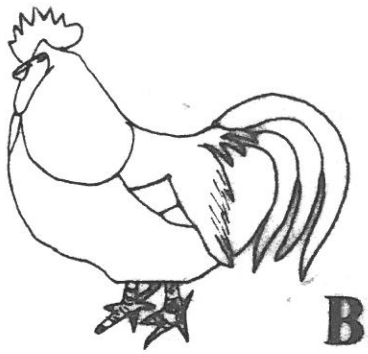

BELLSOUTH BACKYARD POULTRY CLUB NEWSLETTER

140 COLBY DVE.
BELGRAVE SOUTH 3160

AUTUMN 90

Dear Friends,

The first issue of a new magazine, Australiasian Poultry, has just hit my desk. I am pleased to see a magazine such as this be set up for such wide scale distribution. It was originally my aim that this newsletter fill this place in the market. However lack of time and expertise has meant that this aim has never come true. I am pleased to say that this magazine has set high aims, with the goal, like my own of a lot of original material.

The mag will be distributed via Gordon and Gotch so newsagents Australia wide will be able to get the mag in for you. Subscriptions will also be available direct from the publisher, Poultry Information Publishers Box 1187 Hoppers Crossing 3030.

The editorial team consists of Meg Miller, of Grass Roots fame, Bill Stanhope formerly Principal Poultry Officer Dept of Agriculture Vic, and Bruce Bartlett also formerly of the Dept of Ag.

The first issue covers a wide range of topics, including home layers, turkeys, squab, quail, and feeding.

I had written another editorial on the recent senate select committee on animal welfare, but I was too long winded and ran out of space, so I have reserved it for another issue.

Jim. Jim

Following my article on Ostriches in the last issue, I received a letter from the ostrich association with regard to my figures, and the general thrust of the article. I have included both their letter and an article from the current Dept of agriculture newsletter in this issue.

Just to recap in case others misunderstood my position.

I believe also that the ostrich industry has a valid and usefull place in the Australian agricultural industry. I would not have invested as much time and effort into the industry if I did not think this was the case. I am also in the position that development of the industry is in my interest as some of my income is derived from the sale of equipment for the industry. So I am speaking against my own short term financial interest.

My article was to point out the expected production of an ostrich pair, and attempt to cost out the value of that production.

My conclusion is that the present prices for stock will mean that the only way to make any money out of the ostrich industry is to SPECULATE. That is buy breeders hoping to sell the offspring for similar prices as are now being paid. For this to occur, more people must continue to buy into the business of growing ostrich, also with the view of being able to sell stock for breeding, etc. I have seen many agricultural and other industries follow this tried and true formula, and when the source of new investors dries up then the prices fall dramatically. Sometimes they fall gradually, but when the pure speculators bail out the prices fall fast

So my conclusion stands, speculate if you wish, but be aware of the true productive worth of the birds, and be aware that prices above the productive ability of the stock are there because of speculation, and all speculation carries risks. The greater the speculation the greater the risks.

Hedge your bets, calculate the risks, then if you decide to, jump in but with your eyes open.

AUSTRALIAN OSTRICH ASSOCIATION

AUSTRALIAN OSTRICH ASSOCIATION
The Secretary
82 Highett St
Richmond 3121
14 March 1990

Mr Jim Finger
Editor
Bellsouth Backyard Poultry Newsletter
140 Colby Dve
Belgrave South 3160

Dear Jim,

Thank you for forwarding me a copy of youtr newsletter. It made interesting reading especially the article on the Ostrich industry.

However the Australian Ostrich Committee was very concerned with your calculations.

At the present time adult pairs are being sold for around $80,000 to $100,000 while three to six month old chicks are being sold for around $6,000-$7000. Prices being paid for chicks are in proportion to adult bird prices. Therefore return on investment should be far greater than your calculations show.

Your price for adult pairs for $120,000 seems higher than what is the current market rate. While your chick prices are based on your expected commercial prices, not current market price. Naturally when commercial prices are paid for chicks then commercial prices will be paid for adult pairs.

The Australian Ostrich Association Committee would appreciate you printing these figures in the next issue of the newsletter.

We believe the Ostrich industry has a strong future in Australia and would appreciate your support.

Yours faithfully

Jacqueline Carr
A.O.A Secretary.

OSTRICH FARMING

It is estimated that there are now approximately 500 commercial ostriches in Australia with about 200 in Victoria.

The current prices are as follows:

Fertile eggs	$2,000 ea.
3 month old chicks	%5,000 - $10,000 ea.
Mature birds	$25,000 - $80,000 ea.

At a recent auction $52,000 was the top price paid for a breeding male. Average price was $19,000. Breeding females can lay up to 80 eggs a year with a 70% hatch maximum.

Estimates are that the Victorian ostrich industry will earn approximately $3m in 1989/90 and grow by 10% p.a.

The current world price for meat is $400 per head at slaughter. Feathers bring $75 per crop. A good skin (tanned and dyed) can fetch $600. Ostrich skin is said to make the strongest leather and the major market is American Cowboy boots. Ostrich skin shoes and attache cases can sell for up to $3,000. Eggs can be sold for $20, painted eggs $250 and hand carved eggs $2,000.

Industry difficulties

1. Lack of knowledge on feeding, incubation, hatching, brooding, rearing and growing of ostriches.

2. Lack of established markets for ostriches.

3. Lack of knowledge on potential markets.

4. Limited knowledge of diseases of ostriches.

5. Poor information on location of stock.

6. Difficulties with insurance.

7. Too many get-rich-quick merchants involved.

8. With such high value stock, there could be a temptation to smuggle in eggs with the subsequent risk of disease introduction.

9. No welfare or management code.

There is an organisation - The Australian Ostrich Association. It has over 100 members Australia-wide and holds meetings, lectures and field days for the development of members and for the promotion of the industry. They publish a Quarterly Journal. The 1990 Annual Meeting will be held in July.

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DEPT OF AGRICULTURE NEWSLETTER NO 51 MARCH 1990

EGG INDUSTRY ACT 1989
EGG INDUSTRY GENERAL REGULATIONS 1989
CONDITIONS FOR FREE RANGE HEN ENVIRONMENT

1. Hens must have access to an area in which to range during daylight hours.

2. The maximum stocking density is 300 birds per acre (750 per hectare).

3. The land where the hens are permitted to range must be capable of continued production of vegetation for food. If the land becomes barren an adequate alternative area must be provided and used on a rotational basis.

4. Hens must have permanent access to shade and protection, weatherproof shelter with adequate dry litter, food, fresh water, nesting boxes and perches.

5. Natural foods only are permitted. These may include grains, grain products, green feeds, meat by-products, natural sources of vitamins and minerals.

6. No synthetic yolk colourings are permitted, but natural xanthophylls, such as maize, lucerne or other naturally-derived pigments, may be used.

7. Routine use of antibiotics or other medications is not permitted except on veterinary direction.

8. Induced moulting and the use of "polypeepers" are not permitted.

9. Beak trimming is not permitted.

FEATHER PICKING

This perplexing problem crops up now and then and over the past month or so I have had a burst of enquiries from people looking for solutions.

In Missets Poultry a recent news article commented on research by Dr Blokhuis at the Spelderholt institute in Germany. He was studying what causes feather picking, and one of his conclusions was that if the chicks feel there is something wrong with the floor on which they are raised then they are more inclined to pick at feathers. Dr Blokhuis also stated that contrary to popular thought, picking is not a sign of agression.

I am one who subscribes to the agression theory as this helps to explain the strain difference. I often have reported that one group, strain or breed is causing a problem. Agression would appear to be a factor as all the birds have the same diet.

The following is a list of all the speculated causes of feather pecking and the resultant canabalism.

1/ Dietary problems Part 1 Deficiency in the diet. Some ingredient which is missing and so the fowls seek feather because the missing nutrient is in the feather. Salt, some protien or protiens, or fat is often blamed. Mutton fat, solidified in a container where the birds can peck at it is one of the traditional cures.
Careful examination of the diet is warranted, including the possibility of changing feed suppliers if processed food is used, or adding greens for diversity of diet.

2/ Dietary problems part 2 Excess protien has also been implicated in canabalism as there have been suggestions that the excess protien increases agression levels, and increases stress levels. Possible in home mix ration situations.

3/ Stress. Stress caused by over crowding, boredom, excess temperatures (especially during brooding) or poor litter management should be considered. These may provide the trigger factor to commence the bad habit which once started is hard to break.

4/ Incorrect brooding. Incorrect brooding is in my opinion one of the major causes of feather pecking problems. Excess brooder temperatures cause extra stress and reduce the rate of feathering of the chicks. Poor feather cover on the chicks seems to increase the rate of picking. Overcrowding also seems to trigger off the picking behavior. Excess light intensity in the brooder is a great problem, perhaps the simplest to cure. Excess light at this time speeds the development of the chick as the growth functions are controlled by what I (for simplicity sake) call light dose.

Light dose is the intensity of the light multiplied by the duration of the light (technically multplied by a constant) This concept of light dose is helpfull in considering the effect of the light. The length of the light is important, and where possible in hobby flocks the light should follow a 24 hour cycle of night day. The intensity of the light should be considered as a very bright light for a few hours has the same effect as 24 hours of light at a low level. Hight light doses will increase picking and canabalism because they cause the development timetable of the chick to get out of kilter with

the physical development.

The effects of bad brooding are often not felt until much later, and can become apparent weeks after the chicks leave the brooder.

5/ Breed and strain factors. The fact is that breeds and strains of birds differ. Some current strains of layers tend to be more prone to picking, a result of selection for production. It is still strange to see birds of apparently the same cross from the same hatchery,but in fact being different strains of the same cross, one lot being docile the other apparently agressive and with bad picking and canabalism. Changing hatcheries seems to be the only answer here.

Another factor which is worth considering. I have found it a bad practice to mix different breeds together in the one pen, particularly when the different breeds are commercial layers. I have found that normally quiet birds become agressive to another type of bird when they are mixed together, even when the age, and peck order factors are ruled out. So if you are buying Point of lay pullets, all one type and colour. Dont get a few browns, a few blacks and a few whites.

6/ Mixing birds from different pens or ages, particularly one the birds are in lay or in a stable pen relationship. Throwing one or two others into the group will cause an upset to the stable peck order which usually results in a high level of squabbling to re establish the peck order. Loss of feathers at this time as well as blood can cause the onset of canabalism in the pen.

7/ These factors also influence most avians including Quail, pheasant, partridge, though much of the agression and canabalism of say quail is strain dependent and can be selected out of the breeding stock.

8/ Parasite problems. Particularly mites and lice can help instigate picking. The mites and lice cause the bird to pull feathers to try to get rid of the irritation, and the resultant bare spots and or blood can trigger other bird pecking.

What to Do?

Usually once the habit of picking is established it is hard to cure, and will often develop to the point of actual canabalism. Because of the many causes, offering cures is difficult. However the following points are worth considering.

1/ Look carefully for signs of problems in the management? Have you changed feed types, are the birds overcrowded, is there a parasite problem, have they been wormed and deloused lately? Have you changed management practices since last year/ Think carefully as it may have been a small but significant change? Are the birds from a different supplier to last year? Has the supplier changed breeds?

Are the birds fighting over the picked feathers? A rush to gobble up the pulled feathers usually indicates a diet problem.

Initiate management proceedures such as worming, delousing, cleaning the shed, or litter. Reduce stocking density, reduce light levels.

2/ One the habit is established it can be hard to break. If there are a lot of bare tails around then Stockholm tar is often used, as is Gentian Violet Hoof spray for horses. This tends to discourage the picking because of the taste. Reduce the number of birds in the group, especially in brooder

situations and check to see if the light dose is too great. Switch to no light brooding and check brooder temperatures are not too high.

3/ Beak trimming is a last resort and can be of limited success if the pecking has degenerated to canabalism. Often the picking will resume as soon as the beak looses its tenderness, and though the sharp point is gone and so less canabalism will occur, the feather picking is likely to continue.

4/ Beak bits are small metal clips which prevent the chicks completely closing the beak and so the chick is unable to grab the feather. Suitable for growing chicks, bits need to be replaced about monthly as the chicks grow. The old ones are cut off and the new one placed on the beak.. They can cause the beak to become slightly deformed as the bit will sometime wear a grove in the side of the beak.

5/ Adult birds can have poly peepers fitted. These are sort of like spectacles which inhibit the forward vision of the bird. They do not effect the downward forward vision so the bird can eat freely. The independently targeted eyes of the fowl can still see over the shoulders and sideways so the escape mechanism is not effected. However the binocular forward vision necessary for fighting and feather picking is blocked so this part of the behavior is stopped. I think this method is good and I am dissapointed to see that it has the thumbs down from the animal welfare lobby. It is far better than the problem of picking and canabalism.

This method is ideal for pheasants and partridge though a little harder to fit on quail.

I must mention here an idea being promoted by of course an American company for the reduction of canabalism. Contact lenses!! I am not kidding. I have seen both the lenses and the video which promotes them. The idea is a permanently fitted red contact lense which reduces the light input to the fowl and so reduces the canabalism.

Conclusion.

Prevention is always better than the cure. So carefull attention to all aspects of management is important. If a problem does arise, make carefull notes of everthing which you are doing and try to isolate the cause.

At the first sign of a pecking problem, take action by way of attempting to isolate the problem, add dietary components, mutton fat, green feed, change the brand of bag feed, reduce light, reduce numbers in the pens etc.

If the problem persists, look at the options of bits for chicks and growers, and peepers for mature stock.

Last resort but one is to debeak, absolute last resort, dispose of the stock and start again. I know of one commercial breeding operation where a new strain of meat breeder was placed in the breeding shed for the first time and the last method was required. Believe me there is heartache involved when that method is required and there is 6500 birds in the shed.

USING A SMALL INCUBATOR.

I am often asked what is the best method for using my small incubator, what temperature should it run at, what humidity, how often should I turn it and so on.

The best answer to this question is usually Read the manufacturers instructions, then if the manufacturer is still around, call them and ask the questions which are on your mind. The manufacturer, and or manufacturers agent will usually have a pretty fair idea of what is required to get good results from their own machines, under a wide range of circumstances.

This leads us to the first rule for incubation. No two incubation combinations are the same, so an understanding of the principles of incubation will always yield improved results. I have found that people who have been incubating eggs, and then read a reasonable work on the principles of incubation, these people almost always improve the results obtained. Yet most do not think they they have changed their management. Usually the change is bought about by a greater awareness of a factor like the turning of the eggs, and so closer attention to the action of turning is the result. This meant that fewer turns were missed and the hatch result improved because the principles behind turning were understood.

What do I mean by combinations, I mean the total package of the incubator, and very few brands of incubators are all exactly identical, the room environment in which the incubator is placed, the breeding birds from which the eggs are derived, the storage conditions for the eggs prior to setting, and the perceptions and knowledge of the user. The combination of all these things ends up as the sucess or failure of our incubation venture.

So let us move on and examine the various parts of the incubation equation and see which parts we can effect and why.

Firstly, the most important part of the incubation equation is not the incubator but the egg. In my line of work I receive in the incubation season as many as 100 calls per week to try to solve incubation problems in all sorts of species. In greater than 70% of these cases, the poor results are not the fault of a incubator but the fault of the eggs not being good enough.

But, you may say, if an egg is fertile, then it must be good enough. Wrong!!! A fertile egg simply indicates that the female cell and male cell have united to form a single cell which has the genetic potential to grow to a complete chick. It does not mean that the nutritional requirements are in fact present in the egg to complete that growth. So a fertile egg is an essential first step, but if the rest of the egg is missing the food for the chick, or is loaded with bugs which will kill the chick, then being fertile is not worth anything.

In consideration of the essential first step of fertility, I must point out that many "infertile eggs" are in fact early embryo mortality. That is the embryo started to grow but died while the embryo was, to the untrained eye, not visible. This early embryo mortality may have several causes, but it is often referred to as "female infertility". The opposite " male infertility" has only one cause, that is that sperm from the male were not able to unite with the ovum from the female before the shell got in the way.

Male infertility can be the result of male too old, too young, lack of sperm mobility caused by Vitamin E deficiency, lack of contact bue to body problems ie Indian game, or feather problems ie pekin bantams, insufficient males in multi male flocks, incorrect lighting, lack of mating activity.

To determine the difference between "male" and "female" infertility requires the examination of the egg contents, mainly the blastodisc. This is the small circle on the side of the yolk which contains the ovum of the female. If it has been fertilised then this will be doughnut shaped with a clear centre. If it is infertile then it will have an opaque centre. This is best done with unincubated eggs as the seven days of incubation which usually occur before the first candling to detect infertility will tend to destroy the evidence. So if infertility is a problem, it will be worth sacrificing a weeks eggs to really see that the problem lies with the male, otherwise a lot of effort on the males may be wasted to no avail if in fact it is female infertility.

While we are there, we may as well examine the rest of the eggs. When we break then out carefully onto a plate, look at the embryo, then examine the yolk as a whole. Is it blochy, which irregular patches of light and dark colour on the yolk. This indicates a breakdown of the fat soluble vitamins, usually caused by stress such as hot weather or continued disturbance, lice, worms, or vermin at night. Is the white firm or watery? If it runs all over the plate it indicates that it is a stale egg, that the membranes have broken down. Watery whites in very fresh eggs (be sure they are only a day or so old) could indicate a disease such as infectious bronchitis even though respiratory symptoms may be minimal or non existant. If the eggs do not stand up well at a week old, then examine the storage proceedures.

So now we know if the egg is truly fertile. But at this stage I would say the the part we cannot see is if there is sufficient nutrient in the egg to ensure proper growth. Not the carbohydrate, or protien but the micronutrients. These vitamins and minerals are only required in comparitively small amounts but without them a good hatch is not possible. The micronutrients will pop up again and again as a source of problems so carefull attention to breeder diet before the eggs are laid is essential for the best results.

A diet of a few handfulls of wheat and grass would be ok for a bird laying 20 eggs a year but thats all. Even bagged layer ration is ok for the egg protien and carbohydrate needs but this layer ration is a least cost formulation which does not take care of the needs of hatching the eggs. I can feed a bird for brilliant production, and have almost none of the eggs hatch because the micronutrients were not available in the diet to be placed in the egg. If the first eggs laid after moult are great hatchers and then the hatchability and liveability of the chicks decreases rapidly as the season progresses then nutrition is almost certainly the culprit.

So we have our egg. What matters now? Egg storage is important. Egg storage commences the moment the egg is laid. It is first stored in the nest until collection. It cools for a few hours, and this cooling places the embryo into suspended animation. That is is is neither growing or dead. It is waiting. Our aim is to keep it waiting until we are ready. If it stays in the nest, the nest could be hot, allowing the development to continue, or the nest could be dirty, allowing bugs to get into the egg, or it could be damaged by other birds. So get it out of the nest as soon as possible, into a cool

store room, between 12 to 15 degrees Celcius.

Why this temperature? If it is too cool, then the embryo is less able to restart its growth when required. If it is too warm, say 20 degrees, then the embryo tries to develop but the temperature is not hot enough for correct development, the embryo is weakened by the partial growth and dies. Some early embryo mortality is caused by high storage temperatures but this will usually be evident with larger embryos and possibly the very beginnings of vein development.

While in storage, the egg should be turned once a day. Turning is a vital part of incubation, and during storage it is important too. Traditionally this has been because the membranes stick to the shell and the embryo sticks to the membranes. More and more evidence is comming to light to show there is much more to it than that.

So on to incubation. There are two types of incubator, still air or convection air flow, and moving air or forced draft incubators. They have quite different operations so I think they should be viewed separately. The principles of incubation are the same regardless of the species of bird, or the type of incubator. The application of the principles will vary from species to species and machine to machine.

The physical requirements of incubation are as follows.

1/ Temperature. The process of growth in the egg will only occur correctly at the correct temperature. Chemical reactions, enzyme action, and mechanical movements will only occur at the right temperatures. The process speed up as the temperature increases and slow down as the temperature decreases. I like the model of the soldier troop to illustrate the effect of correct temperature. At the correct temperature, the chemical processes of the growth of the embryo are like a troop of soldiers goose stepping through red square. They are all in time as they cross from one side to the other. If the temperature is too cool however the whole troop goose steps slower, but the whole troop does not slow down by the same amount. So they take longer to get to the other side of the square, and when they get there the formation is no longer uniform but ragged. Likewise if the temperature is too hot then the whole troop speeds up but some by more than others, the result the troop all get to the far side of the square early but in dissaray. So this is the effect of temperature. Too hot early hatch, deformed chicks, bloody unhealed navels, poor chicks. Too cool late hatch and soft chicks.

What is the correct temperature? This depends on the type of incubator and specifics of design.

2/ Humidity . This factor is subject to a great deal of interpretation. There are many variables to the humidity requirement. Ducks require higher levels of humidity because of the greater porosity of the shell. The interesting factor is this. All eggs loose about the same percentage of their set weight as moisture and respiration loss during incubation. This is seen as the growth of the air cell. Monitoring this air cell growth is one way to ensure that the humidity levels are correct. Weighing the eggs is another way to determine the weight loss but this is impractical with smaller eggs.

The moisture loss will vary according to the amount of moisture in the incubator, the species of bird, and the condition of the shell for that breed.

Shell condition is also effected by heat, water salinity, calcium deficiency, dietary factors, and length of lay. If the bird has been laying for a long time then the shell quality will decrease, and the evaporation rate increase requiring higher moisture levels in the incubator to ensure the correct moisture loss during incubation.

Other factors effecting incubator humidity requirements include the type of incubator, and the particulars of air flow and ventilation in the incubator.

3/ Egg turning. This is the last major physical requirement of incubation. I am amazed to still see in major publications the old idea that turning is to stop the membranes sticking to the shell. This is true but turning once a day or less is able to prevent this sticking of the membranes. Much research has shown that sticking is 10 % of the story. The rest of the story is to do with feeding of the embryo. In the first week of the incubation, there is no circulation system established. The chick feeds by contact with the nutrients it requires. As well as this, the chick produces waste products which sorround the chick and effectively reduce its ability to absorb nutrients. Turning means that the embryo moves to a place of fresh nutrients and leaves the waste products behind. The mechanism in the egg which accomplishes this motion is nothing short of amazing. Turning also ensures that the membranes develop correctly. Turning should be as often as possible usually 3 times a day is considered a minimum. The frequency of turning will be influenced by the species of bird and by the nutritional status of the egg. The lower the amount of vital nutrients in the egg, the more turning is required to ensure that those nutrients are effectively used.

Should the egg be on its point or on its side? Current research has shown many species incubate best on their side as this allows better development of the membranes. This usually applies to larger eggs such as goose, and some parrots. All others will show little difference in hatch rate if incubated on the side or small end down.

So once again I have been too thorough and so I have run out of space. I will finish the article in the June issue.