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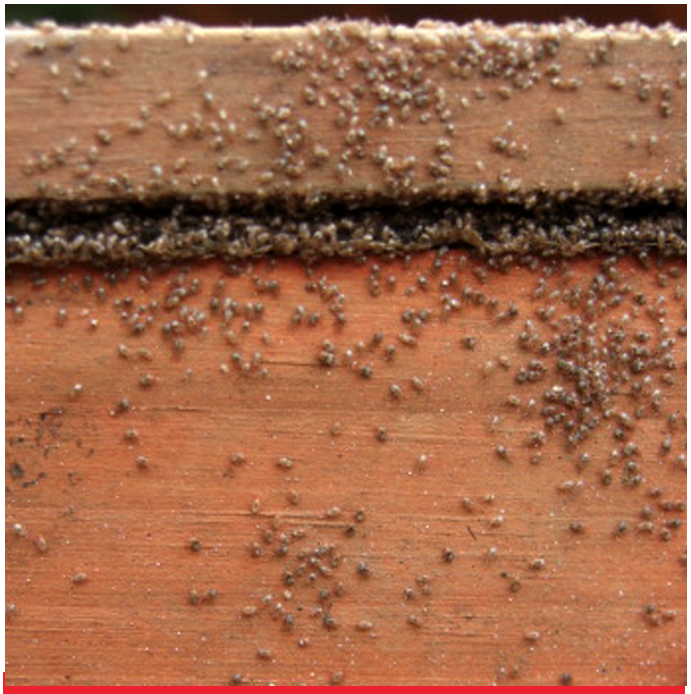
Poultrynz

Ian Selby Ph: 06 754 6262 www.poultrynz.com Email: poultrynz@xtra.co.nz



Poultrynz Editorial

In this issue there are two important articles.
We have included the semi-annual article on Red Mite. So far this year we have been informed that there was an early start to the Red Mite season. This makes it very important to get on top of this problem earlier than usual. If you want the egg production to be as high as it can be then now is the time to act.
The updated article on Red Mite is also included on the Poultrynz website: www.poultrynz.com and, as you will see there, are many more interesting articles there too.
The other article is on the "Avian Bird Flu." We should all be aware of this coming problem and ways to counter it when or if it arrives in New Zealand.
Until next issue.
Regards, Ian Selby.

If you have friends or colleagues who might appreciate the Poultrynz newsletter please feel free to pass it on. Your friends can also be added to the distribution list. Send their email and the word "subscribe" to poultrynz@xtra.co.nz

STICKY CHICKEN DRUMSTICKS

INGREDIENTS

Serves 4

Diabetes friendly

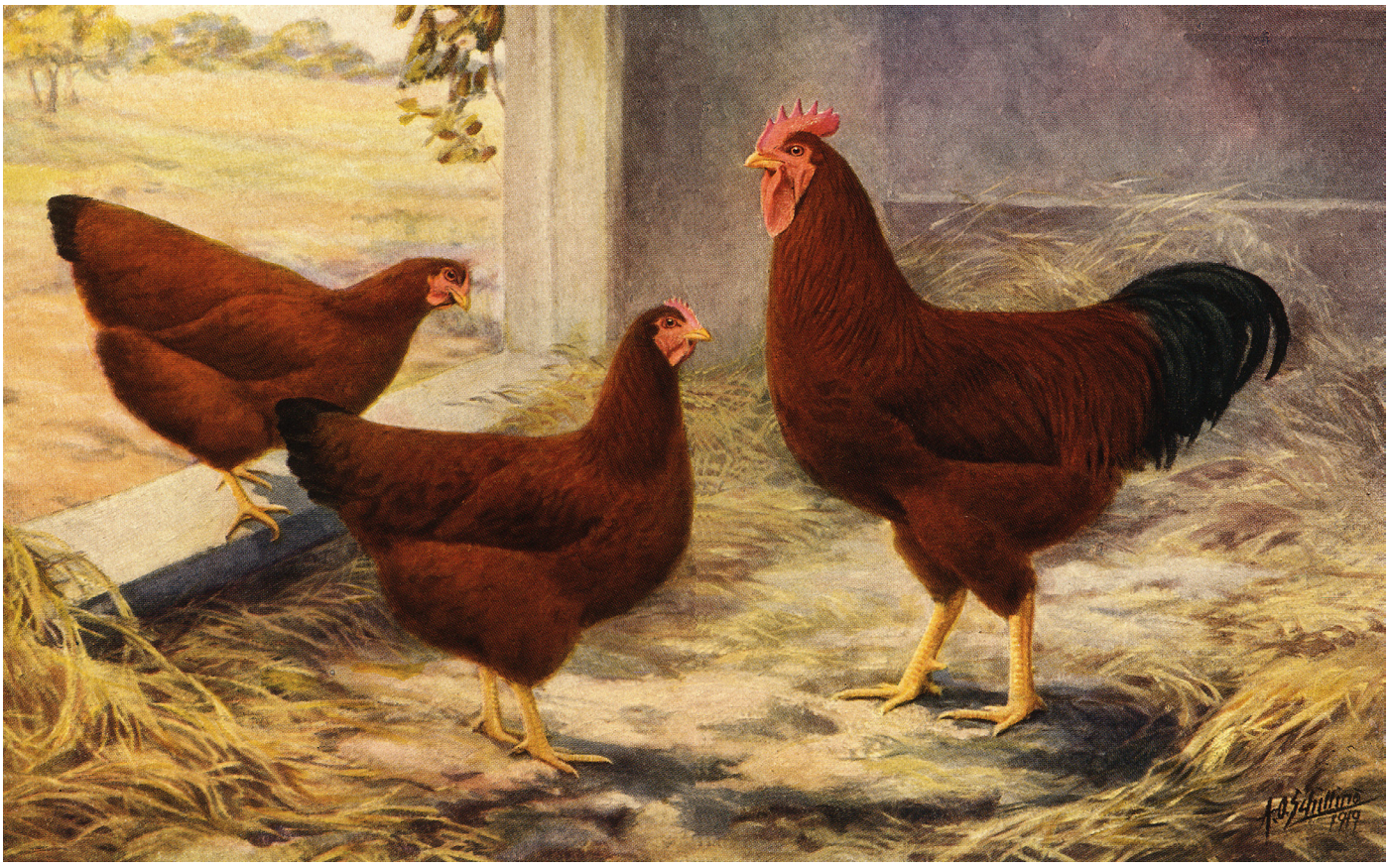
- 8 medium chicken drumsticks
- 2 teaspoons sesame oil
- 2 tablespoons soy sauce
- 1 tablespoon honey
- 1 teaspoon each: Chinese five spice, sea salt

METHOD

- Preheat the oven to 200C.
- Pierce each chicken drumstick a couple of times with a skewer or sharp knife.
- Place in a bowl with the sesame oil, soy sauce and honey and toss to combine.
- Place the drumsticks and marinade in a roasting pan and cook for 35-40 minutes, turning halfway through cooking. The chicken should be shiny and golden and thoroughly cooked through.
- Remove the chicken from the oven and sprinkle with combined five spice and sea salt.

Serve the drumsticks with a crisp green salad and steamed rice.

RHODE ISLAND REDS FOR EXHIBITION AND EGG PRODUCTION



by Blyth Brothers, Australia 1931

Rhode Island Reds

For the past sixteen years we have been breeders and believers in Rhode Island Reds.

When we purchased our first lot of Rhode Island Reds, they were a nondescript mixture and we have watched the breed develop, until today we believe it is the most beautiful fowl in the standard. Rhode Island Reds have progressed to such a degree, that today we find them winning championships in competition with other and older breeds, which for years past have had a mortgage on these coveted honours. At our utility shows we also see the Rhode Island Reds carrying off the honours.

In America today Rhode Island Reds have established themselves in the production classes and rank first in the heavy breeds. Rhode Island Reds are also putting up creditable performances in our own laying competitions.

Of late years more attention has been paid to the laying qualities of Rhode Island Reds, the real fanciers breeding for colour and type and selecting for higher egg production.

The breeder who breeds only for exhibition and ignores production never gets very far as a breeder, and unless he is constantly buying from better breeders, never establishes a sustained reputation as an exhibitor. The breeder who breeds only for production and sneers at "exhibition stuff" also has to continually buy outside blood to keep up his flock, otherwise his average production will be low, because he has neglected the things that count for vitality and reproduction.

We have found that Rhode Island Reds respond very quickly to efforts for improvement in production.

We have also found that the nearer a Rhode Island Red hen approaches the standard of perfection the greater is the prospect for production, and we have found that our best show birds are our best production birds.

It is easier to build up production with Rhode Island Reds than any other breed because they are built for productivity.

They are bred for utility as well as beauty, and when the standard of perfection was established for the breed, an ideal frame for a perfect egg factory was

the aim.

The body shape determines the capacity for production. The weight of bird, the shape of the head, general structure and carriage also affect production. We think that a broad, close-fitting feather is essential in Rhode Island Reds for good production.

It would be well to remember that every point mentioned by the standard of perfection in description of the Rhode Island Red is not only an essential quality for exhibition, but an essential for reproduction of kind.

Of course there is a difference between productivity or capacity for production and actual production.

That is the difference of opportunity for which the poultry-keeper and not the hen is responsible.

Breeders of heavy breeds do not rely solely on egg production for profit, nor do they spend as much time and energy to secure heavy production, nor do they advertise the production phase so heavily as do the owners of light breeds, but the average Rhode Island Red hen will lay more eggs in a lifetime than the average light breed hen. We have found that she will continue in profitable production longer than any other breed we have ever raised.

Rhode Island Red hen

Some breeds are unprofitable as layers after the first year, and very few pay their board after the second year, but we have found Rhode Island Reds profitable for three and even four years.

Rhode Island Reds lay rich, large, heavy eggs, and can be bred to lay eggs of uniform size, shape and shade. Rhode Island Reds are a triple purpose breed, for they possess maximum qualities as producers of both eggs and meat, carrying a quantity of firm, white meat which gives them a wonderful advantage from a commercial standpoint. They are, in addition, the ideal show bird, and can be adapted to all phases of poultry breeding.

Rhode Island Reds stand confinement well. This is an advantage to the man whose accommodation is limited. They are very hardy, and we find them particularly adaptable to changeable weather.

They are the ideal combination of beauty and utility, and we feel sure that there is no other breed possessing more good qualities than the Rhode Island Red.to the breed, coloured ear lobes, leg colour etc.

MANAGEMENT PROGRAMME FOR RED MITE

by Ian Selby

Advice on Red Mites comes from many quarters, some bad and some good, but at the end of the day looking after your Poultry comes down to a Management Programme.
While this might be scary to some, it really is a matter of common sense. Poultry keepers, whether it be those who are dedicated breeders or just a person who keeps 2 or 3 hens for eggs, need to be aware that the quick fix solution to problems will always be that: A quick fix this week and another quick fix next week and another quick fix next week and so on.

This is what you need to know about Red Mites

1. Red Mites can travel 300 metres in a night.
2. Red Mites cannot fly.
3. Red Mites can live for up to 2 years without feeding.
4. Red Mites do not live on the bird, they live in the cracks and under the perches in your Fowl house.
5. Red Mites affect all types of Poultry, Pigeons and Cagebirds.

In the summer months the worst problem is Red Mites.
Red Mites have been around since the year dot. There have been all sorts of claims to prevent this parasite but they are back year after year, if you are not on top of it then you get a bigger problem.
You also have to ask the question **'Why do I need to get rid of Red Mites?'**
Red Mites feed on the blood of your Poultry. They come out and prey at night. If you get a build up of them they can suck all the blood from your birds and:

1. Put your birds off the lay.
2. Affect the bird's immune system.
3. Can kill your birds.

Not only that, it makes it very uncomfortable for you to go into your fowl house when the mites drop into your hair, you can feel them crawling on your head or on your arms then you know you have got them bad.

Many broody hens have been put off the brood by a bad infestation of Red Mites, some have been found dead on the nest and the reason was only discovered by the unsuspecting Poultry keeper when they lift the bird off the nest to reveal thousands of Red Mite in the box.
I have been told that some Poultry Keepers don't get Red Mite but i n reality, they do. This is a management problem. It is all very well spraying your pens or areas with the best products you can buy but it's the repeat application that is the secret to controlling Red Mites.
We know Red Mite become immune to chemical sprays in New Zealand. I have had reports that well-known sprays are now non-effective in some large Poultry Farms and in some cases if you don't follow the 'egg withholding period' you could be poisoning your own family.

The big problem is eliminating the Mite Eggs, most chemical products don't do this. Chemical products have a very short life-span and break down within a few days. **Poultrynz DE** also dries out the mite eggs and any that do hatch are despatched upon contact. How many times

have you sprayed with a chemical spray or powder and then had to spray or powder them again and again?

More and more New Zealanders are turning to organic solutions in farming and Poultry keepers are no exception. But organic is not a quick fix. The products we sell do not work instantaneously.

Red Mite are eliminated, Red Mite eggs do not hatch but it is not a quick fix. That would be too easy. And believe me there is no easy way to get rid of Red Mites.

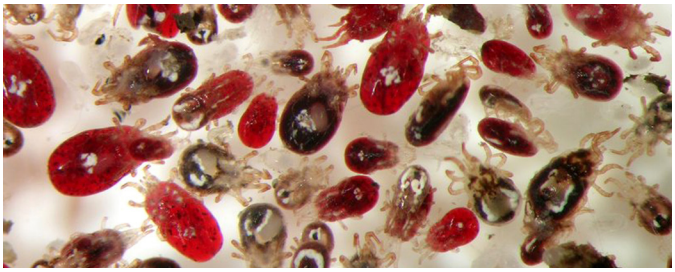
However, it is simply a Management problem and regular use of a product is the best way.

You should have a programme that is regular and you have to be vigilant. Carry out your programme as though it is part of what you do to keep your Poultry. At least once every 4 months you should spray out your pens whether they need it or not. **Poultry Shield** removes built up dirt, faecal and waxy deposits and cleanliness is the secret to your success.

The best policy is to adopt a good management programme.

Step One.

Take the birds out of the pens or coops before you start the process.
After you have cleaned the coop or house out and removed the sawdust and bedding etc, absolutely saturate the walls, ceiling, floors, perches and nest box with 2 parts ***Poultry Shield*** diluted in 8 parts water. And I mean saturate, if you just spray around or mist because you think ***Poultry Shield*** is a conventional chemical then it will not work. ***Poultry Shield*** has a physical effect on the mites and must come in contact with the mites to work.
Let the coop dry out a bit then sprinkle a liberal amount of ***Poultrynz D.E.*** over the perches, nest box and floors. When these mites walk over the ***Poultrynz D.E.*** it draws moisture from them and they dehydrate.
You can then put the bedding back on the floor and in the nest boxes. The Fowls can also go back in the house or coop. There is no egg withholding period with ***Poultry Shield***



Step Two

After the house is dry the second step is probably the whole secret. This process can be done a day or so after step one.
Remove the Fowls again. Mix ***Poultrynz D.E.*** with water to make a slurry. The amount of ***Poultrynz D.E.*** you use depends on how big your house or coop is. Mix the slurry to a consistency that is easily used with a paint brush. You then apply the slurry to the cracks, on the perches and nestbox. Making sure that you apply a good amount under the perches. You can apply it to the walls and ceiling if you wish for a better affect. You can then return the birds to the coop.
When this dries it will form a barrier that repeals the Red Mites.
When you paint it on you are able to dab all the nail holes and cracks where they live and seal them off. Red Mites can't fly so to feed they need to get at the bird and a lot will go under the perches. If they walk over the ***Poultrynz D.E.*** slurry you have got them, well within 72 hours.

BIRD FLU: CURRENT UPDATE FOR NZ BREEDERS & EXHIBITORS

Bird Flu - What is it?

'Avian Influenza' is a group of viruses that causes flu-like symptoms in birds. 'High Pathogenicity Avian Influenza' (HPAI) is a subgroup of avian influenza which causes high mortality in wild and domestic birds. New Zealand has never had a case of HPAI. Australia has had multiple incursions including one in progress currently.

What's the risk of HPAI getting into NZ?

Strains of HPAI have been circulating globally for many years: many countries have seasonal outbreaks every year. New Zealand has never had a case of HPAI due to exceptional border security to protect our primary industries, and wild bird species which do not migrate to parts of the world where exposure to HPAI is likely to occur. Since 2020, a new HPAI strain ('H5N1') began to spread in domesticated and wild birds across the northern hemisphere. This has recently been found in Antarctica. NZ authorities are monitoring this closely to establish whether this could increase risk to NZ through wild bird movements.

What can you do to protect your birds?

Good biosecurity has always been recommended to protect your flock from exposure to wild birds to keep out diseases and parasites of birds already present in NZ. This includes Biosecurity Basics like:

- Preventing wild birds from accessing drinkers and feeders
- Preventing contact between your birds and wild birds with netting and fencing
- Good hygiene and rodent control. Routine, consistent control of internal and external parasites
- Quarantine and preventive treatment of incoming birds and those returning from shows
- Different footwear and clothes for shows and visits to/from other breeders versus at home
- Biosecurity measures routinely used for commercial poultry are a useful guide for other key preventive actions.

What else should you consider?

- Have you got access to expert advice in the event of unexpected bird deaths?
- How do you dispose of dead birds? Is your method adequate to prevent spread of disease?
- • Could you lock your entire flock down for 1–3 months without compromising welfare, health, and hygiene?
- Have you got a plan for how you could put all birds under short term cover in a way that fully prevents exposure to wild birds and other vermin… at short notice?
- How would your club cancel a show at short no tice? Could you run a Virtual show instead?

Want more info?

Q & A Webinar on Avian Influenza

https://www.teniwha.com/news/q-and-a-on-avian-influenza

MPI has created these up-to-date resources for poultry here including the following topics:

https://www.mpi.govt.nz/biosecurity/pest-and-disease-threats-to-new-zealand/animal-disease-threats-to-new-zealand/high-pathogenicity-avian-influenza/

- Symptoms of bird flu and how it spreads
- Minimising the risk to commercial poultry
- Domestic poultry and birds
- Dairy and other livestock
- Protecting Wildlife and our native species
- Food safety and human health

From the UN Food & Agriculture Organisation: Bird species known to be affected by HPAI:

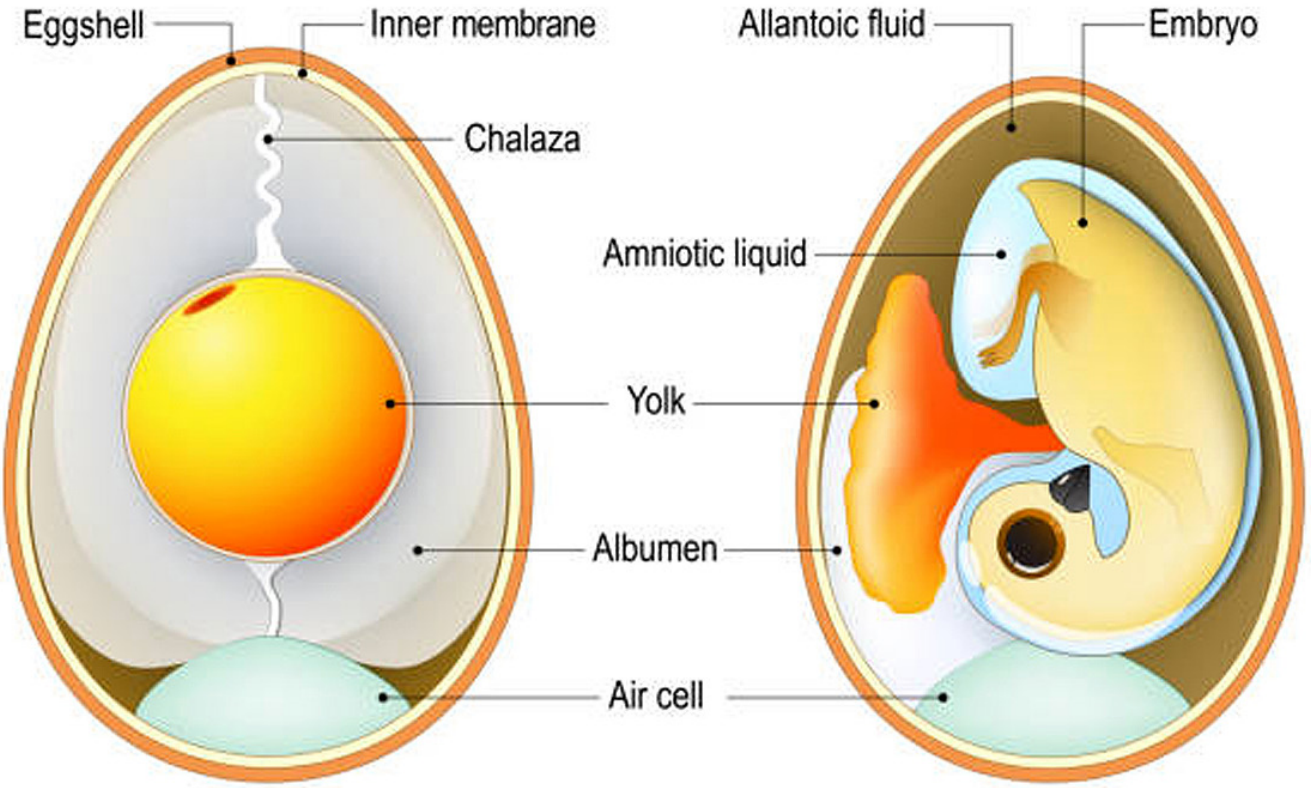
https://www.fao.org/animal-health/situation-updates/global-aiv-with-zoonotic-potential/bird-species-affected-by-h5nx-hpai/en

Links for pigeon fanciers here:

https://www.auspigeonco.com.au/avian-influenza-outbreak.html

https://purebredpigeon.com/avianflu.htm

HOW A CHICKEN GROWS



Cross section of and Egg and Embryo

by M.O.North, USA.

The chicken is a warm-blooded vertebrate with a body temperature that is highly variable. Day-old chicks have a temperature of 102 degrees F. This gradually increases after about four days, reaching a maximum of 105 degrees to 107 degrees F by 10 days of age.

The growth of the chicken is rapid. It will multiply its day-old weight by 40 to 120 times in less than a year.

EMBRYONIC GROWTH

Within five hours after the formation of the zygote through the union of the sperm and egg cells, the first embryonic cellular division occurs, and growth commences. In about 20 minutes, another division takes place, then another, etc.

After the developing egg has been in the oviduct for four hours some 256 embryonic cells are present, and several thousand will have been produced by the time the egg is laid.

During artificial incubation of the egg, early embryonic growth is centred around the differentiation of the body cells to form the various organs and parts. All are present by four days. The body begins rapid development by the eighth day, and is nearly complete by the end of the fifteenth day.

EGG SIZE AND CHICK WEIGHT

As all chicks are not the same weight at hatching time, it is obvious that embryonic growth rates must be different. One of the big contributors to this variation is egg size. Within a strain of variety, large eggs produce large chicks; small eggs produce small chicks.

But this simplification does not account for all the variation. For example, a day-old chick from a 24-ounce egg produced by a meat-type bird is always larger than one from an egg of the same size laid by a Leghorn. A critical examination shows that this difference in growth rate is obvious in embryos after 10 days of incubation.

Embryos from large eggs or from large strains of birds grow more rapidly than those from small eggs or small strains because there are more body cells, not because the cells grow larger. The speed of cellular division creates the increase in cell number and, no doubt, is genetically controlled through hormones.

GROWTH OF FEATHERS

The chicken is covered with feathers, skin and scales, the latter being a derivative of reptiles from which birds evolved. The fact that birds are almost completely covered with feathers sets them apart from other vertebrates.

Feathers are, in reality, only large scales that have many small interlocking membranes. Feather growth is under hormonal control, but feathers have a maximum size and length determined by the age of the bird which

they cover. Thus, a set of small short feathers covers a young bird, but must be moulted and replenished by a set of longer and larger feathers as the bird grows.

When the chick hatches, it has almost no feathers. Except for the wings and tail, it is covered with down. Soon the down grows longer, and most particles develop a shaft which erupts in a few days and the web of the feather makes its appearance.

By the time the bird is 4 or 5 weeks old, it has become fully feathered. The first feathers are then soon moulted, and a second set of feathers is grown by the time the bird is 8 weeks of age. Thus, broilers are marketed during the growth of the second set of feathers. A third set of feathers is completed just before the bird reaches sexual maturity and is the first mature plumage.

GENES AFFECT FEATHER GROWTH

There is a difference in the rate of growth of the first two sets of feathers of a chick that is gene- and sex-related. Slow feathering is due to a sex-linked, dominant gene "K".

Its allele, rapid feathering, is the response to the recessive gene "k".

The expression is obvious in day-old chicks, but only in the relationship of the length of the primary wing feathers to the length of the primary wing coverts. This has made it possible to sex chicks at day old when certain parent matings are made, a practice often followed in the broiler raising industry. The cockerel broiler chicks are slow feathering while the pullet broiler chicks are rapid feathering.

Although most strains of such slow-feathering broiler males produce fully feathered birds by the time the first set of body feathers is completely grown, often times because of stress and hot weather, some males may be poorly feathered with excessive pin feathers at market time.

SKELETAL GROWTH IS RAPID

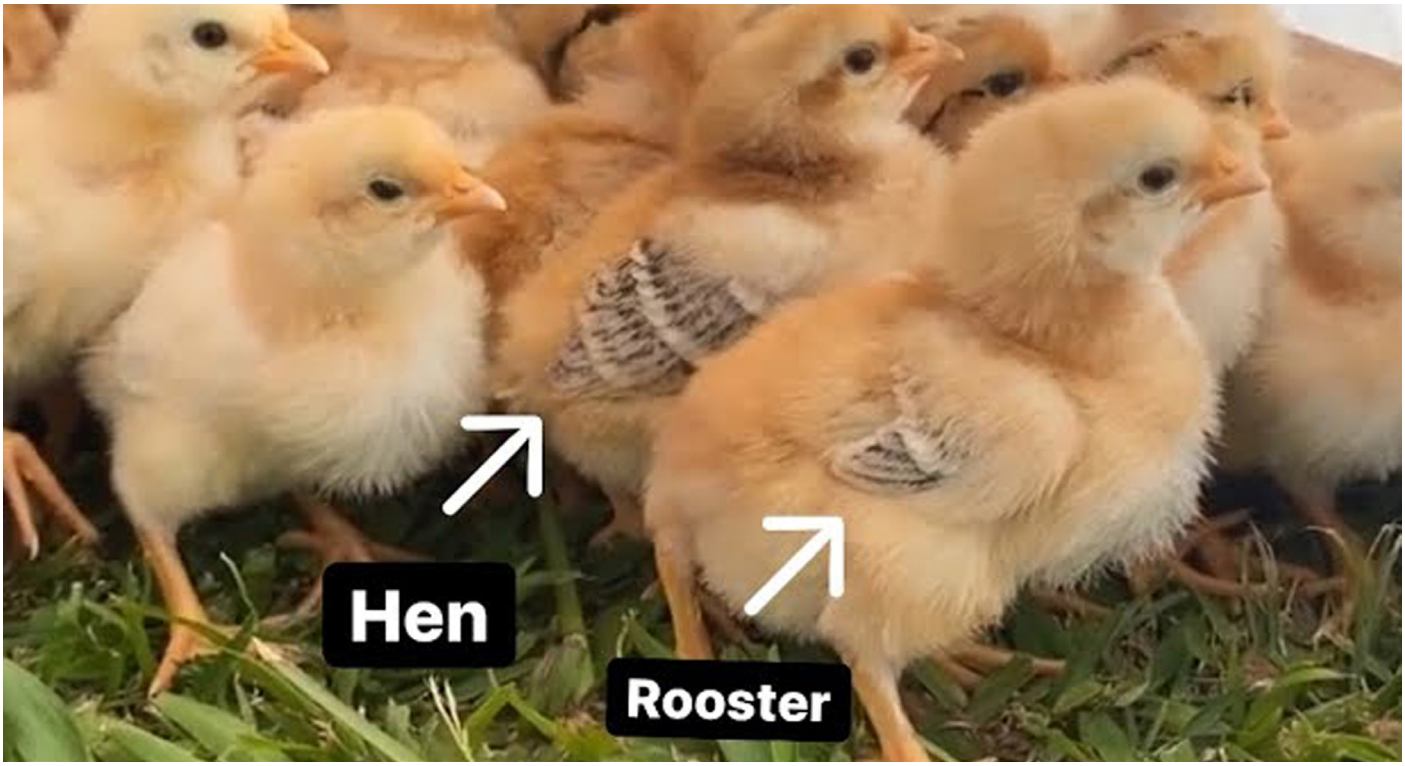
The growth of the individual bones of the body is highly variable and, except for certain long bones of the leg, plus the keel, is difficult to measure.

The bones of the foot develop the fastest, followed by the long bones. The shank, for instance, reaches its maximum length in the female chicken at about 16 weeks of age and about 19 weeks in the male. But maximum body weight is not reached until birds are 40 to 52 weeks of age.

The keel develops more slowly than other bones of the body, and is the last to reach full size. Its length is attributed to growth in the cartilagineous portion at the posterior end. Once the maximum length is reached, this area becomes ossified and growth is no longer possible.

The long bones of the body have a cartilagineous

Baby Chicken



Feather growth of a Chicken

growing area at each end and increases in their length are attributed to elongations in these areas through deposition of chemicals from the blood plasma. Once the bone material is ossified, growth in the area ceases.

The diameter of the long bones continues to increase during growth, and all parts of the bone are ever proliferating cells, because we know that a broken bone will mend.

BODY WEIGHT AND BONE SIZE

In the growing bird, body weight has no close correlation with the length or size of any bone. For example, birds with the longest keels or shanks are not always the heaviest in weight.

Close scrutiny shows that the bones found in the skeleton of mammals are also found in the skeleton of chickens. However, some of the bones of the latter are fused or elongated. The skeleton of the neck is long and freely movable, but the remaining portion of the vertebral column is rigid, containing many fused bones.

Several of the thoracic vertebrae are united to form a firm bone for the attachment of the wing and its muscles. There is a heavy keel. The hip bone is solidly fixed to the ileum and the pelvic bones do not join vertically. The wings correspond to the arms of human beings.

The legs contain the same bones as found in the legs of man. The bones of the metatarsus, common to the human foot, have been fused and elongated to form the shank. Proper nutrition plays an important part in bone growth. When calcium and/or phosphorus are deficient, bone growth is reduced, and there may be many malformed bones. Proper bone mineralization is reduced. A deficiency of vitamin D produces similar results.

FEED RESTRICTION AND BONE GROWTH

Curtailing feed intake during growing, as when birds are fed restricted diets to reduce body weight, generally, has little effect on bone growth but does reduce muscle

development and the deposition of fat, thereby reducing live weight.

SKIN COVERS THE BIRD

In general, skin, composed of two layers, almost covers the body. Except for the uropygial gland (preen gland), located on the upper side of the tail, the skin is void of glands. The absence of sweat glands make it impossible for the bird to sweat to lose moisture from the body.

The skin takes a different texture in the area of the comb, wattles, eartobes, beak, scales, spurs and claws. Except for some of these specialized areas, the colour of the skin is either white or yellow. The density of the yellow colour is correlated with the amount of xanthophyll in the ration.

GROWTH OF MUSCLE

Muscle may be classified in three groups:

1. Visceral, for involuntary motivation of the muscles of the gizzard, intestines, cloaca, internal organs, etc.

2. Skeletal, for the voluntary movement of certain bones of the body.

3. Cardiac, the heavy muscles of the heart.

Skeletal muscle is striated; the muscle cells have dark stripes transversing their surface, and are arranged in bundles. This allows for great contraction and expansion. Skeletal muscles may be composed of white or red fibres giving rise to light and dark meat.

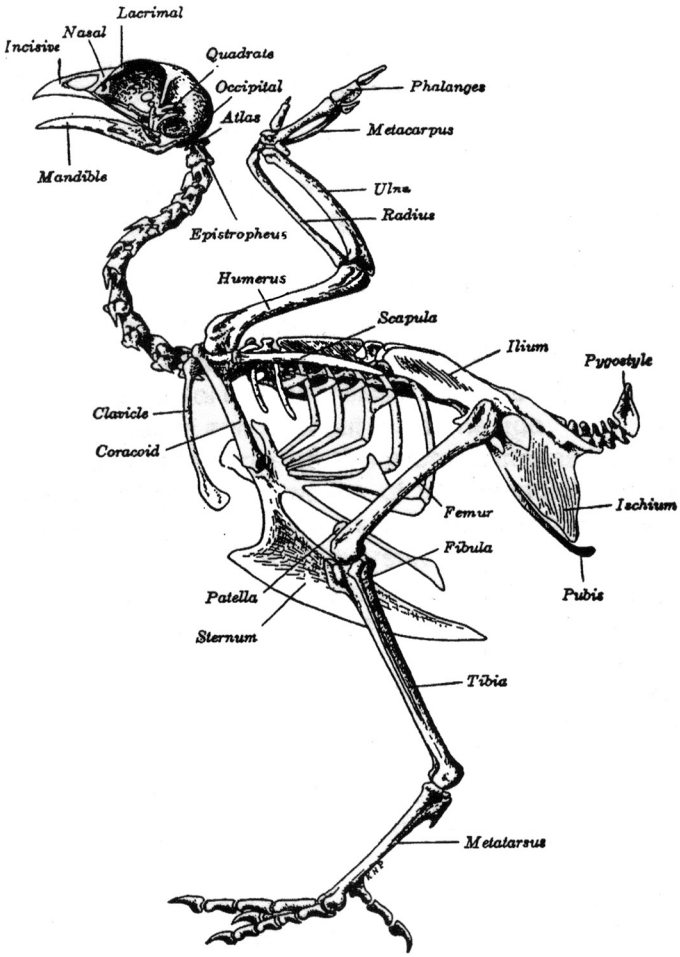
The red fibres are the result of large amounts of the pigment, myoglobin, an oxygen reservoir similar to haemiglobin of the blood. Red fibres are found in muscle under continuous strain, as in leg muscle where it is necessary for contraction almost continuously in order to keep the bird erect.

White muscle cells are found where motion or "twitching" is the primary function as in the muscles of the breast to motivate the wings, but flight is not necessary to develop the breast muscle. Movement of the breast muscles from breathing alone will accomplish this.

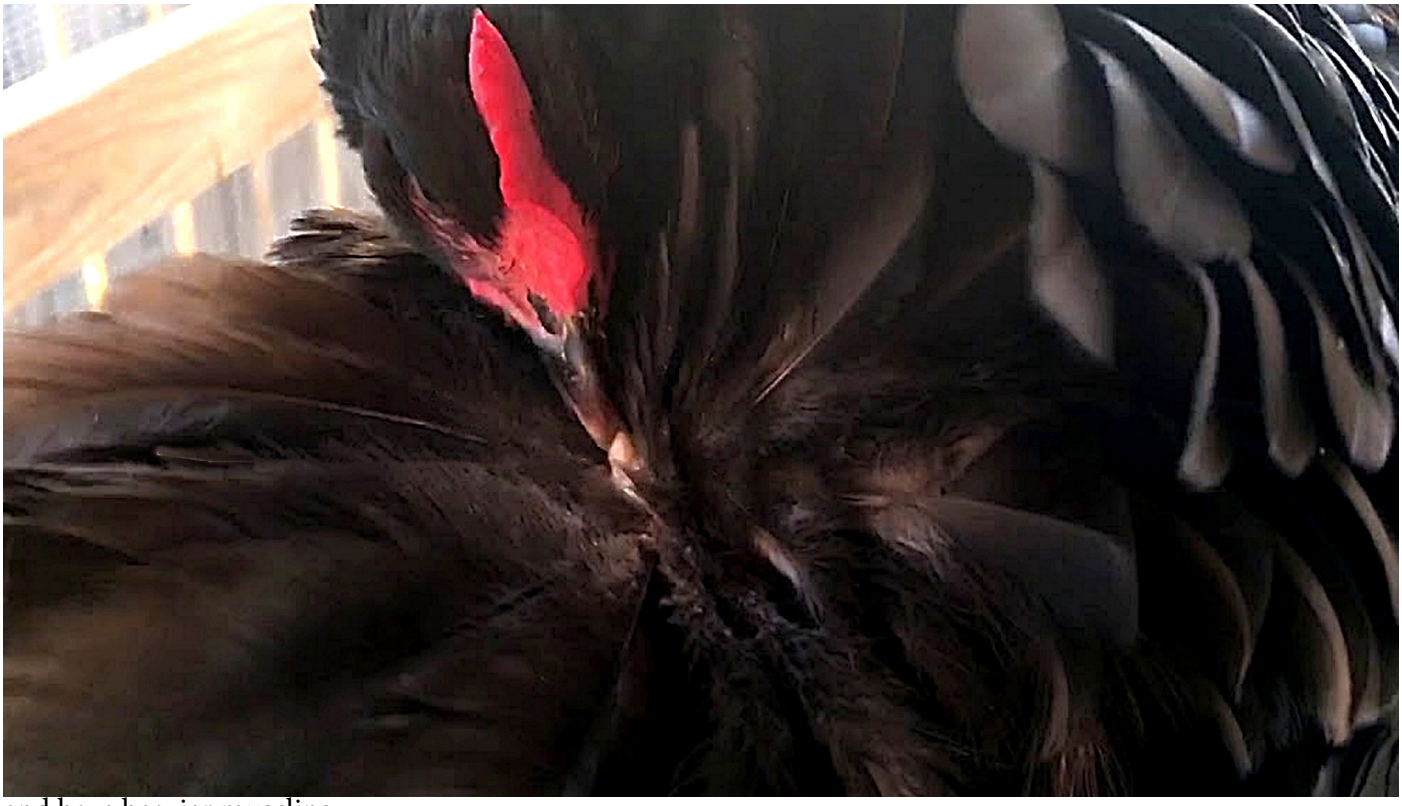
Skeletal muscle is composed of cells that fuse together during the embryological process to form long columns of cells after which the cell walls disappear, leaving one muscle fibre containing several hundred nuclei.

After hatching, muscle growth is mainly the result of a type of cell division and splitting of the nuclei plus exercise of the muscle fibres which increases their size. We have all seen the result of specialized exercises for the super development of certain muscles of the human body to develop the so-called "Atlas" men.

But muscle fibre size is the result of other things. Genes play a part. It is possible to develop strains with heavy breast muscle for instance, as in the turkey and meat-type broiler strains. Males exercise more than females



Skeleton of a Chicken



Hen attending the Pruning Gland

and have heavier muscling.

Muscle growth is not uniform. It is more advanced in the young growing bird than later, and as protein is required for muscle growth, starting rations should contain a higher percentage than those for older birds. When muscle growth slows later in life, the protein in the diet may be reduced.

FAT DEPOSITION IMPORTANT

Imbedded throughout the body of the chicken are innumerable fat cells. Some lie between the muscle fibres, some within the viscera, some in the subcutaneous areas, and a large pad or "leaf may be found in the abdominal cavity. The amount of the adipose deposits lies with both the number of fat cells and their size.

The deposition of fat in the fat cells is the end result of many things. In the first place, unlike many nutrients the chicken consumes, surpluses of energy are transformed to fat and stored rather than being excreted from the body. The greater the surplus, the larger the fat deposits. If the diet should become inadequate in energy, the bird draws on the fat in these fat cells to make up the deficiency, and the cells become smaller.

The number of fat cells produced early in life is greatly responsible for the bird's ability to store more fat. In later life, fat cells do not multiply, and additional energy is stored as fat through an increase in cell size only. Unless an adequate number of fat cells are produced early in life, birds do not get as fat when they are older.

Evidently, genetics plays a part in the number of fat cells created for it is known that individual birds, breeds, strains and lines of birds vary in their number of fat cells.

VARIATION IN GROWTH

Growth rate is not uniform. It is quite low during the first two weeks, then accelerates at a more uniform

Meat Chicken

rate for many weeks, after which weekly increments of increase begin to decrease until maturity is reached at about 10 to 12 months of age.

The length of the growing period is not correlated with mature weight. It takes about as long for a Leghorn to reach weight maturity as it does a heavy meat-type chicken.

Growth rate can be modified. If feed is restricted, or the bird suffers from some stress early in life, and growth is retarded, compensation will be made later when the restrictive factor no longer exists. The bird will mature at its normal weight and at about the same age.

Genetics has a role too. When broiler strains are bred for heavy weights at 7 weeks of age, mature live weight increases too. Thus, broilers get larger each year, and the breeder parents also. Conversely, some breeds grow at a slower rate to 10 to 12 weeks of age, but at a more rapid rate thereafter. Such breeds do not well lend themselves to broiler production.

Nutrition has a great effect on growth, and better rations play an important part in attaining the heavy broiler weights that we see today.

But deposition of fat within the bird is responsible for a great part of this increase. About 3% of the live weight of broilers is now found in the abdominal fat pad alone. A part of this is removed at processing, a costly sacrifice to get greater weights. Visceral fat represents another major loss.

Evidently, an increase in the number of fat cells early in life causes an increase in fat deposits in these cells later. Thus, if it were possible to reduce the early proliferation of fat cells, the deposits could be reduced in the fat pad

REDUCING THE SURPLUS FAT

Scientists have looked at nutritional methods of reducing the surplus fat in broilers, but little of economic value has been discovered. A heavy reduction of the caloric intake early in life (0-3 weeks) will reduce the size of the fat pad about two-thirds. But the procedure also reduces body weight, so it is not practical.

Reducing the caloric content of the diet over the entire feeding period has no effect on the size of the fat pad. Low-energy diets only induce greater feed consumption to offset the nutritional difference.

Protein of poor quality or reducing the calorie-protein (CIP) ratio will reduce the fat pad in broilers, but, again, growth is affected.

Breeding offers a practical method of reducing the size of the fat pad and of the total fat content of the chicken to produce a leaner bird, but no serious endeavour has been made to take this route, and the programme would take many years.

There are many other things that affect growth rate: hormones, temperature, light, exercise, crowding, disease, etc., and more may be known about these contributing factors than about growth itself. If is a very involved subject.