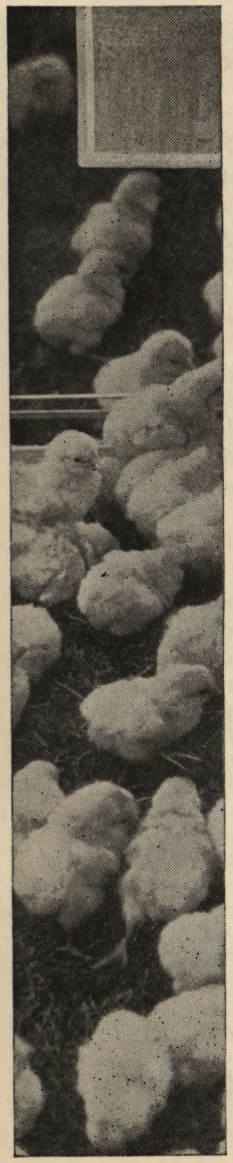
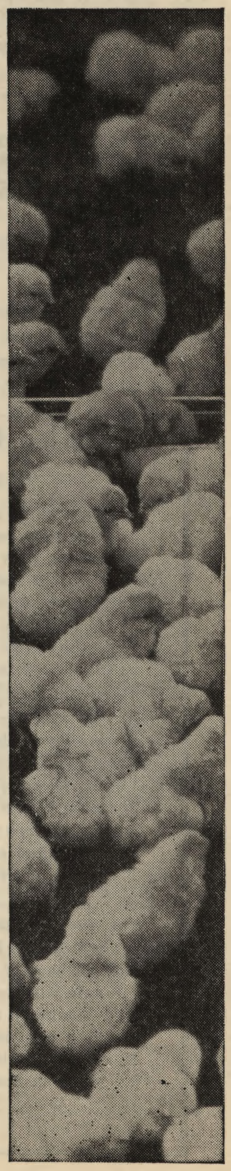
The POULTRY HEALTH Messenger



FEATURED IN THIS ISSUE

Fowl Pox Number



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MAY-JUNE, 1934

The POULTRY HEALTH Messenger

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May-June, 1934

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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!

Like Calls to Like

By EDGAR A. GUEST

If you walk as a friend, you will find a friend
wherever you choose to fare;
If you go with mirth to a far strange land,
you will find that mirth is there.
For the strangest part of this queer old world
is that like will join with like,
And who walks with love for his fellow-men,
an answering love will strike.

If you walk in honor, then honest men will
meet you along the way;
But if you be false, you will find men false,
wherever you chance to stray.
For good breeds good, and the bad breeds bad;
we are met by the traits we show.
Love will find a friend at the stranger's door,
where hatred would find a foe.

For each of us builds the world he knows,
which only himself can spoil;
And an hour of hate or an hour of shame, can
ruin a life of toil.
And though to the utmost ends of earth, your
duty may bid you fare,
If you walk with truth and a friendly heart,
you will find friends waiting there.

How to Avoid Heavy Pullet Losses

THE importance of early worm control as part of a campaign to prevent heavy death losses of pullets is emphasized in an article by Dr. M. A. Jull, Senior Poultry Husbandman of the U. S. Department of Agriculture, published in the May issue of Poultry Tribune.

Dr. Jull first quotes some percentage figures on the heavy mortality in pullet flocks in all parts of the United States and then points out the cause of these heavy losses and suggests what to do to reduce them. Most poultry raisers do not keep records of death losses and for that reason they do not know how heavy such losses are in their own flocks. They will be surprised to learn that even in those sections that had the lowest mortality in farm flocks the owners lost 11 per cent of their pullets. In some states the losses ran as high as 36.7 per cent average in pullet flocks and 38.2 per cent in hen flocks.

These losses usually represent the difference between profit and loss and any reduction in the death losses will add just that much to the profits from the flock.

In the closing paragraph of his article Dr. Jull says, "A potent source of high pullet mortality is infestation with internal parasites while the chicks are growing. Badly contaminated soil over which chicks are allowed to range not only may cause high mortality during the growing season but usually results in many of the pullets becoming so badly infested with internal parasites that death occurs after the pullets are placed in the laying house."

If poultry raisers would only realize what a tremendous amount of damage is done to their growing stock by worms, they would be more careful in carrying out a complete worm control program such as is described in this issue in the article "Early Season Worm Control." Read this article carefully and follow the advice which it contains.

Other heavy losses are caused by fowl pox and all its complications. Losses from Fowl Pox do not occur until fall or winter, but they are so easily prevented if proper steps are taken in time. The pity is that more poultry raisers do not make use of vaccination against fowl pox. This vaccination is so simple and inexpensive that there is no good reason why it should be neglected. The time to vaccinate is right now. If you wait it may be too late. You will find some very valuable information on vaccination against fowl pox in this issue.

Another deadly disease that can now be prevented through vaccination is infectious bronchitis. Read all about this latest discovery in the article on this subject.

And by all means act now, if you want to prevent heavy pullet losses later through worms, fowl pox and bronchitis.

Dr. J. E. Salsbury

Fowl Pox Vaccination - - - Fills the Bill

THE Bill of Grievance against fowl pox with its many complications of roup and colds has been completely filled by Fowl Pox Vaccine. It is not more than six or seven years since the true and accurate method of vaccinating against pox was discovered but during that time the popularity of fowl pox vaccination has come forward with leaps and bounds. When the truth is out, when results are obtained and people can see what they are getting for their money, there is no way of holding back business or progress. When people were trying to convince themselves that vaccination against pox was right and it really wasn't, there was no progress made but just as soon as the correct method was discovered, the one that could stand up under all scientific and practical tests, just that minute the public's confidence was won and it has been gaining friends ever since.

During 1933 considerably over nine million doses of Fowl Pox Vaccine were made under government license in the United States. No other single product comes closer than just a little over half of this quantity in its production volume. Here is a product that was little known even four years ago and has now come to the head of the list of all bacterins and vaccines for combating animal diseases. It will be due purely and simply to the merits of the product and the good results obtained and the profitableness of vaccinating against pox.

People find to their sorrow that birds will contract pox at the most inopportune times; for instance, when eggs are high and birds are scarce, then it goes from pox to cankers, swollen eyes and finally death. Birds that do not die become chronic and linger on in an utterly unprofitable state for weeks and months.

After an experience of that kind and the discovery that all this grief can be prevented by simply plucking four or five feathers from the leg of a growing bird and rubbing into them some pasty liquid with a brush, then the thought of not vaccinating is just too ridiculous for words. The fellow who has had pox and has seen its grief and the fellow who has vaccinated and prevented such outbreaks are not the ones that we are talking to. They know what can be done with vaccination. But the fellow who has not had pox but is destined by the laws of chance to get it next year if he doesn't vaccinate, is the one to whom we should like to whisper a few sentences from our book of experience.

If you live in a so-called pox-free country, do not pat yourself on the back too forcibly. We do not recognize any pox-free territory. In communities where there was no pox before we had lots of it last year and it will be the same again in another year.

The virus that causes pox is a minute little thing that has never been seen. It is just big enough to be carried concealed on particles of dust, on feed, dirt, grain and what not. It is just big enough that when at a least provocation it gets between the layers of the skin it starts to grow right there and produces havoc be that provocation a scab, a peck or the bite of a mosquito. From there on the rest is easy for the virus and difficult for the bird.

We have been talking pox. Is there any one that doesnt' know what it is? The technical man is apt to call it Fowl Pox. The extremely technical man will call it epithelioma contagiosum just to give his tongue exercise. The northern and eastern farmer will call it chicken pox while the plantation owners of the south will call it sorehead. It is all the same germ, it is all the same to the hen. In the dry form it is seen as crusty scabs and scales about the eyes, nose, on the wattles, comb and elsewhere around the head, occasionally on the feet and under the breast. It begins as a small reddish pimple and gradually grows and becomes larger and greyish in color and terminates by drying up as crusty scales that drop off leaving pitted indentations from their finger-like projections into the skin of the attached parts. The finger-like firm projecting attachments are characteristic of pox. A peculiar cheesy odor is also characteristic of pox. In the moist form that is when the virus attacks the membranes of the mouth, throat and eyes, etc., yellow cheesy cankers are formed and these are apt to choke the bird to death before they have time to dry and peel off. It is the same virus again but looks different because the virus is growing in different soil. With the wet form of pox there are usually some birds that have the dry form also and vice versa.

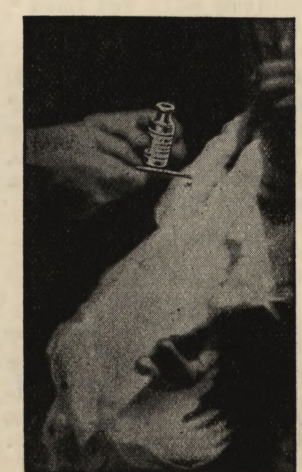
Time to Vaccinate

Vaccination time is at hand right now. Young and old birds may be vaccinated at the same time. It doesn't make so much difference what age the birds are vaccinated just so they are treated in time to develop an immunity before they come into production.

Baby chicks can be vaccinated to good advantage but for all around purposes we usually prefer birds from six to twelve weeks of age. At this time of the season all the chicks should be hatched so that all the birds can be treated at one time. If the old birds haven't had the disease it is a good time to vaccinate them too. They are apt to start molting very soon and that is a good time for them to be building up some immunity to pox while they are no doing anything else.

Our advice to the beginner is that he use the follicle method. It is not the fastest one but it is the most certain and the easiest one to do. Simply pluck from three to five feathers and rub into the follicles some of the vaccine. Complete directions come with the package and tell you just how to go about it. The brush is there too and you have nothing to buy or to worry about. The stick method may be used for those who have had experience and like it. There is more trouble with no takes when the stick method is used than there is with the follicle method. The "no take" problem is reduced when the operator gets experienced and understands exactly what is involved. No experience is necessary with the follicle method.

The vaccination reaction commonly spoken of as "take" begins to show up about the fifth day and continues for



Vaccination is very simple. Merely pluck a few feathers and apply the vaccine with a brush.

PRICES

FOWL POX VACCINE is available in either the chicken or the pigeon strain in any quantity at the following prices:

FOWL POX VACCINE

(Chicken Strain)

For Chicks and Growing Stock

Size Package	Retail Price
100 doses	$1.00
500 doses	4.00
1000 doses in two 500 dose packages	7.00

Pigeon Strain—For Laying Flocks at Same Price.

IT'S TIME.....

To Start Your Fight

AGAINST WORMS

There are two methods of waging war against worms in poultry, the individual treatment and the flock treatment. For the individual treatment use Dr. Salsbury's CAPS. For the flock treatment AVI-TONE or AVI-TABS are recommended.

Individual Treatment

DR. SALSBURY'S
NICOTINE CAPS

To be used as an individual treatment when roundworms only are present. These caps are well coated and ready to give. Give them on a half-full crop and follow with a laxative in 24 hours.

DR. SALSBURY'S
KAMALA CAPS

For use when tapeworms only are present. KAMALA is recognized as the most effective drug for the removal of roundworms. The adult size contains the standard 15 grains of KAMALA. Especially recommended for flocks that are not laying. KAMALA caps are well coated and easy to give.

DR. SALSBURY'S
Kamala-Nicotine Caps

We also make the combination caps which have been our most popular seller.

All caps come in two sizes, the chick size for chickens and turkeys from 12 to 16 weeks of age and the adult size for birds over 16 weeks.

Flock Treatment

In carrying out a flock treatment either AVI-TONE or AVI-TABS may be used.

DR. SALSBURY'S
AVI-TONE

makes an ideal flock treatment and tonic combined. It comes in powder form and may be used either in dry or in wet mash. Widely used for baby chicks and growing birds to prevent worm infestation. Helps to restore lowered vitality whenever birds are in a run-down condition and stimulates the appetite.

DR. SALSBURY'S
AVI-TABS

AVI-TABS come in tablet form and are simply dissolved in water and mixed with mash. They are preferred when there is infestation with microscopic tapeworms and capillaria worms. Because these worms are buried in the intestinal lining where they are not easily reached flock treatment repeated several days has a better chance to reach them than one individual treatment.

It is well also to use AVI-TONE or AVI-TABS after the individual treatment in order to prevent reinfestation.

two weeks, sometimes more and sometimes less. The "take" is a swelling and reaction with scab formation at the point of inoculation. While these changes are going on immune bodies are being developed in the skin over the entire system which protects it against the infection of the virus forever after. This is to the skin what oil is to turbulant waters on the rough seas only it is more lasting than the oil. Recent experiments have shown that the skin as an organ is ten times more capable of producing immunity than any other tissue in the body. There is ample scientific background for the good results obtained with Fowl Pox vaccination.

Doubling Up on Vaccination

While you are handling the chickens to vaccinate them double up on the labor by doing several other little things that need to be done at the same time. In the first place cut out all the undesirable birds and save only those that are worth keeping. Culls can go on the market and will pay for the medicine and then some. If the birds are wormy remember that the early stages of worm infestation are the worst for the chickens. Therefore, get rid of the worms. Use the chick size Worm Caps if the birds are between ten to sixteen weeks of age and the adult size for the older ones. If there is any danger of bronchitis, use Laryngotracheitis Vaccine at the same time. This is applied to the vent. The takes occur and are over with before the pox immunity is developed and there is, therefore, no trouble from using both at the same time.

If there is danger of cholera and typhoid or if you want to immunize the birds against the bacterial form of colds, use the bacterins at the same time. These bacterins also exert an influence before the birds develop the pox takes.

It may be a good plan to move the birds out on range while you have them in crates and they will then be away from parasites of all sorts that are just beginning to get started in the old brooding quarters.

And don't forget lice and mites. Many a bird has unjustly been sent to the market as a cull because the vitality of the body was sapped away by the lice and mites.

Vaccination time is a good all-round checking up time. It is a mid-summer round up and should be taken very seriously by the careful and thoughtful poultryman. If interested in more complete literature on vaccination against pox ask your local Dr. Salsbury dealer immediately for our new Fowl Pox circular. He also has literature dealing specifically with bronchitis vaccination and other disease problems. Personal questions on pox and other diseases will be cheerfully answered through correspondence by our Service Department.

Whether or not you take advantage of any of these free services don't neglect your own birds and be sure to vaccinate against pox.

AVI-TONE PRODUCES STRONG CHICKS

Bridgeton, N. J., May 17, 1934.—My baby chicks are on the prevention program which I have used ever since January. I cannot give it enough praise. I have been hatching eggs in our incubators from flocks that have been on the Avi-Tone. My, what wonderful chicks I get from those eggs. Another year all of our flock owners will have to use Avi-Tone or we will not take their eggs. That's what I think of Avi-Tone. The people in this territory who are using your program are more than pleased with it.—Mrs. L. H. Halter.

MESSENGER HELPS CHICK CUSTOMERS

Jefferson, S. Dak.—I have given many copies of the MESSENGER to my baby chick customers and they all claim they got more good out of the copy alone than out of a year's subscription to other magazines. It is so well gotten up that any ordinary farmer or his wife can follow it and understand it well.—Mrs. Alvana Bernard.

Early Season Worm Control

IT IS a common occurrence for birds to become infested with worms during the latter part of the range season, especially with roundworms and tapeworms. These worms stunt the growth of the birds and may even prove fatal to fowls severely infested.

Roundworms. There are two species of roundworms, the large roundworm of the small intestine and the small roundworm known as the cecal or pinworm. The large roundworm is yellowish-white in color and varies from 1½ to 4 inches in length. The small roundworm is a very common parasite of poultry and is found in the ceca or blind intestine. It is white in color and from ¼ to ½ inch in length. These small worms may be easily overlooked unless care is taken in making the examination.

Tapeworms. There are many different varieties of tapeworms all of which are flat and segmented. They vary in size from the large tapeworm which attains a length of six inches to the short triangular tapeworm which is only 1/6 of an inch in length or the nodular tapeworm which bores into the mucous membrane which lines the small intestine. The nodular tapeworm produces irritation and causes lumps or a nodular growth to form on the intestinal wall which is commonly known as nodular tapeworm disease. This variety is not as common as the others, but its attack is very severe.

Life Cycle. It is quite essential in the treatment and control of worm infestations that the life cycle of the worms be understood. For the effective control of worm infestations this life cycle must be broken somewhere along the line of its development.

Roundworms lay their eggs in the intestine of the bird and these eggs are then passed out with the droppings. If weather conditions are favorable the young worms will be formed in the eggs in about ten days. Birds become infested when they take the egg containing the young worm into their digestive tract with contaminated feed or water. As soon as the eggs reach the small intestine the worms are released and in about thirty days they grow to full size. The shell of the roundworm egg is thick and covered with a glazed surface rendering it very resistant to chemicals and all kinds of weather conditions.

The cecal worms commonly called pinworms locate themselves in the blind end of the ceca. Their eggs are laid in the cecum and carried out with the droppings. The young worms develop in the same manner as the large roundworm after the eggs are taken into the intestine through contaminated feed and water.

The life cycle of the tapeworm must be completed through an intermediate host. Segments are found by the tapeworm beginning at the lower border of its neck. They are pushed backward by new segments being formed until they develop to maturity and become filled with eggs. Then the segment which is filled with fertile eggs is shed from the free end of the worm and passes out with the droppings. It may be seen as a small white body if it has just been passed. The lower membrane of this segment disintegrates and the eggs are released. Before it can develop the egg must be eaten by what is called an intermediate host such as the common house fly, dung beetle, etc. Within the host it then develops into the larva stage. At this stage it is ready to reinfest the bird and does so when the bird eats the fly or beetle. Through the digestion of the intermediate host the larva is released within the intestine and immediately attaches itself to the lining of the bowels by means of its suckers and hooks. In thirty to sixty days it develops into an adult tapeworm ready for reproduction and completion of another life cycle. The life cycle of all varieties of tapeworms is the same in general.

Symptoms and Conditions Produced. An infestation of large numbers of roundworms causes inflammation of the walls of the intestine. The bird takes on an unhealthy appearance and stunted growth results in brooder and range chicks. The feathers become ruffled and the bird becomes pale and looks starved because of interference with its digestion. Oftentimes the bird will have considerable appetite and still become emaciated because the worms consume the digested food.

If the cecal or pinworms are present in large numbers they cause inflammation of the walls of the intestine and the bird will have an unhealthy appearance. However, it is unusual for an infestation of these worms to cause death losses in the flock. On the other hand, they are recognized as being an intermediate carrier for the organism causing blackhead in turkeys.

Tapeworms, which are very common, are fatal to birds more often than any other worms. When present in large numbers they affect the health of the birds very seriously, often proving fatal unless proper treatment is given immediately. Birds infested with tapeworms show all the symptoms that have been described for roundworms. In addition they usually show a marked diarrhea and the feathers around the vent become soiled. A definite diagnosis of these parasites can only be made, however, by finding the segments in the droppings or by post mortem examination of a bird which appears to be affected. A bird infested with tapeworms usually becomes very pale around the face and head, the comb lops and has a somewhat chalky appearance. Birds infested with large numbers of tapeworms become very thin and emaciated.

Method of Examination. In examining birds to find out whether or not parasites are present the different kinds of parasites and their possible location must be taken into consideration. To make a post mortem examination first remove the feathers from the under side of the abdomen. Then remove the breast by cutting from back to front on either side and turning the breast over forward. This exposes the internal organs which should then be loosened from the tissues holding them in place. After they are spread out separately for identification, open and examine the first loop of the bowel which is the outlet from the gizzard and is called the duodenum. After this open the intestine from the duodenum backward and carefully examine its contents and the mucous membrane.

Post Mortem Examination. Upon opening a bird infested with large rounworms and tapeworms, these worms can be seen immediately by splitting the intestine. The cecal or pinworms can also be seen quite readily by opening the blind end of the cecum commonly called the blind gut. The small tapeworms are not so easily seen, but may be suspected when there is an excessive, heavy brown mucus covering the lining of the intestine. By scraping this mucus up lightly with an instrument that has been dipped in water, these worms can be seen. If they are not found in this manner, cut off a section of the split intestine and hang it in a glass of water. The small worms can then be seen floating outward from the wall, the head remaining attached.

Treatment. If the birds are of brooder or range age (10-16 weeks) and they are infested to the extent that large roundworms and tapeworms are visible then these birds should receive individual treatment. If on the other hand they are infested only with the small worms or microscopic tapeworms, then the birds should receive flock treatment.

Individual Treatment. Confine the birds in quarters small enough so the droppings and litter can be easily removed. Proceed in the same manner whether using the Nicotine Caps, Kamala Caps or the combination Kamala-Nicotine Caps.

Withhold all feed and water in the evening. First thing in the morning give each individual bird a worm cap. About 1½ hours later give a laxative consisting of

During Hot Weather

..LOOK OUT FOR LICE AND MITES

Lice, and especially mites multiply so fast during hot weather that they may not be noticed one day and the very next your houses will be overrun with them.

Be on the constant look-out for these deadly enemies and fight them with these three weapons: Dr. Salsbury's MITE DEATH DISINFECTANT, NIC-SAL and LOUSE POWDER.

Dr. Salsbury's

MITE DEATH DISINFECTANT

MITE DEATH DISINFECTANT is a powerful germicide and disinfectant that kills red mites and other vermin by contact. Dilute one part MITE DEATH DISINFECTANT with five parts distillate or light paraffin base oil and spray the whole house thoroughly, including ceiling, walls and floor. Force the spray into all cracks and crevices, around the nests, under the ends of the perch poles, upper and under surface of dropping boards, etc. Repeat this treatment in 5-7 days. As a preventive use it regularly once a month.

Dr. Salsbury's

NIC-SAL

NIC-SAL is a nicotine sulphate preparation used as a roost treatment against lice and mites. It kills body lice through fumes which are generated through the body heat of the birds after they have gone to roost.

For killing mites tie a cloth around the roost supports and saturate it with full strength NIC-SAL.

As an individual treatment for lice and mites place NIC-SAL in an ordinary machine oil can and drop a couple of drops under each wing, on the back of the head and neck and under the vent.

Do not use NIC-SAL for baby chicks.

Dr. Salsbury's

LOUSE POWDER

This is used as an individual treatment against body lice and mites on baby chicks, growing birds, adult chickens and turkeys. Simply dust the powder into the feathers in the region of the abdomen, under the wings, around the neck and head and on the back. Work well into the feathers with the fingers.

equal parts of Epsom salts and soda. For birds 8 to 10 weeks old give one-half pound of the mixture (¼ lbs. Epsom salts and ¼ lb. baking soda) for every 100 birds. Dissolve this in as much water as the birds will consume in 2½ to 3 hours. For birds 10 to 12 weeks old use ¾ pounds of the mixture for 100 birds and for birds 12 to 16 weeks old, 1 pound.

Keep the birds confined in the house. About noon give them a small amount of grain such as cracked corn and wheat, just enough so each will have a few kernels. This is to stimulate the peristaltic action of the intestine which is Nature's method of normal movement of the contents of the intestine and thus help to remove the worms. Toward evening the birds should be given a light feed consisting of mash. The following morning the birds may be released and cared for as usual. Clean the premises by removing all litter, droppings, etc., from the floors, dropping boards, nests or wherever the birds may have left droppings. All of this refuse should be burned or placed in a pit and covered over where it should remain for 12 or 14 days so the heat generated from the manure will destroy the worm eggs and larvae.

The premises should then be sprayed with Mite Death Disinfectant to which 5 parts light paraffin base oil or distillate have been added. Application should be made with a bucket sprayer or with a sprayer of such a type that it will divide the material into a very fine spray and throw it with considerable force into all the cracks and crevices. Cover completely all premises that may have been infested. The clean-up treatment and spraying should be repeated in ten days to two weeks because some worm eggs or larvae may be passed in the droppings which were not destroyed at the first treatment. If this second clean-up is neglected then these droppings may be the means of a reinfestation of the birds.

Flock Treatment. Four to five days before the flock treatment is begun give birds a laxative consisting of a mixture of equal parts Epsom salts and soda. For heavy breed birds use one pound of the mixture for each 100 adult birds. For Leghorns or other light breeds use ¾ pounds of the mixture for each 100 birds.

Follow this laxative with Phen-O-Sal in the drinking water, using 8 tablets to each gallon. For the dry mash flock treatment add 5 pounds Avi-Tone to every 100 pounds of mash and keep this before the birds for seven to ten days. Then discontinue for five to seven days and repeat in the same way as before.

If microscopic worms are present then a wet mash treatment using Avi-Tabs should be given. Use 20 tablets for every 100 adult birds. Dissolve them in one pint of water the evening before and use this solution to wet a mash to a crumbly consistency the next morning. Give this to the birds as their first feed each morning for a week to ten days. This should be followed at the end of the treatment with another laxative. Discontinue the treatment five to seven days repeating the same as before.

It is also essential that a definite clean-up program be practiced during the flock treatment for internal parasites.

Prevention and Control. Control measures will be greatly assisted by placing birds on clean ground as much as possible. If the houses and quarters are permanent it will assist very materially in controlling worm infestation if the quarters can be arranged so as to be interchangeable and each yard used only one year out of three and cultivating a crop the other two.

It is essential that the waterers be so constructed as to keep the birds from carrying contamination into them with their feet. They should be placed on a low platform covered with wire netting so that any water which is spilled will fall through the netting and thus prevent a muddy sloppy condition around the waterer. This platform should be large enough so the birds will be on dry soil when they step off from it. The feeders should also be constructed so as to prevent the birds from contaminating the feed with their feet.

As a prevention program against worm infestation, add

(Please turn to page 11)

Infectious Laryngotracheitis

(Infectious Bronchitis)

ITS CAUSE PREVENTION *and* TREATMENT

INFECTIOUS laryngotracheitis is sometimes called infectious bronchitis or virus bronchitis. It is an inflammation of the windpipe (larynx and trachea) which causes the windpipe to become filled with mucus and a bloody discharge. This stops the passage of air to the lungs and causes the bird to choke to death.

The first serious outbreak of this deadly disease swept the country in January, 1924, and ever since then it has caused heavy losses among brooder chicks in the spring and among pullets in the fall. It often attacks battery brooder chicks as well as battery broilers in the fattening plant.

Infectious laryngotracheitis is so widespread that no flock of pullets is safe from an attack during the fall and winter. It strikes directly at the fall and early winter egg production in pullets, just at the time when eggs are most desired because of the higher prices. The losses in lives and in egg production caused by this disease are tremendous.

The Experiment Station Record reports a survey of 75 flocks in which the average death rate from infectious laryngotracheitis was 11 birds out of every 100 pullets. The deaths in various flocks varied from 0 to 50 per cent, showing that the disease is more severe in some outbreaks than it is in others. The average duration of the disease was 15 days. The time of sickness in various flocks varied from 4 to 40 days. Out of 25 flocks located in 8 different neighborhoods and consisting of 14,574 birds in production, 1,916 died. This was an average rate of 13 per cent.

The total loss in production of these flocks was 1,888 2/3 dozen eggs. The birds went down in production on the fourth day after the symptoms first appeared. Birds were back in regular normal production thirty days later. The greatest drop in egg production was 12 per cent on the eighteenth day of the disease, or 7 days after the time when the greatest number of deaths occurred. The loss in the value of eggs was $3,200, or an average of 21c per bird.

Cause of the Disease

Infectious laryngotracheitis is caused by a virus, that is a living organism too small to be seen under the most powerful microscope. Conditions that break down the natural resistance of the bird to disease, such as poor housing, bad management, improper feeding, intestinal worms, especially microscopic tapeworms, lice, mites, etc., render flocks more susceptible to infectious laryngotracheitis. In brooder chicks alternate chilling and overheating, floor drafts, poor ventilation and unsanitary conditions may bring on the disease.

The virus which is the direct cause is eliminated from the body of infected birds through the mucus (slime) thrown out in coughing and sneezing. Some of the particles of mucus are microscopic in size and light enough to float in the currents of air until they land on the ceiling, walls, floor and equipment or until they are breathed in by other birds.

The disease may be spread either by a chronic carrier bird, that is a bird which has passed through the disease, through introduction of a sick bird into the flock, by shipping birds in infected coops or by placing pullets in houses in which the disease occurred the year before.

How the Birds Look and Act

The first signs of the disease will be noticed in the bird in three to ten days after the virus has been breathed in. After it has been inhaled the virus lodges on the mucous membrane which lines the larynx and windpipe. At first the outer layers of the membrane are attacked and later the deeper parts. The blood vessels of the windpipe become congested with blood, straw colored fluid is thrown out and bleeding of the membrane takes place. As a result a bloody mucus, and in later stages blood, accumulates in the larynx and trachea making breathing difficult. There is a rattling in the windpipe caused by the passage of air through the discharge in the windpipe. The bird extends its head into the air gasping for breath or it may sit with mouth open, and a distressed appearance of the face while bloody mucus may be seen in the mouth and throat. The bird has a rough coat, its crop is empty and it rapidly becomes poor.

The final outcome of the disease will be one of three things. The bird will either completely recover, become a chronic carrier or die. In the fatal case the bird dies in a fit of coughing, death being caused by suffocation as a result of the mucus and blood in the windpipe.

The disease usually strikes quickly, runs through the flock very rapidly and causes heavy death losses unless vigorous measures are taken at once to stamp it out. It acts the same in chicks as it does in adult birds. In chicks the sneezing is usually noticed more distinctly at night after the chicks have settled around the hover.

Post Mortem Appearance

Examination of a bird dead from this disease reveals a bluish head, bloody slime in the mouth, widespread bloody areas on the inside of the windpipe and oftentimes a clot of blood and slime which was sucked into the larynx and thus caused immediate death.

What to Do

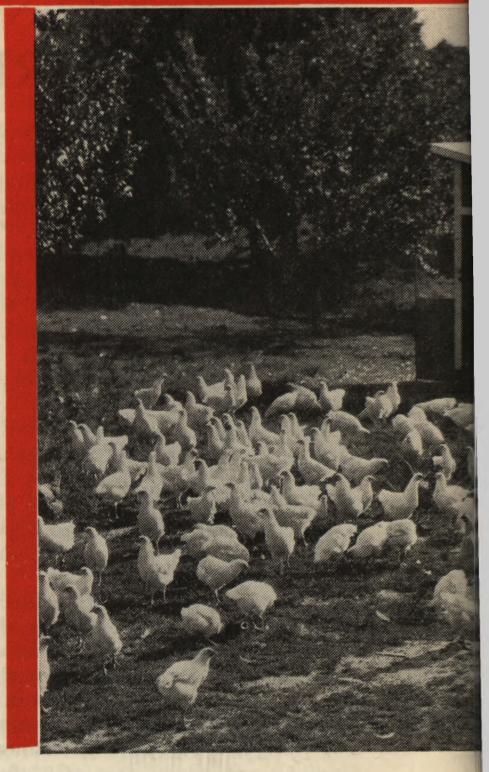
When infectious laryngotracheitis breaks out quick action is imperative. Separate all of the birds showing the slightest symptoms and place them in a separate house. Spray these birds immediately with Cam-Pho-Sal solution, using the regular dilution of 3 teaspoonfuls Cam-Pho-Sal to ½ pint of hot water. Use this quantity for each 100 pullets or 400 brooder chicks. Use a sprayer that throws a fine mist. Make sure that all ventilators are closed, then spray directly over the birds so the mist will settle down on them. Repeat every hour day and night until relief is noticed.

If the weather is cold set up a brooder stove with a thermostat and regulate the room temperature at 70°. On top of this stove keep a Cam-Pho-Sal solution of the same strength as that used for spraying. This will constantly give off medicated vapors that are constantly being breathed in by the flock and are valuable in the control of the disease. It also increases the humidity within the building which seems to assist very materially the breathing of the birds and the effectiveness of the Cam-Pho-Sal. For spraying birds in batteries, cover the batteries with feed bags to confine the medicated vapor to the birds in the battery.

The birds should be given a laxative consisting of equal parts Epsom salts and baking soda. Give one pound of this mixture to 100 layers by dissolving this quantity in 1½ gallons of drinking water.

After the disease has been checked the birds should be put on a wholesome mash ration containing 2 per cent Avi-Tone as an aid to digestion and to increase the appetite as well as to tone up the system in general. The Avi-Tone treatment should be continued over a period of

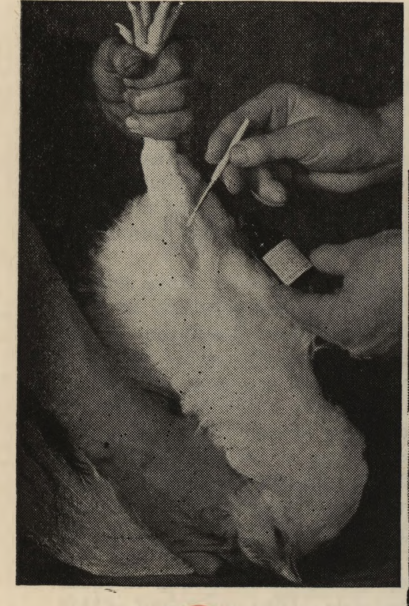
V A



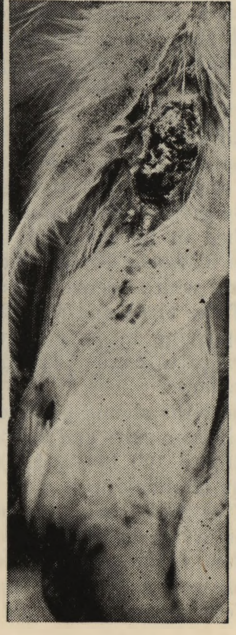
EVERY year, poultry raisers lose thousands of dollars in valuable birds and egg production through Fowl Pox, sometimes called Sorehead, Chicken Pox or Bird Pox. This virulent disease sometimes strikes suddenly or takes its toll in the forms of cankers, roup and other complications. It attacks poultry in the late fall or early winter when eggs are highest in price. Consequently, you run the danger of a severe loss on your poultry investment if Pox should break out in your flock. But when it does break out it will be too late to avoid heavy losses. The only way to guard against the danger is to vaccinate now.

Don't Run the Risk of This Danger When It Is So Easy to Prevent It . . . . . .

Fowl Pox losses can be prevented by timely vaccination with Dr. Salsbury's Fowl Pox Vaccine. This has been proved by the practical experience of poultry raisers, generally. In our Fowl Pox vaccine we have produced a product of high potency and complete dependability. Millions of doses were prepared in our laboratories during 1933 and used by poultry raisers in all the main poultry states with splendid success.



It is very simple to vaccinate. Above picture shows "follicle" method. You merely pluck five or six feathers from thigh or drumstick and apply the vaccine with a brush to the feather follicles. Rub in well and job is over.



Fowl Pox Vaccine "take," two weeks old.

For Best Results...

VACCINATE EARLY

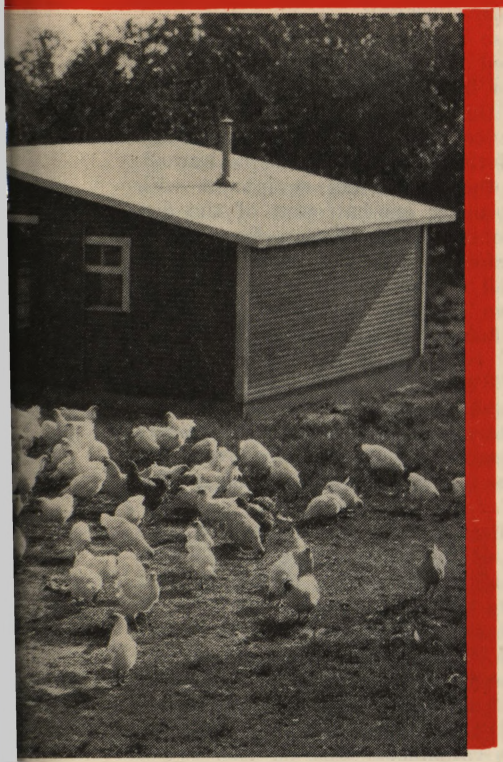
According to past experience the most popular time to vaccinate is when chicks or poults are from six to twelve weeks old. No poultry raiser should permit the birds to go over the 12 weeks period without Pox Vaccination; the immunity of your birds should be complete before they go into laying quarters. Mature birds may be vaccinated, as the last resort, if chick vaccination has been neglected. Don't make the mistake of waiting until Chicken Pox has appeared in your flock before you vaccinate. An ounce of prevention is worth a pound of cure. For a few cents, you can prevent the loss of many dollars.

EASY TO VACCINATE!

Vaccination with Dr. Salsbury's Fowl Pox Vaccine is a very simple and easy proposition. No syringes are necessary, and by following the simple directions, which come with every package, you can do the vaccinating yourself without trouble.

T F POX *Now!*

OSSES LATER!



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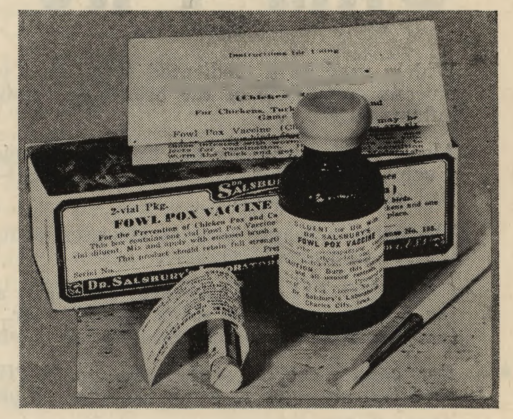


VACCINATE YOUR TURKEYS, TOO!

Turkeys are very susceptible to Pox, Cankers, or Sorehead. It is, therefore, very important to vaccinate your turkeys as well as your chickens. Always use the Chicken Strain.

Dr. Salsbury's Fowl Pox Vaccine Is Made in Our Own Laboratory

Dr. Salsbury's Fowl Pox Vaccine is produced in our own modern, well equipped and highly sanitary laboratory under Government license. Each department for the production of our various types of vaccine is segregated from other departments and designed and equipped to produce vaccine of the highest purity and potency that assures complete satisfaction.

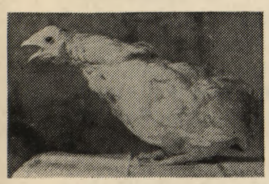
COSTS VERY LITTLE TO VACCINATE

Dr. Salsbury's Fowl Pox Vaccine (Chicken Strain) may be obtained for the following very moderate prices: 100 doses, $1.00; 500 doses, $4.00; 1000 doses (in two 500 dose packages), $7.00. The Pigeon Strain is available at the same price.

SEE YOUR *Local* DEALER

whose name appears on the back page of this publication. We suggest that you call, in person or by phone, so that you may obtain our Fowl Pox folder, just off the press, which gives complete information and directions. Plan to vaccinate your birds now and avoid the heavy losses from this fast spreading disease that is common, now, all over the country.

Vaccinate Against Bronchitis



At the Same Time You Vaccinate Against Fowl Pox

We are pleased to announce that Dr. Salsbury's Laboratories are now producing Bronchitis Vaccine. This will enable poultry raisers to prevent Bronchitis and remove another of the many dangers that might rob you of your poultry profits.

Exhaustive tests have been made to prove the strength and reliability of Dr. Salsbury's Bronchitis Vaccine. It is manufactured under Government license in a special unit of our newly equipped laboratory designed for the manufacture of Bronchitis Vaccine, only.

We suggest that you vaccinate your poultry against Bronchitis at the same time you vaccinate with Dr. Salsbury's Fowl Pox Vaccine (chicken strain). See your dealer for directions and other educational material.

Prices:	100 doses	$ 3.00
	500 doses	12.50
	1000 doses	24.00

two or three weeks intermittently, allowing ten days or two weeks between each treatment, until the flock resumes its normal vitality. If the droppings are off colored or if a slight diarrhea is present, Phen-O-Sal should be added to the drinking water, using 8 tablets to every gallon of drinking water during treatment of the disease.

As soon as the birds which show any sign of the disease have been removed those left in the flock should be vaccinated immediately with Dr. Salsbury's Infectious Laryngotracheitis Vaccine. This vaccine establishes immunity in about ten days, and after that no more birds should come down with the disease.

These birds should also be sprayed with Cam-Pho-Sal the same as recommended for the affected ones. Thoroughly clean out all litter in the house and all droppings and other material from the dropping boards, nests, runways, etc., making sure to scrape loose all caked and hardened matter. All of this material should be burned. Then thoroughly spray the house and equipment with Mite Death Disinfectant, using one-half pint of the disinfectant to every gallon of water. Use a force spray pump and drive the disinfectant solution forcibly over all surfaces and also into all cracks and crevices in which the infection might have lodged. Go over the entire ceiling, all of the walls, floors and equipment.

Vaccination as a Preventive

Since infectious laryngotracheitis is so widespread and so deadly when it breaks out in a flock poultry raisers everywhere have welcomed the recent discovery of Laryngotracheitis Vaccine as a preventive against this dreaded disease.

The loss from this disease is so great when it does strike that the low cost of the vaccine is a valuable insurance policy against such losses among pullets in their laying period. Estimating that each pullet is worth $2.00, then on the basis of the experiments referred to earlier in this article, a flock of 500 pullets attacked by the disease would suffer an average money loss of $235.00. The vaccine to protect these pullets and insure them against the disease costs only $12.50. Certainly a low cost insurance policy and yet so valuable.

The average poultry raiser can successfully vaccinate his flock against infectious laryngotracheitis if he carefully follows the directions on the package. Dr. Salsbury's Vaccine is made under government regulation and is carefully tested before it leaves the laboratories.

Birds may be vaccinated any time from six weeks of age to maturity, but it is well to vaccinate the pullets during the summer and in that way overcome the danger of an early fall outbreak.

The vaccination of laying pullets has little or no effect on egg production. In those cases where a slight drop was noticed about the second or third day, this was thought due to fright as a result of the handling rather than to the vaccine.

The vaccination against infectious laryngotracheitis has been reported to be about 100 per cent effective. Surveys definitely show its value as a preventive and also that it stops other birds from coming down in unvaccinated flocks where the disease has broken out.

How to Vaccinate

The Infectious Laryngotracheitis Vaccine contains a live virus and should therefore be handled with great care. It should be applied with a stiff bristle brush being careful not to flip the brush and throw the vaccine into the air. Use the same type of brush that is used for vaccination against fowl pox. With an assistant holding the bird, the upper portion of the vent is turned outward. Dip the brush into the vaccine and apply a small amount lightly to the mucous membrane in the upper portion of the vent by stroking back and forth three times. The reaction should take place in three days and the part should be healed in ten days. The bird is then proof against the disease. The reaction at the point of vaccination will be seen as an inflammation, swelling and a cheesy discharge.

Care should be taken by the one who is doing the vac-

cinating not to get the hands or vaccinating brush near the head of the bird.

Do not try to stretch the dose. Each bottle contains a definite weighed amount for exactly the number of birds stated on the package. If the dose used is too small, some birds may not "take" and may then catch the disease from the vaccinated birds. All birds in the flock should be vaccinated, otherwise those not vaccinated are likely to contract the disease from the ones that are vaccinated.

Watch the date limit on the package and keep the vaccine in a cool place (refrigerator or cellar). Be sure to carefully read the directions and carefully follow them.

EARLY SEASON WORM CONTROL

(Continued from page 6)

1 pound of Avi-Tone to every 100 pounds of mash. Keep this before the birds until they are six to eight weeks old. Two Phen-O-Sal tablets should be added to every gallon of drinking water during this period also. Birds from six to twelve weeks old should receive Avi-Tabs as a preventive. Dissolve 12 Avi-Tabs in one pint of warm water over night. Mix this with about 1½ quarts of mash, or enough to make it crumbly, and give this as the first feed in the morning for five consecutive mornings of each month. On the same days that the Avi-Tabs are given, add four Phen-O-Sal tablets to every gallon of drinking water.

It has been found that a persistent, regular prevention program as outlined will reduce infestation of growing stock with roundworms and tapeworms to a minimum.

Our Daily Mail

Why Vaccination Did Not Stop Death Losses Entirely

QUESTION: I had a cockerel sent to your laboratory for inspection. This flock had lost two, and I suggested using Cholera Typhoid Bacterin. They used it on the ones left in the flock and lost three after vaccination. Two other parties had used the bacterin from the same bottle and reported good results.

Answer: Examination of the cockerel you sent us showed a great many lice, some peritonitis, inflammation of the kidneys, a green diarrhea and some capillaria worms in the intestinal tract. It is probably this complication of conditions that keeps the birds from responding to the treatment.

Lice are quite injurious to birds and we have noticed many times especially in the male birds that they actually have died from no other cause than the sapping of their vitality by lice. The peritonitis seemed to be due to a chronic form of cholera. We obtained cholera-like bacteria in these cultures.

In addition to treating for lice and for capillaria worms using five pounds of Avi-Tone to every hundred pounds of mash as a flock treatment for five consecutive days of each month, we would suggest that you continue the treatment for cholera. It may be necessary to re-vaccinate with the Cholera-Typhoid Bacterin or even to use a special bacterin made from the cultures that we have obtained. Then medicate the drinking water with Phen-O-Sal tablets. Thoroughly clean and disinfect the premises and change the feed for a while.

Cholera — Chronic Coccidiosis

QUESTION: I am sending you two birds by express. The one with the red band is out of a flock in which we are losing birds rapidly. From all I can learn and from what I found by posting it looked like a form of poisoning. They threw out some spoiled oats. The birds that had access to this are the ones that died. The other bird is from a flock that has been troubled for about three seasons in winter. Last year they used Phen-O-Sal and as long as the birds had it they seemed to get by, but when it was discontinued they would go haywire.

Answer: The bird without the band was dead when it arrived and showed typical lesions of fowl cholera. In treating cholera we would suggest that you vaccinate with the Cholera-Typhoid Bacterin, medicate the drinking water with Phen-O-Sal tablets and then thoroughly clean and disinfect the premises. Also change the feed for a while so that it contains less corn and protein and more bran and oats.—The banded bird also had a diarrhea, scaly legs and peritonitis with many coccidia in the intestinal tract. In treating chronic coccidiosis we would suggest that you use Rakos according to the directions which come with each bottle.

A Perfect Cure for a Badly Infested Flock

QUESTION: Lockport, Ill., April, 1934.—It probably has escaped your memory that I wrote you the middle of last December for a 250 c.c. package of Avian Mixed Bacterin. I ordered it with little faith and a perfectly disgusted attitude for I am sure that my bunch of about 240 fall pullets had all the diseases that feathered chickens are heir to for I could easily diagnose colds, bronchitis, roup, diphtheria, coccidiosis, chicken-pox and what not except that I had eliminated the worms and lice, when I placed them in the laying house in October. I have a modified Missouri laying house with concrete floor 48x64 and a good system of ventilation which was recommended and superintended by your former employee. The original flock consisted of about 500 large, thrifty, early hatched pullets. They started in laying right away but soon began to fail in production and looks and died off at the rate of 2 to 6 per day. I tried sprays of all descriptions, some commercial and some of my own manufacture, changed feeds, gave tonics and appetizers but all to no avail. I finally sent for your bacterin and a 10 c.c. syringe, and with the aid of two helpers shot all that was left, about 240, in about one hour. I am fairly handy with a hypo as I have practiced medicine over 37 years. I promised when I wrote for the medicine that I would report all casualties.

Now, Dr. Salsbury, I want to say to you, before I make this report that if you made it to me under similar circumstances, I would consider you a prevaricator of the first water but all the evidence to the contrary, I still have the 240 chickens and they are now laying better than 50 per cent. I can refer you to Mr. Mathews as to my veracity although he and I might argue some over that point as we have over many others. He formerly lived in Lockport and I was his family doctor.

Now doctor, what I want to know is this, is it possible to treat chickens from 4 to 6 weeks old with the same bacterin and if so how much is the dose and how long will the immunity last? Can I repeat it this fall when I place the next crop of pullets in the laying house or should it be done oftener? Thanking you for your kindness and patience in wading through all of this harangue, I realize that one swallow doesn't make a summer but I thought you might like to know that your remedy effected at least one perfect cure for a badly infected flock. There were many more just like them in this neighborhood and I think that your representative with a little help could dispose of quite a lot of bacterin in this neighborhood. You are at liberty to use my name in that respect.—Walter R. Paddock, M.D.

Answer: We recall very distinctly writing you last year in regard to your poultry troubles. Naturally we are more than pleased to hear that you have had such good success. We always rejoice with our customers who can bring order out of chaos in the treatment of many complicated conditions that affect poultry.

It is quite satisfactory to vaccinate chicks six weeks of age with the same bacterin. From ½ to ¾ cc.c. is the average dose. As a rule the immunity lasts from three to six months. Recently some authentic work has been done by one of the Experiment Stations which indicates that even in badly affected flocks perfect protection may be had against typhoid by vaccinating every three months. It is not at all impractical to vaccinate that often and one is assured of better protection by so doing.

In treating stock of that age one must also keep worms and coccidiosis in mind and should any of these causes appear specific treatment should be given accordingly.

Tobias Trundle's Troubles

By WILLIAM HERBERT RICE

SPRING had danced joyously into Tuperton Corners. Never had the skies been so blue, the flowers so gay, the birds so boisterously happy. And never, thought young Jeff Morrison, never had his wee wife looked so alluringly lovely. But this morning, pouring over a magazine in their Salsbury Service Station, she appeared to be in a study, brown as her hair or her pretty eyes.

"Janet!" chided Jeff, "You're out of tune—frowning on such a day. What's wrong—is the villain still pursuing the fair—"

"There you go!" giggled Janet. "I'll have you know, this is a poultry magazine."

"So? Anything you understand, Kittens?"

"No—y-yes, I mean—Smarty! Except, it speaks here about 'Sex-Linked Chicks.' Know 'em, Jeff?"

"Sure, Honey. They're hybrids—certain breeds crossed, you know—so's to tell the boy chicks from the girl chicks the day they're hatched. F'r-instance, if a Rhode Island Red papa is mated to a Barred Plymouth Rock mamma, their little boy hatches out black in down with a white spot on the back of his head, and with yellow beak and shanks; the little gals have black down all over, and black beaks and shanks."

"Wonderful!" gushed Janet. "But, Jeff, can they do that—tell the sex—with all breeds?"

"Not yet—with Sex-Linking; but in Japan, they claim to have a new method that does the trick. The Japs have a name for it—'Shosibini no Shiukanbetu Jidai Kitaru,' which means—"

"—'a method for sex determination of baby chicks through examination of the rudimentary copulative organs'—" interposed Janet, quoting glibly. "You see, being the wife of a big Dr. Salsbury, super-service man, I read the poultry papers—too. Now, listen! In just one hour, you're due at Setauket; you know, that party—Tobias Trundle—that called up about his flock. Get going, big boy!"

Seeking directions to Tobias Trundle's place, Jeff stopped at Setauket's general store. From the storekeeper—seized with a rush of words to the mouth—he learned that Tobias (known thereabouts as "Whiskers") was a stickler for ideas aged in the wood, and a cantankerous old customer, too contrary to ache when in pain. However, black as Tobias had been painted, Jeff (ten minutes later) discovered the old timer's flock was—worse. Never had he seen such a comprehensive collection of poultry—misery symptoms in convention.

"Th' darn fools all layed down on me t'once!" complained Tobias. "Guess they need dosin' with your Dr. Salsbury medicines. I hear say they're tol'rable good."

"Best in the world!" enthused Jeff. "But they can't raise the dead. Your chickens are dying on their feet. Let's see your chicken house."

One glance inside the damp, dark filthy shack, told the story.

"Whew!" sniffed Jeff, "Ever clean this place?"

"Now an' then," shrugged Tobias. "Th' critters ain't fussy."

"Neither are germs, worm eggs and coccidia. A damp, dirty chicken house is deadlier than the sword. How about your chicken yard—plowed it up lately or limed it?"

"That's my business, young feller!" bridled Tobias. "Docterin's yours. Whatcha aim t' do?"

"First," said Jeff, "I'm going to cut open a chicken and find—"

"No y' ain't!" contradicted Tobias. "I don't believe in no op'rations!"

"Well, then, I'll test them for B.W.D."

"What's that?" demanded Tobias. "One o' them gover'ment diseases, like N.R.A.? What's them letters stand for?"

"Bacillary White Diarrhea—a germ disease, and deadly; but Dr. Salsbury's Antigen spots the infected birds, pronto. It's a simple blood test—"

"More cuttin', eh? No! That's out, too! Got any sensible idears?"

"I might suggest," said Jeff, muzzling his temper, "I might suggest Cam-Pho-Sal spray and Phen-O-Sal tablets, to heal their lungs and intestines; I might suggest worming with Kamala-Nicotine, or other sure-fire remedies—Avi-Tabs, Avi-Tone, etc.; but—since you wouldn't listen, and since your flock has almost everything from Lice and Bumble Foot to Coccidiosis and Cholera, you might burn the chicken house and plow up the run."

"I might, huh! What else?"

"Build a sanitary chicken house and a new run; then buy a new flock, keep 'em fit by Dr. Salsbury's Prevention Program, and build immunity against disease by vaccination."

"Vaccination?" snorted Tobias, "Vaccination! That's a lot o' flam-doodle! When I was a young squirt like you, I was vaccinated and baptised, an' neither took. All this here serum hokum an' Anti-this an' that is just a money-grabbin' racket—an' dang'rous!"

"Listen, Tobias!" smiled Jeff, "If it's a racket, it's a good racket! And dangerous? Why it's dangerous not to be vaccinated. That goes for people and—poultry. Chickens, you know, aren't particular, and (with the millions of disease germs they pick up in worms, decayed matter, etc.) they need a protector. That's what vaccines and bacterins are. You see, they're developed from the same germs that cause disease, and when they're injected in a fowl, they fight to keep their relatives from butting in—fight fire with fire—catch thief with thief idea, you know."

"Vaccination's safe, harmless and saves purse-strain. Why, man, **for two 59c dollars,** you can get sufficient of Dr. Salsbury's Chicken Pox Vaccine to exempt 100 fowls, for life; or ample Cholera-Typhoid Bacterin to save sixty birds; or enough Mixed Bacterin to immunize 100 pullets from Colds, Roup, Diphtheria or Bronchitis. Now," continued Jeff, "here's a copy of Dr. Salsbury's Poultry Health Manual. If you want **real** information—it's in the book. Good day, Tobias!"

Janet was waiting when Jeff drove in. "How'd you find Tobias?" she asked.

"Easy," scowled Jeff. "I just peeped through his whiskers—and there he was. The old buzzard! He hasn't shaved since Bryan ran for President." Mad clean through, he told her about Tobias.

"Forget it, Jeff," soothed Janet, "You've done your daily good deed. Just wait—he'll be seein' you!"

And he did. Two months passed, then—responding to a SOS—Jeff motored to Setauket. Again Janet awaited him.

"Well," she quizzed, "any luck, matey?"

"Lots!" grinned Jeff. "Believe it or not, Tobias took my advice—got a new chicken house, runs, and flock. He was right down to the mourner's bench, and meek as Moses—thanks to his neighbors and some city slickers."

"City slickers?"

"Yes. They palmed 500 bootleg chicks on him. That's what burned him up—knowing they'd never lay an egg."

"Diseased—or something?"

"No; fine and dandy. But the neighbors complained so, I had to caponize the whole kiboodle. Next week, I'm to vaccinate the lot."

"City slickers—caponizing—bootleg-horns! I don't understand, Jeff."

"Well, you see," laughed Jeff, "all those chicks had white spots on their heads, and yellow shanks. The slickers bought 'em, cheap, at a Hatchery specializing in Sex-Linked chicks."

"You mean," giggled Janet, "You mean—"

"Sure!" roared Jeff. "Every mother's son of 'em was a—rooster.

Why and How to Caponize

A capon market has been developed by a demand for a roasting bird that is heavier than a large hen, yet lighter in weight than a prime young turkey. Such a market is very discriminating and pays top price for birds in prime condition. The principal capon market opens late in January and continues through March. Within the last two or three years there has been a Thanksgiving and Christmas demand for capons that was equally as good as the late January and March market.

By marketing the cockerels as capons the poultry raiser receives a much better price for them than he would if he were to sell them at a time of the year when the market would be lowest for two or three pound birds due to the fact that the majority of cockerels from the farm are being marketed at that time. The cockerel becomes a great deal larger when caponized, retaining the tenderness of the meat which is characteristic of the young male. Capons are a great deal easier to raise than turkeys and as a rule the price is the same or very near that of turkeys.

The strong, vigorous cockerels should be selected, the operation being performed before there is very much sign of comb development. Birds weighing from 1¾ to 2 lbs. are the proper size. They attain this weight in 8 to 10 weeks.

Preparation

Birds to be operated on should weigh approximately 1¾ to 2 pounds. They should be kept from feed and water for at least 36 to 48 hours (48 hours is better). They should be confined in houses or coops with bare floors. If held in an open lot, they will pick up too much material from the ground.

A bright sunny day should be selected. Sunlight is essential for a good view into the abdominal cavity. A good headlight, such as is used by medical doctors for examination of the throat, is also beneficial. For the operating table a barrel or a small table is suitable. A barrel is about the right height and size, and is easy to work around in performing the operation.

Confining the Bird

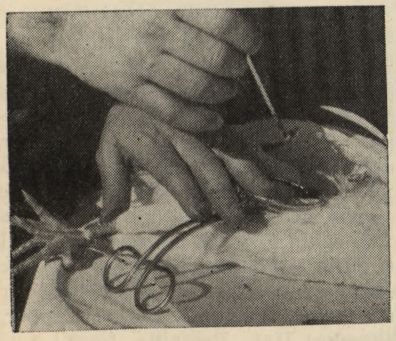
A cord is fastened around both legs of the bird above the hocks. A weight (about the size of a half brick) is attached to the opposite end and hung over the side of the barrel. Another cord is passed around the wings, holding both of them together above the back, a similar weight is attached to the opposite end and hung over the edge of the barrel on the opposite side. This will hold the bird securely, prevent struggling and will stretch the limbs to allow easy access to the ribs.

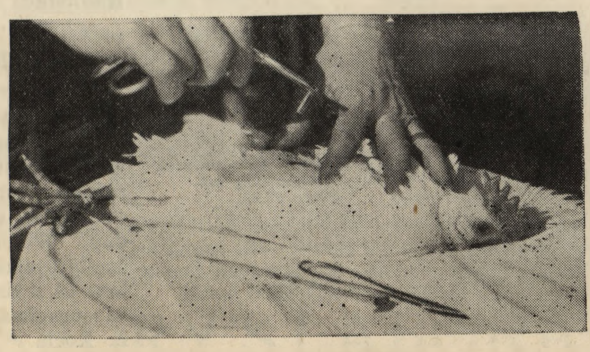
Place the bird on its right side and remove the left testicle first. The operator should stand at the rear and lower side of the bird, facing forward and upward toward the abdominal cavity. Pluck a few feathers in the space between the hip-bone and the last two ribs. The feathers may be slightly dampened.

The Operation

Place the tip of the index finger on point of hip-bone, pass forward into the space between the hip-bone and the last rib, find the last rib and locate the space between the two last ribs. This space is very narrow and must be definitely located. While holding the finger in this position follow down the fingernail with the point of the knife, beginning at the upper portion of the space next to the backbone, make the incision deep between the last two ribs, about a half inch or more in length. (Note the incision in the cut.)

You are now ready to insert the





Above: The testicle is removed by twisting the cord. Note how the spreader curves with the body.

Right: The incision has been made between the last two ribs and the natural curve spreaders are about to be inserted.

spreader. Pick up the spreader by the handles, hold the jaws close together, insert spreader into opening and spread slightly. If the opening is not sufficiently large to operate through, cut upward toward the backbone. In making the incision be careful not to cut too low down as the attachment of the last rib on the lower side may be cut. This will not injure the bird, but upon inserting the spreader, the incision spreads at the bottom instead of higher up, which makes it more difficult to proceed in removing the testicle from the abdominal cavity.

The opening having been spread sufficiently, you now note a thin membrane. By means of the hook on the opposite end of the remover, pick up the membrane beginning high up, close to the backbone with a downward stroke, tear this membrane. If the bird has been properly fasted the intestines will be toward the lower part of the abdominal cavity out of the way and the testicle in plain sight attached to the backbone near the middle of the back close to the attachment of the last two ribs. In the heavy breed birds it will be of a slight yellow color, slightly larger than a grain of wheat.

Pass the testicle remover into the abdominal cavity. If the bird is confined on right side, insert remover at rear end of testicle working under and forward; if bird is confined on left side, insert remover at front of testicle working under and backward, permitting the cord and sheath below the testicle to pass backward into the slot in the center of the remover. Give the remover a full turn, twisting the cord, after which the testicle may be lifted out. If the cord does not break readily upon lifting almost to the opening in the abdominal wall, insert point of the knife just under the remover and sever the cord and membrane. Remove the testicle on the opposite side in the same manner. In picking up the testicle the remover may be inserted from either end, whichever is handiest for the operator.

Be sure that every particle of the testicle is removed. Otherwise, the birds are not completely unsexed and are known as "slips." Be careful in picking up the testicle that the large vein, called the posterior vena cava, is not injured. Such injury will result in excessive bleeding and will cause instant death.

Be careful not to allow feathers or foreign material to enter the abdominal cavity.

In releasing the bird, hold it upright and permit the feet to come down in the normal position. Be careful that a loop of intestine does not protrude from the incision. When the feet gain their normal position the muscular wall is drawn over the opening and prevents the intestine from protruding after the bird is turned loose.

Losses from operation when this improved set is used should be very low, providing the bird has been properly fasted and care is practiced by the operator.

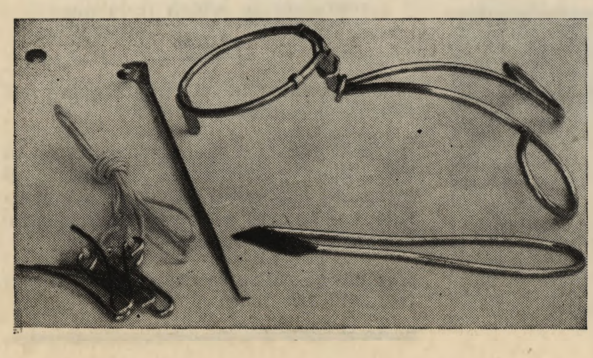
Care After Operation

After the operation confine the birds for a few days in small inclosures with very low roosts. Keep them clean and dry and feed them carefully on a nutritious but not bulky diet.

Ballooning or Puffing the Skin: The puffing or ballooning of the skin of the abdominal wall around the incision may take place a few days after the operation. This is caused by the rupture of the air sac in the abdominal cavity. The air coming through the inside flesh opening after the skin has healed on the outside, causes a collection of air between the skin and the muscular wall.

This may be relieved by cutting an opening one-half inch wide to let the air out. Better still, grasp the skin about the center of the enlargement with a small pair of forceps and raising slightly, with a small pair of scissors, work under the point of the forceps and cut out a small piece of skin. In this manner an elliptical opening is left in the skin which gives immediate relief to the puffing and such opening will not close up before the incision of the operation is healed. A darning needle is too small to do much good.

After caponizing spray the birds with a solution of Dr. Salsbury's Cam-Pho-Sal each evening. This helps to prevent colds and promotes healing. As an intestinal conditioner use eight of Dr. Salsbury's Phen-O-Sal Tablets in each gallon of drinking water or milk for the first three days after the operation.



Dr. Salsbury's new natural curve caponizing set. Price $3.50.

HOW I KEPT MY CHICK LOSSES LOW IN 1934

By using good parent stock, applying a system of B.W.D. eradication year after year and keeping five important facts constantly in mind I have had another successful season of rearing baby chicks.

The First Fact—The chick must be guarded from the time the egg goes into the incubator until the pullet is placed into the laying house. Don't stop even then to use precautions. While B. W. D. is the only inherited trouble, vigor of parent stock and breeding is highly important in preventing chick losses. Worms, bowel trouble, lung trouble, coccidiosis, chicken pox, fowl air poisoning, colds and roup are liable to attack at any moment. That is why I take constant precautions against every one of these common chickhood troubles.

The Second Fact—Half of what the chick takes into its system is air. So the brooder house must be well ventilated with proper intakes and air outlets, comfortable and clean.

The Third Fact—I am no feed maker, so I buy the best prepared feeds and let the feed expert solve my feeding problem.

The Fourth Fact—Weaklings, runts and defectives must be culled out constantly. To keep chick losses low and maintain good health never stop culling from the time you take chicks out of the incubator.

The Fifth Fact—Management in an artist means the difference between a masterpiece or a daub. In chick raising it means the difference between perfect health or a runt. I try to keep abreast of the latest knowledge and practices of poultry health.—Amy Maxwell, Belton, Missouri.

A NEW USE FOR PHEN-O-SAL

This morning a boy about 12 years old walked into our hatchery and asked for 50c worth of them Pills (Phen-O-Sal). I said, "What's the matter, buddy, have you got some sick chickens?" He said, "No—Ma wants some to wash her false teeth with and Pa wants some to wash his feet with." I got quite a kick out of this and Doc Salsbury can advertise a new use for Phen-O-Sal Tablets.—Boies Capper, Allamakee Hat., Postville, Iowa.

WONDERFUL RESULTS FROM RAKOS

Toms River, N. J., June 19, 1934.—You will be interested to know that we are continuing to have wonderful results treating coccidiosis with Rakos, our sales averaging four gallons a day. We have one man who raises broilers exclusively and buys six gallons at a time. So far this month he has purchased eighteen gallons.—Geo. E. Koch.

DR. SALSBURY'S MEDICINES FOR POULTRY

Preparations	Size Packages	Price	Uses
AVI-TONE 100% Medicine	2 lb. carton 5 lb. carton 15 lb. drum 25 lb. drum 50 lb. drum	$ .75 1.75 4.75 7.50 14.00	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	Adult Size / Chick Size 50 $ .75 / $ .50 100 1.35 / .90 200 2.50 / 1.75 500 5.00 / 3.50 1000 9.00 / 6.00		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.
KAMALA CAPS	Prices and sizes same as Kamala Nicotine Combination Worm Caps listed above.		For individual treatment against tapeworms only. Used for chickens, turkeys, ducks and geese.
NICOTINE CAPS	Adult Size / Chick Size 50 $ .50 / $ .35 100 .90 / .60 200 1.75 / 1.10 500 3.50 / 2.50 1000 6.00 / 4.50		For individual treatment of chickens, turkeys, ducks, geese and pigeons against round worms.
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.
RAKOS	1 pint bottle Gallon bottle	$1.25 6.00	Triple acid, antiseptic and astringent, treatment for coccidiosis in young and old fowls.
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.
PAINT-O-SAL	½ pint 1 pint Quart can	.90 1.50 2.50	Stained dye for painting windows to prevent cannibalism and pickout.
MITE DEATH 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. For treating litter against coccidiosis dilute with distillate.
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, sheep and poultry. 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 4.00	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 2.40 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 2.40 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 Ulra-Rapid Antigen Test.
PULLORIN	Write for special literature.		Wattle method for B.W.D. testing.
TUBERCULIN	40 tests 200 tests	.75 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. SALSBURY'S LABORATORIES

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RETURN POSTAGE GUARANTEED

for

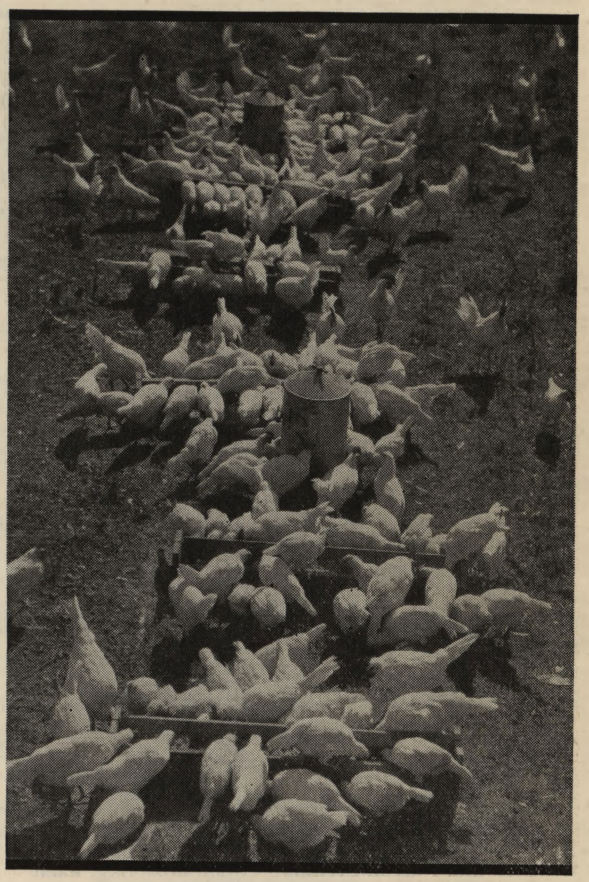
GET *the* WORMS EARLY

. . . *If* YOU *Want a* MONEY-MAKING FLOCK *This* FALL *and* WINTER

Those chicks of yours no doubt make you feel pretty good about prospects for some real profits this fall and winter. Costly setbacks can set in quickly, if you don't make sure that your flock is free of worms. A bad infestation means lost birds, both from the worms and from diseases they can't throw off because of their weakened condition.

It won't cost you money but will MAKE YOU MONEY to worm your flock now. We recommend Dr. Salsbury's line of Worm Caps. These are Worm Caps that many poultry raisers around here depend upon and we add our personal recommendation that they are pure, dependable preparations.

We have three kinds of Dr. Salsbury's Worm Caps, in both Adult and Chick sizes. Prices are lowest in years, yet the quality is the highest. Stop in and let us help you work out a worm control program with these proven products.



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POULTRY HEALTH
SERVICE STATION

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