your brooder house, because FRESH air is just as important as the feed.

6. Take the chill off the water that you give them to drink for the first several days.
7. Use a good commercial starting ration that is properly balanced and that you are sure is clean and fresh.
8. Start the very first day with the disease Prevention Program.
9. Keep the temperature of the brooder house at the recommended degree, and keep it even.
10. Practice every sanitary method that you can.
11. Watch the droppings of the chicks. If they appear to be bloody or of a mustard color, increase the PHEN-O-SAL in the water to 8 tablets to the gallon for a few days.
12. Use CAM-PHO-SAL as a spray in the brooder house as a preventative of colds.
13. If the chicks develop a pasting up at the vent, increase the PHEN-O-SAL in the water and spray more often with the CAM-PHO-SAL. This condition generally is caused from foul air poisoning or faulty ventilation and therefore affects the lungs.
14. When old enough to be outdoors range the birds away from the old flock, and try to move them onto different ground about once a month during the growing period.
15. Furnish roosts in the brooder or range houses as soon as the birds want to roost. This will help to eliminate crowding.
16. Furnish artificial shade for the birds. Having the feeders and waterers under the shade. (Sewing together of several sacks makes a very good shade. Nail these or fasten them to some posts or steel stakes that can be moved with the birds.)
17. Divide the pullets from the cockerels as soon as sex can be determined.
18. Continue with the Prevention Program each month.

## GOAT FEVER AND ABORTION IN CATTLE

An article on Abortion in Cattle in our July-August Poultry Health Messenger so interested Mr. Aygoppardi of Sliema, Malta, that he was kind enough to give the following history and observation on the organism of malta fever in goats and that of abortion in cattle. Mr. Aygoppardi is Director of the Government Experimental Farm on the Island of Malta.

"In 1887 Dr. Bruce (then Capt. Bruce, medical officer in the army) in a post mortem examination, on a soldier at the military hospital in Malta, isolated the *Brucella melitensis* from the spleen. In 1896, Bang and Stribolt discovered the *Bacillus abortus*, which, although similar in many respects to the *Brucella melitensis*, is quite different.

"Although goats and sheep are most susceptible to harbour the *Brucella* still, it has been found here in Malta, that cows became infected too, and there have been instances in which humans have contracted infection by drinking cow's milk.

"Recently very interesting experiments have been carried on the *Brucella*, which by its similarity to the *Bacillus abortus* may throw some light also on this latter disease. Prof. Zammit, in 1931 immunized the goat by inoculating a strain of the *B. Abortus*. It has been found also the kids born of infected goats had a natural immunity. All these facts may interest scientists who are trying to eradicate both diseases.

"Many thanks for your bimonthly review, which I am receiving regularly. Now that poultry rearing is assuming world wide importance, such a publication became absolutely necessary. I congratulate you for issuing this review, which I am sure will be regarded as a blessing by all poultry farmers."



# Our Daily Mail

## Vaccinating Against Fowl Cholera

**QUESTION:** Is it possible for cholera to show up within three months after the birds have been vaccinated? A party here had his flock vaccinated about five months ago for cholera. Several months later he noticed the birds dying with the indications of cholera. He then vaccinated with your bacterin. This was about three months ago, but he is finding a few birds now and then dead on the nest. If the vaccinating is done properly, how long will they be immune? Would you recommend that he vaccinate again the birds which were vaccinated three months ago?

**Answer:** In vaccinating against cholera, the amount of immunity produced is measured by the amount of bacterin administered to the bird. We usually recommend that flocks already infected should receive a double dose of CHOLERA-TYPHOID BACTERIN. Usually the birds that are not affected will maintain an immunity for at least six months after being vaccinated but under certain conditions the immunity is of shorter duration. Experiments have shown that revaccination every 90 days is necessary in some flocks. Occasionally we find it necessary to use an Autogenous Bacterin which is made directly from affected birds in your own flock.

## Worms and Production

Mr. Ed Mayer of Standish, Michigan, reports as follows: Three of his flock owners gave our KAMALANICOTINE WORM CAPS to their pullets after being in production for several weeks. The production of each flock was watched and it was found that they increased in production right from the time they were given the Worm Caps. He never saw this before and at the same time observed that many worms passed.

## Garget Stopped 100 Per Cent

For years one of my customers has been having a lot of garget in his herd and it had just about put him out of business. He had gone to a number of ——— and they had never been able to help him any. He had asked them if there was not some sort of vaccination he could use to overcome the trouble and they had told him no. Finally he saw Dr. Salsbury's ad in one of the dairy papers and grasped at it as a last resort. He says that on every cow he has had 100 per cent results. He is also pleased with the results he is getting from using the abortion test.—J. W. H., Wooster, Ohio.

## Treatment for Abortion

**QUESTION:** I would like to know if your treatment for a case of contagious abortion will affect a cure? I have eight cows and heifers and a neighbor has three that have lost their calves. I am anxious to keep three heifers in the bunch if I can cure them.—F. S., Bluffton, Indiana.

**Answer:** While the vaccine for abortion in cattle is primarily recommended as a prevention we know of many people who have used it as a curative with good results. The experiments at Washington indicate that the preventive features are much more outstanding than the treatment.

We would not hesitate to vaccinate the affected animals with the ABORTION VACCINE just the same as you do the young heifers. We have seen many cases where the extra stimulation of immunity obtained by inoculation of the vaccine helped greatly to overcome infection that might be located elsewhere in the system. Inasmuch as there is no better treatment available we feel that a person is entirely justified in trying out the vaccine.

I suppose that you are familiar with the fact that our Vaccine is made from the cultures furnished by the laboratory at Washington where the experimental work on abortion has been done. It is also made by the methods

# Dr. Salsbury's School of Poultry Diseases

## Nearly 100% of the Failures in the Poultry Business Are the Direct Result of Disease.

If all poultry raisers knew how to control poultry diseases in their flocks there would be practically no failures and very few losses in the poultry business.

Dr. Salsbury's School of Poultry Diseases has been established for the sole purpose of providing the information on disease control which is needed for the successful operation of any branch of the poultry business.

This school offers an intensified four-week course of instruction in the form of class room lectures and laboratory practice. It covers such subjects as the following:

Anatomy, physiology, biology, embryology, immunology, hatchery sanitation, general sanitation, infectious diseases, non-contagious diseases, diseases of the skin, deficiency diseases, external parasites, internal parasites, tumors, surgery, testing, poultry meat inspection, laboratory diagnosis, microscope practice, field diagnosis, feeds and feeding, injurious feeds, housing, breeding, production, marketing, rearing, etc.

The school is now in operation and offers unusual opportunities to hatcherymen and their service men, feed dealers and their service men, large poultry raisers, salesmen for feed dealers and manufacturers and all those who now hold or wish to secure salaried positions with poultry farm owners, hatcheries, feed dealers, etc.

## Graduates Will Receive a Certificate.

For detailed information about the school and the next opening dates, write—

## Dr. Salsbury's School of Poultry Diseases

Charles City, Iowa

## Do You Need a Poultry Disease Technician?

If you need additional help or more competent help in connection with your poultry enterprise, you might just as well get the benefit of trained poultry disease technicians, such as are being developed by Dr. Salsbury's School of Poultry Diseases. Graduates of this school are well qualified for such positions. When in need of men with special training along the lines of poultry diseases,

—write—

## Dr. Salsbury's School of Poultry Diseases

Charles City, Iowa

## For Individual Treatment Against Lice

Use

Dr. Salsbury's

## LOUSE POWDER

A powerful but harmless powder. Destroys lice on chickens and turkeys. Sprinkle it in the nests and dust into the feathers. Comes in convenient one-pound duster top cans, at 40c each.





prescribed by them which in their experience have given the best results. Only during the past year has the field been cleared of the many individual brands of vaccine, and with the stabilization of cultures and methods the confidence in the vaccine treatment has become much better established.

#### Loss of Calves

**QUESTION:** *Having had some trouble with my young heifers losing their calves shall be glad to know what to do. I sold one nice heifer last spring that would not carry a calf longer than 3 or 4 months and abort. Am having the same trouble again. One was bred last spring and in three months she lost it. Is it wise to let her stay in the herd? Is there anything that can be done to make her carry a calf to maturity, and if so, how expensive? I have 4 grown cows and 7 heifers, 4 bred last spring and 3 are last spring calves. The mother of the heifers that I am having trouble with lost her calf about 1 year ago but that is the only time she has lost one and is fresh now. She had been bred about 3 months when the abortion took place. This cow is seven or eight years old and her calves are the only ones I have had any trouble with so far.—L. C., Troy, S. Car.*

**Answer:** The condition you describe is quite suggestive of the infectious type of abortion. The only way to stop this condition is to vaccinate the young stock and the non-pregnant ones with the BOVINE ABORTION VACCINE. This vaccine is made from tested cultures obtained after practically a lifetime of investigational work on abortion disease. The results obtained by these men have been very encouraging and until something better and more specific is found, we do not hesitate to recommend the Abortion Vaccine for building up an immunity in a herd.

The Abortion Vaccine comes in the following size packages and prices:

10 c.c.— 1 dose.....	\$ .50
60 c.c.— 6 doses.....	2.00
240 c.c.—24 doses.....	6.00

Cattle may also be tested for the presence of the disease using the agglutination test. This merely tells whether or not they have the disease and is of no benefit as far as treatment is concerned. Vaccination with the Abortion Vaccine is the most practical and the least expensive procedure to follow.

#### Using Two Bacterins at the Same Time

**QUESTION:** *Will it be all right to use both the MIXED BACTERIN and the CHOLERA-TYPHOID BACTERIN at the same time?*

**Answer:** It is very common practice to use both bacterins at the same time. There are two ways in which this may be done. One is to have two syringes giving the MIXED BACTERIN on one side of the bird

and the CHOLERA-TYPHOID BACTERIN on the other. Another method is to draw the syringe half full of MIXED BACTERIN and then complete the filling with CHOLERA-TYPHOID BACTERIN. Shake the syringe to mix each time before vaccinating.

In smaller flocks where it is not a hard job to handle the birds we prefer to handle the birds twice because there appears to be a better immunity of slightly longer duration by vaccinating at two different times. In larger flocks the owner seldom wants to handle the birds twice and therefore we recommend that both bacterins be given at once.

Convenience makes up for the slight difference in immunity.



Biddy Bly: "Heard about the commotion and goin' ons at the Smith Farm. They're a layin' the poor fowls in rows on a table and sticking a needle in their veins?"

Henry Hy: "Yes indeed. They call it 'Blood-tesin'." The Hitop Hatchery man came out and did it to us last year. Took out about 20 per cent they called 'Reactors.' They were mostly good for nothing loafers and weren't my friends nohow. Sho helps our layin' and hatchin' record."

#### A DISINFECTANT MANY TIMES STRONGER THAN CARBOLIC ACID

The brooder house needs a thorough going over before you put in the new chicks. Coccidia, worm eggs and germs from last year must be killed. There is nothing that will do this job more satisfactorily than Dr. Salsbury's MITE DEATH DISINFECTANT. Use it freely in getting the brooder house ready. It is several times stronger than carbolic acid and full directions for use come with each package.

#### A SAFE DISINFECTANT FOR THE BROODER HOUSE

For safe and efficient disinfection of the brooder house, after the chicks

have been put in, for the weekly clean up begin using a refined disinfectant, one that is free from objectionable odors and one that cannot harm the young chicks. Dr. Salsbury's HATCHERY SPRAY meets all these requirements. It is a pleasant smelling, highly efficient antiseptic, particularly valuable in the springtime and wherever the ill smelling, old time disinfectants are objectionable.

#### CORRECT DIAGNOSIS MEANS SUCCESSFUL TREATMENT

Harry Britain of Republic, Mo., who is known locally as "Doctor Mixed Bacter," because he probably uses more Avian Mixed Bacterin Salsbury than any other Missouri serviceman, claims the best feature of the Dr. Salsbury's Laboratories for him is the free consultation and diagnosis service of the organization. "It is only on a correct diagnosis that successful treatment can be given," was never truer than when applied to poultry troubles. Whenever Harry is unable to give a correct field diagnosis he sends one or preferably two specimens out of the flock direct to the Laboratories at Charles City, Iowa. A real sick bird and one average one is best so one can be checked against the other to get a typical report for the flock as a whole.

Within a week or ten days a report comes back from the diagnosis department at Charles City giving a triple report of the post-mortem examination, which is visual, microscopical and bacteriological in scope. Not only is a true and scientific diagnosis made free of charge, but, better still, advice is given in the report as to what can be done using things science has recognized for that kind of trouble.

When birds are sent to the laboratories for a free diagnosis it is best to send live specimens. Parcel post or express can be used. At the same time a letter should be written addressed to the diagnosis department telling the history of the trouble and details about the flock.

#### Worked Like a Charm

St. James, Minn., Dec. 4, 1933.—I had roup in my flock of turkeys last year but I vaccinated with your MIXED BACTERIN and it worked like a charm.—Olstad Farms, Theo. Olstad.

#### Enjoyed Every Word

I have read the little Poultry Health Messenger from cover to cover and have enjoyed every word. I enclose \$1.00 for a three year subscription for the Poultry Health Messenger.—Mrs. Rose B. Freece, Salina, Utah.



## FALSE ECONOMIES IN RAISING CHICKS

By D. C. KENNARD

In March-April Ohio Bi-Monthly Bulletin

False economies, as well as needless expense, must be carefully avoided. Generally, the first temptation will be to purchase chicks on the basis of price rather than quality. This may often mean deliberately choosing between success or failure. It has been well said that "A good chick is half raised." Certainly, it often proves impossible to raise inferior chicks; whereas high-quality chicks often come through without any particular difficulties. Although the price of chicks may not always be an index to quality, the purchaser of chicks must in one way or another make sure of securing quality chicks regardless of their price. If one can satisfy himself that he is getting a better grade of chicks by paying more, there should be no hesitation in paying two or three times as much for them, even if it means getting only one-half or one-third as many chicks. It will be much more profitable in the end to succeed with 100 quality chicks than to fail with 300 or more inferior chicks.

A frequent temptation, not only for beginners but old timers, is to attempt to get along with inadequate equipment. That is why too many exceed the proper capacity of the brooder house and fail to provide suitable and adequate feeding and drinking equipment. This is another false economy which never pays. Another frequent form of false economy is the neglect of the pullets during the growing period. Frequently, great effort and care taken to bring the chicks through the brooding period in fine condition; then, when the pullets go out on range they are often required to shift for themselves and the caretaker even neglects to feed them properly. For instance, it is an all too frequent occurrence for pullets on range to receive little else than whole grain, aside from what the range provides. This is a grave mistake; a well-balanced mash should always be kept available for the pullets.

Obviously, success or failure with raising chickens is determined by many essential and contributing factors. Only a few of these factors which appear to be the more common causes of success or failure have been dealt with in this paper. Success is the result of all the many factors functioning normally and effectively.

### WATCH OUT FOR LICE

When chicks are brooded with hens, watch out for lice.

Dr. Salsbury's LOUSE POWDER is safe for both the chick and the hen and very effective against the lice.

## PULLORUM DISEASE IN PHEASANTS

The Pheasant appears to be as susceptible to the Pullorum disease as the guinea fowl. While some pheasants showed a marked decrease in their agglutination reaction, others possessed strong reactions that showed very little fluctuation. Among the latter group, *S. pullorum* was recovered from three of the birds at necropsy. One laid one infective egg. Hence it appears that pullorum disease manifests itself in adult guinea fowl, pheasants, and chickens quite similarly.

While the complete circle of infection has not been demonstrated in these birds, it does not seem improbable that the disease may gain a stronghold in guinea fowl and pheasant raising establishments, especially under suitable environment, and cause serious losses. Persons engaged in the raising of such fowl should respect this disease as a possible hazard to their success in the rearing of chicks from these species.—Modern Game and Hunting Club News.

### SALT FOR BABY CHICKS

The Maryland Experiment Station records that chicks can stand a large amount of table salt when mixed with the mash. Chicks varied considerably in their natural tolerance to salt.

"The typical appearance at autopsy of chicks dying from salt poisoning was a large hemorrhage at the base of the heart, severe bloody congestion in the kidneys, a white slimy lining in the proventriculus, an easily detached gizzard lining, and a more or less slimy appearance of the mucosa of the intestine, with occasional bloody congestion showing in the duodenum. In chronic cases a straw colored, gelatinous exudate is found beneath the skin in the region of the crop, and frequently in other portions of the body.

"This experiment indicates no reason for changing present (one-half per cent salt) practices with respect to amount of salt in baby chick feeds." —Taken from Maryland Agricultural Experiment Station Bulletin No. 340, Pages 366 and 367.



FOR THE WINTER SEASON don't neglect giving Cod Liver Oil to your poultry. It builds resistance against roup and it increases the hatchability of the eggs, vigor of the chicks and improves the texture of the shell.



Whenever baby chicks or grown birds develop cannibalism, pick each other until blood appears

### USE DR. SALSBUARY'S STOP PICK

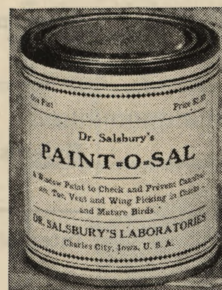
It breaks the habit. STOP PICK is a blood-like preparation. Pickers think it is blood, get a taste of it but never again. A taste or two is enough and they are cured of picking anything that looks like blood. Works equally well on baby chicks and laying hens as well as other farmyard fowls.

Small Can.....\$ .50 Large Can.....\$1.00

Another reliable method for checking cannibalism is to paint the windows with

Dr. Salsbury's

## PAINT-O-SAL



It colors the light so that the chicken will not recognize fleshy and bloody objects. Paint the glass or glass substitutes of all the openings. One coat of Paint-O-Sal will do the job — the easiest and

cheapest assurance against cannibalism.

Paint-O-Sal comes in one-half pint, pint and quart cans at popular prices.

½ pt.....\$ .90 1 pt.....\$1.50 1 qt.....\$2.50

For disinfecting incubators, large and small, there is nothing superior to

### Dr. Salsbury's HATCHERY SPRAY

An active germ killer and deodorant. Safe to use right on the baby chicks. You can feel safe if your chicks come from an incubator that has been disinfected with HATCHERY SPRAY.

It is harmless and non-irritating. An ideal disinfectant for the brooder house.

1 qt.....\$2.75 ½ gal.....\$4.50 1 gal.....\$8.60



# CLASSIFICATION OF CHICK DISEASES

## *And What to Use for Treating Them*

Parts Affected	How They Act	Disease	What to Use
<b>RESPIRATORY TRACT</b> (Nose, Larynx, Trachea, Bronchi, Lungs.)	Gasping with bloody phlegm	Bronchitis	Run room temperature high. Spray with CAM-PHO-SAL.
	Gasping—no blood	Gapeworms	Mechanical removal.
	Labored breathing	Pneumonia Nodules on lungs	CAM-PHO-SAL spray. PHEN-O-SAL in drinking water. Laxative.
	Sore eyes Face swollen Running nose	Colds and Roup	MIXED BACTERIN (Fowl). CAM-PHO-SAL Spray. Nasal Syringe.
<b>DIGESTIVE ORGANS</b> (Crop, Stomach, Large and Small Intestines and Ceca.)	Pasted up	Bowel and Lung Trouble	CAM-PHO-SAL spray. PHEN-O-SAL in drinking water. Laxative.
	Droppings watery	Diarrhea	Laxative. PHEN-O-SAL, 8 tablets to each gallon of water or milk.
	Die rapidly	B.W.D.	Quick action on disinfection and treatment with CAM-PHO-SAL spray and PHEN-O-SAL in water or milk.
	Droppings bloody or watery	Coccidiosis	RAKOS in feed. Treat litter with Mite Death Disinfectant.
<b>PARASITES</b>	External	Lice	Louse Powder.
		Mites	Mite Death Disinfectant.
	Internal	Worms	Start out with AVI-TONE in mash. Follow with AVI-TABS. For older chicks use small size Worm Caps.
<b>HABITS</b>	Toe Picking	Cannibalism	Stop Pick.
	Vent Picking		PAINT-O-SAL for windows.
<b>VARIOUS ORGANS</b>	Tumbling and rolling over	Nerve disorder	Check feeding conditions. Laxative, follow with PHEN-O-SAL.
	Unthrifty	Unabsorbed yolks	Look for cause.
	Mushy Chicks	Inflamed navel	Disinfection at hatching time.
	Leg Weakness	Rachitis	Cod Liver Oil and Oyster shell.
<b>PREVENTION</b>	Pox and cankers		Pox Vaccine.
	Worms		Worm control program.

When birds have off colored droppings regardless of age, use PHEN-O-SAL in the drinking water. For more complete literature on Poultry Diseases ask your dealer for Dr. Salsbury's Poultry Health Manual.

### LAXATIVES FOR CHICKS

1. Soda Flush. Common baking soda is often useful as a laxative for baby chicks. The average dose is one-fourth ( $\frac{1}{4}$ ) pound dissolved in five gallons of water. This may be followed immediately with PHEN-O-SAL.

2. Epsom Salts. For 10 day old chicks one pound of Epsom Salts may be dissolved in enough water for 500 chicks to consume in half a day. Increase the dose with age. Do not repeat oftener than once a week. PHEN-O-SAL should be used to help heal the bowel and correct inflammation immediately after the Salts have acted.



# Intestinal Antiseptics

In medical parlance we hear much about intestinal antiseptics. A few years ago when doctors observed the beneficial effect of medicine given by mouth they compared that with the new knowledge of bacteria and antiseptics and they naturally thought that the beneficial effects of medication were due to its antiseptic action, that is, the killing of the germs in the stomach and bowels. This view gained such wide recognition that it was not long before every textbook on medicine and disease spoke of intestinal antiseptics, chief among which were recommended the phenolsulphonates which is the basic medicinal ingredient of PHEN-O-SAL.

For many years PHEN-O-SAL was recognized as a most excellent intestinal antiseptic because of the beneficial effects derived from its use. Then a few years later there was a reversal of opinion and some of the ultra scientific reasoned that it would be impossible to kill bacteria in the intestines and stomach without also injuring the delicate lining. They reasoned that antiseptic condition, that is, a freedom from bacteria, of the stomach and intestines was quite impossible. With that came the general hastily drawn conclusion that medication, since it might not be capable of killing all germs, was more or less worthless. It is interesting to watch how the pendulum swings to and fro in medical styles like it does in feminine headgear and yet there is the conservative balance predominating through it all.

Medication of the intestinal tract proved its value to the primitive man. The roots, herbs and salts that gave relief to the primitive aborigines in distress likewise gives relief to the modern digestive organ be they found in man, beast or fowl. Intestinal medication may not accomplish bacterial destruction, but there are many other ways in which it may do good. The change of reaction from acid to alkali or vice versa is often the determining factor between a good or a poor soil. We know that plants are very sensitive to sour or alkali soil. In the bacteriologic laboratory we learn likewise that bacteria are very sensitive to acids and alkaline. It seems quite reasonable then that bacteria in the human system or in the animal system should be equally sensitive to changes in reaction and medication with such drugs as PHEN-O-SAL containing phenolsulphonates, copper arsenite and other drugs and bring about the type of change in the intestinal tract that inhibits or stops bacterial development, promotes healing of the intestine and thereby checks intestinal disturbances and reduces fevers. The true merits of a product are in the

results of performance and with PHEN-O-SAL we have a product that has performed for a lifetime and it has given a most excellent account of itself.

PHEN-O-SAL cannot be a cure-all. We must expect to find conditions in which it does not do what might be desired.

What are some of those conditions?

Birds infested with worms of the many and various kinds. Birds affected with lice and mites. Birds poorly nourished through inadequately and improperly balanced rations. Poorly housed birds and birds infected with germs in the breathing organs cannot be expected to respond to an intestinal medication. If any of these conditions complicate what you think may be wrong in the bowels, they must be treated for individually and specifically and then you will have good results.

PHEN-O-SAL may be used and with good results in such diseases as the various bowel troubles in baby chicks, cholera, typhoid, many kinds of coccidiosis and as a corrective before and after worming. It is also a valuable aid in addition to the CAMPHO-SAL treatments for bronchial troubles.

PHEN-O-SAL is fundamentally a bowel healer and intestinal corrective and as such it will do its legitimate duty. The dose of medicine used is of importance. No hard and fast rule can be laid down on dosage. Some conditions and some birds respond to relatively small doses but others require much larger doses just as some cars require more gasoline than others. Each condition must be judged on its own merits and medication should be guided more by the response of the individual case than by any written rule. As an average we recommend 8 tablets of PHEN-O-SAL to each gallon of water but this does not mean that this dosage can be widely varied depending upon the type of infection.

## BOWEL TROUBLE IN THE BREEDING FLOCK

This is very often due to a chronic form of coccidiosis. In such cases Rakos has done a real service to the poultrymen by clearing up the trouble and helping to put the birds back into good health and production. If you have a case of chronic coccidiosis causing bowel trouble that is particularly difficult to treat, be sure to try Rakos.

It is a concentrated medicine which comes ready to mix with a grain feed. Rakos also seems to increase the appetite and makes the birds more active.



## MITE DEATH DISINFECTANT

For thorough disinfection, for the destruction of lice, mites and germs, to help control coccidiosis and worm egg development in the soil and in the litter there is nothing superior to Dr. Salsbury's MITE DEATH DISINFECTANT.

May be mixed with water, kerosene, distillate or light oils. Several times stronger than carbolic acid.

1 qt. ....\$1.00    1 gal. ....\$1.50  
1 gal. ....\$2.50



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