

Gamebird eZine

Special Edition

This is a “*Special Edition*” of *Leland Hayes' Free Gamebird eZine* designed to give you additional information about gamebirds. Gamebird breeders are clamoring for more information on husbandry, propagation, and general information about raising and keeping these interesting birds.

These “*Special Editions*” of the Gamebird eZine will be available from time to time posted on my website. Announcement of new editions will be made in the Free Gamebird eZine which is sent weekly to subscribing members. You can get on the mailing list by clicking on this link: <mailto:Subscribe@lelandhayes.com?Subject=Subscribe>. The *Gamebird eZine* is usually sent out each week with the exceptions of Holidays or unplanned situations that prohibit me getting it out. We are approaching 1000 subscribers. You are welcome to join the list and we ask that you tell your gamebird breeder friends about the *Gamebird eZine* and encourage them to join. Strength is in numbers and we are always looking for growth in our number of subscribers.

Thank you for your support!

Enteritis Relief on the Way

Quail disease, Ulcerated or Ulcerative Enteritis affects Bobwhite, California, Mountain and Gambel's quail, Sharptail and Ruffed grouse, Chukar and European partridge, Wild turkey, and of course domestic poultry. If you are in the gamebird business (or hobby) you have either a chronic, periodic, or infrequent outbreak, or a consistent fear of **Enteritis**. This one disease of quail nearly makes a preventative level of antibiotic in feed a necessity. News articles about antibiotic bans in livestock heap an additional layer of stress on the already stressed bird grower.

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Take heart! Your tax money is working for the gamebird industry (and Hobbyists) at the Agricultural Research Service Laboratory in College Station, Texas. A valiant effort at decreasing food borne

illness will give the gamebird industry a much needed product. Expensive antibiotics will be replaced with a reasonably priced, chemically non-controversial alternative that probably works better. All we have to do is wait for the Food and Drug Administration (FDA) to approve it for use.

Chlorate is so inexpensive that it is used to bleach paper during manufacture. Chlorate is the control for Enteritis long sought. This is how it works. Disease organisms that grow without oxygen cause terrible disease problems. Most intestinal bacteria that do not cause problems but maintain good intestinal health need oxygen to thrive. During periods of disease the bacteria in the intestines become imbalanced with the bad bacteria overwhelming good bacteria. *Clostridium colinum* is the disease agent of Enteritis. *Clostridia* can thrive in conditions without oxygen. They can be anaerobic. When these bacteria grow without oxygen they use other chemical to get their oxygen. They usually use nitrogen compounds to do this, but if chlorate is available they will convert chlorate to chlorite. Here is the best part; chlorite is poisonous to these bad bacteria – so they make their own poison and die. The good bacteria only use oxygen so they are not killed, maintaining a healthy balance in the intestines. Good-by Enteritis!

Now you may ask, “*How expensive this stuff will be?*” It is much cheaper than antibiotics. Also, the chlorate method was developed to prevent Salmonella poisoning in food. So it is very likely to be approved by the FDA. In this case more than one problem is solved, research is good. You never know what will be discovered!

(The above article is from: *Wildlife Harvest*, Vol. 37 NO. 6, June 2006 and was written by Lee Cartwright.)

Leland's Quail

(*C.l. leylandi*)

What a surprise for me to discover that there is a quail with my name! My only regret that it was not named after me. The nominate Bobwhite family for the Spot-bellied bobwhite is *Colinus leucopogon* with one of the subspecies (*C.l. leylandi*) called the **Leland's quail**. This causes my little gray cells to really get to work! I ask all kinds of questions about these quail and find few answers!

Other vernacular names are Dickey's quail (dickeyi); Sclater's quail (sclateri); white-breasted bobwhite (incanus and hypoleucus); white-faced bobwhite (leucopogon); white-throated quail (leucopogon). This quail is found in a pocket in Central Honduras. Its native range is very small which might suggest why it is not well-known.

The Spot-bellied bobwhite according to Johnsgard* is a resident of brushy fields and woodland edges of Central America from southern Guatemala to Costa Rico. The **Leland's quail** is a resident of Honduras, the small Central American country. This little bobwhite has the typical “bobwhite” call and lays as early as mid-March with some breeding occurring very late in the year. It appears that the weather conditions such as rain and temperature affect its breeding. Many of the quail will not breed unless there is an ample supply of insects on which they raise

their young. They seem to know when to begin the breeding cycle long before the hatching of all of the insects which must be available when their chicks hatch in abundance.

Care of these birds should be the same as with any other bobwhite. The chicks and breeders should be handled like the nominate race. The pictures I have seen of this little bird appear to me that this would be a very good bird to have around in your pens. I doubt that anyone with these birds would have any trouble raising the young. They may be rather flighty until they mature as is the case with the Masked bobwhite. When the young mature they calm down just like the rest of the bobwhites.

*Paul A. Johnsgard, *The Quails and Partridges, and Francolins of the World*.

Vulturine Guineafowl

(Acryllium vulturinum)

By
Leland B. Hayes, Ph. D.

In The Wild

These beautiful birds are native to Eastern Africa. They can be found in Ethiopia, Somali Republic, Kenya, Eastern Uganda, and North Eastern Tanzania. They like the dry desert areas with grasslands and patches of scrub and thorn bushes and trees. In the wild they can be seen roaming in small flocks of up to 25 birds, but reports of as many as 70 birds are seen on a regular basis. They seem to thrive on heat and bright sun. Being a desert bird they cannot take below freezing weather for long periods of time as their toes seem to freeze. However, they can take short periods of very cold weather with no harm. In cold weather they appear stressed and walk about hunched up which indicates they had rather be out in the hot sun.

These guinea fowl are by far the most striking of all the family kept in captivity. Some call them the “Royal Guinea fowl” which aptly describes them in my mind. I will let the photos serve as a description of these beautiful and stately birds which stand at over two feet.

Vulturine guinea fowl are great runners and seldom fly except to go to roost in high trees. They can survive long periods without water and can live nearly totally on the green vegetation

which they consume. They will eat insects readily but most of their diet consists of vegetable matter which consists of grasses, leaves and green material.

There are 38 natural species and subspecies of guineafowl that are currently recognized. These are divided into four general and seven subspecies. The Vulturine is the only species in the genus *Acryllium* which is in the *Numididae* family. This is to say that there are no other species which closely resemble this striking bird.

Keeping Vulturines

The large size of these birds would tell the observer that they need large pens. This is true as most every successful breeder has them in larger pens. Our pens were 8 feet by 18 feet which is large enough for one breeding pair. Your pens can be just about any size you can afford. One breeder has several pairs in a one acre enclosure which works well for him. Most of us cannot build a pen this large and have to do with much smaller spaces. I think you should make sure they are very tall. Ours are 8 feet tall which does not feel as crowded as a pen not so tall. Growing pens could be 25 feet by 25 feet and covered top and bottom to keep out predators.

Vulturines are “roosters” at night and should be provided comfortable perches. I put my roosting perches (2x4's) up as high as I can and still give the birds plenty of head room. I think the ideal shelter would be higher than the rest of the pen with the perches in it to encourage the birds to sleep inside during the night. These high perches are handy for the females to get away from aggressive males.

The shelter can be most any size. Remember, the main purpose is to keep the birds and their feed dry during wet and cold weather. Design the shelter so that it is not too dark as the birds do not like dark places. Sheets of plywood can be arranged in one corner or end of the pen to provide a roof and three sides of the shelter.

If you live in a very cold or very hot climate you must provide for the comfort of the birds. Some sort of heat will be needed at night in the shelter area when it gets below freezing. Also, during very hot weather you should provide some shade from the sun during the day. These birds just love bright hot summer days.

The males are very aggressive to the hens most of the time which reinforces the idea that the pen should be large as possible

so that she can escape from his amorous display. Our males would follow us around when we were in their pen but so far none has attacked us. I recently talked with a fellow that had a male that would jump on him.

These birds get very tame (which is one of their wonderful characteristics). One of our favorite hens would fly up to the ledge on the feeding door and take food from our hands. The young quickly tame down and become very tame at an early age. I have always loved very tame birds regardless of the species. I think one could train these birds to fly up on your hands to eat a treat!

Inbreeding

I have found that this family of birds does not take very well to inbreeding. Some species can tolerate inbreeding more than others. Vulturine guineafowl should not be inbred. This is why we got three unrelated pairs so we can offer young unrelated pairs to our clients. Never, never breed siblings together and expect success. You will notice that fertility gets poorer, they do not grow as large, and they are sick more than the birds that are not inbred.

Feeding

In their native habitat these birds eat lots of vegetable matter so we have adapted a feeding program which includes more vegetable matter than some of our other birds. They just love green foods such as lettuce, green beans and green peas. These may seem expensive foods but in the long run the high cost of quality feed will pay off in healthier birds and more chicks. We put in handfuls of leafy alfalfa hay and they go for the green parts. They need the fiber in their diet to have healthy droppings.

To meet this need for fibrous vegetable matter, we have developed a feeding program which includes cooked food. This is fed everyday and they gobble it up. We put the following portions in a rice cooker and cook it up: 4 portions of brown rice, 2 portions of popcorn; 2 portions of red beans, 2 portions of barley, 1 portion of dried split peas, 1 portion of dried black-eyed peas, 2 portions of pigeon grains. This is cooked in the rice cooker which turns off when done. It is then fed to the birds on a metal tray. We sprinkle generously with Vionate supplement about three times a week over this cooked food. This is given to the breeders, and the growing young birds alike. (See care of chicks for specific food for them).

Getting Fertile Eggs

Sexing these birds is a problem before they are mature. Our birds laid the second year but some of the older and more pre-

cocious birds can be visually sexed by about nine months. Generally, the hen is smaller than the male. Her carriage is different. She walks in a more submissive posture. When you see this you will understand what I mean. A sure sign is when the hen will crouch in front of the strutting male and not look at him in the eye. She is showing submission or else he will chase her and she must fly up to the perch to get away from his attentions. I have never had a male do harm to a hen but they can be very threatening.

The male is just the opposite in posture and conformation. He stands tall and stretches his head up high and curves his back while fluffing out his beautiful cobalt blue breast patches. Often, he will pick up a small stick and carry it around in his beak during his display. When the keeper enters the pen the male will follow displaying as if he is challenging an intruder.

To be very sure of the sex of these birds they can be surgically sexed, DNA sexed, or feather sexed. We prefer using the feather sexing method which is very simple. A blood feather is sent to the Laboratory and a culture is grown from the blood. In a few days the chromosomes are examined and the true sex of the bird is determined by the presence of male or female chromosomes. All of our young birds that we sold come with a certificate from the Lab and with a permanent leg band. We guaranteed the sex of our birds. This way, the birds can be sold and shipped before 9 months of age which is convenient to all persons. Occasionally we had breeder age birds for sale which we have held over from the year before. We sold these if we did not need them for replacements. We always kept unrelated breeder pairs maturing and often had surplus stock for sale.

Our breeders got Purina Game bird Layena fed dry as a regular ration. It was kept before them at all times and they really ate it. These birds have a great appetite which is nice. I do not like birds that are picky eaters. When you notice the birds eat less you know something is wrong; it is colder or warmer than normal or they are sick. If it is getting time to lay eggs, our breeders started eating like they were starving. This is a sign the birds are getting ready to lay. Another sign is the fact that some hens utter a low crying sound when they are about to lay. Perhaps they are looking for a suitable nesting site or are uncomfortable - who knows?

The time of year Vulturine guineafowl lay varies. In the wild they lay shortly before and during the rainy season to insure an adequate supply of insects and green grass. Our hens have laid as early as March and as late as August / September. I think that the climate has a lot to do with their timing. During the time when

I think they should be laying I give them extra protein in their diets. Hopefully, this helps trigger the breeding urge. If I have a good crop of mealworms at this time I give them several of these per day to help their protein intake. It is fun to have them take the mealworms from your fingers.

The breeding pen should have some cozy nesting sites for the hen to build her nest in. She will opt for a place and scrape out a cavity in which she will lay her eggs. It is a good idea to put logs, high grasses, and other materials in the pen to help the hen find a hiding place to nest. With a little experience the breeder will learn which site his particular birds prefer. At first, it is probably best to have several different places in order to let the hen make the choice. Every encouragement to her laying should be made.

When the hen starts to lay, I always take the eggs and store them for safe-keeping. Eggs are set every seven days. I always leave three nest eggs for the hen. This way she is encouraged to lay a full clutch before she gets broody. A clutch numbers from 11 to 15, usually around 12. The total number of eggs laid by individual hens in a breeding season varies. We had one favorite hen that laid over 40 eggs in three clutches in one season. We let her set on the last 4 eggs hoping she would take a rest from laying. It did not work as we took the eggs a day or two before hatching and she quickly cycled again and started laying. If our facilities had been predator proof (ants, rats, squirrels, and large gopher snakes), we would have let her hatch and raise the last clutch. However, the conditions were not right to do that. I would like to let a pair raise their own babies. It would be interesting to observe their habits when they have babies. They make very good parents. The hen bit my arm and put marks on it in several places when I stole her eggs. Nothing would dare bother her chicks during the day but at night something could take one from under her.

Hatching Eggs

One of the great things about guineafowl in general is the hardness of their egg shells. It is relaxing not to have to worry about soft and fragile egg shells. I have even dropped an egg on the cabinet and it did not break. It seems that all species in this family have the hard egg shells. The eggs are about the size of medium to large hen eggs (approximately 51x38 mm.) They are pale cream or buff, glossy and pitted with buff and white specks. It is interesting that each hen will lay a specific color and pattern so that her eggs can be recognized in a batch. I am not sure if this pattern changes from year to year.

Eggs can be successfully incubated in an incubator. I am convinced that using natural incubation will probably get better results. However, not everyone can have a flock of broody hens to do this. We run our incubators at 99.75 ° F. dry bulb and 81-83° F. wet bulb. This is somewhat dryer than most birds but if the humidity is too high the chick embryo grows too big and cannot turn in the shell to hatch out. When they pip you can tell if they are too big or just right by the way the pip looks. If they are normal a triangle will be opened in the side of the egg. This means that they are just right. If the pip is a hole more near the top of the egg, they will probably have trouble and have to be helped out of the shell. If the chick is allowed to breath oxygen while still in the egg for too long its toes will set and it will be crooked toed. To avoid this I always go ahead and careful hatch them out provided that the membrane is clear and not bloody. Experience will help here. We found that at this temperature and humidity the chicks hatched on the 24th day. Be sure that the floor of your hatcher is not slick. Put some small hardware cloth on the bottom so the chicks will not loose their footing.

Brooding Chicks

Vulturine guineafowl chicks need special care the first two weeks. They are not difficult to raise once this special care is understood. We learned the hard way and want to give you the information that we learned about these chicks. It is our desire that you have success and not make the same mistakes that we made.

Brooding the chicks can be done on any good footing. It is important that the chicks not slip on the floor during this stage else they could get slipped joints and crooked toes. Our chicks stayed in these units for about 4 days and then were placed in a regular brooder where they could run around and get necessary exercise. In four days they know how to eat and can manage.

We have already talked about the need for high vegetable matter in the diets of these birds. When the chicks are under two weeks of age it is critical that they have a very low protein diet. If you ignore this advise (as we learned) the chicks will develop crooked toes and even have their hock joints go out on them. High protein cannot be tolerated. I suppose that the chicks could live and thrive on just grasses and the like the first few weeks of their life. We have found that the chicks are rather delicate the first 48 hours and seem not to learn to eat very readily. They are not difficult to get to eat but they seem to be slow in learning. To get them to eat we have learned some tricks. It is best to have several chicks together at first as when one picks up food they all do the same. They are flock birds even at this young age. We have used

“teacher” birds with them successfully. We simply put one or two of last week’s hatch with the newborns to teach them how to eat. I suppose you could use some other species of chick to this also. To help them learn to drink we give each one a drink as we take it from the hatcher and put it in the brooder unit. By dipping carefully the little beak in the water you can see them take the drink. Often they will stand by the water and take another drink on their own. Be careful not to strangle them when you dip their beaks in the water. Soon you will see the chicks run to the water founts and dip their beaks in the water and raise their head to let the water run down their throats.

Our Method of Feeding Chicks

The following is the most important part of this article. We learned the hard way that these chicks just **cannot tolerate very much protein** in their diets the first two weeks. Here is a list of what we feed our chicks (it seems to work):

Chopped Lettuce - this is the main matter in their diet. Cut the lettuce in fine strips about an inch or so long. They seem to like to grab a piece and run around to keep the other chicks from stealing it. This triggers an eating reaction in all the chicks and they start to feed.

Small baby English peas - we use the frozen kind. The smaller the size of the pea the better. Thaw them out first and get them warm in the microwave oven. To feed peas, I simply crush each of the peas and give them to the chicks. You will see the chicks swallowing down a pea or two which will give him the nourishment he needs. This is always exciting when you see this as you know they are on their way to learning to eat.

Boiled Eggs - I know this is high protein but if you grate it over the chicks and the small pieces fall around they will grab a bite and learn to eat. Do not give more than one or two feedings of this egg per day. Be sure that all of it is cleaned up and not left on the floor as it will spoil and grow harmful bacteria.

Cooked Brown rice - we have found that the chicks love this treat. We give it three or four times a day. It is a good medium for vitamins (see Vionate below).

Frozen Vegetables - these can be thawed and chopped up very fine. We use the mixture that has peas, corn, lima beans, carrots, and broccoli. This is way too coarse and must be chopped up for the chicks. They will not eat too much of this at first but will learn to look forward to it.

Purina Game bird Startena Kracketts - is fed several times a day. This is very high protein but the chicks need some protein to grow properly. Probably, I could say that our chicks have about 1/4th Gamebird Starter and 3/4ths vegetable matter. This percentage can be changed after two weeks when the rapid growth begins. I cannot stress the importance of this diet enough in starting Vulturine chicks. We lost several chicks before we learned about this method of starting the chicks without having the terrible problems caused by a high protein diet.

About Vitamin Supplements

We have found that our chicks (and breeders too) do much better when we use the product called **Vionate**. This is a supplement which has many followers. I am one. I do not have a connection with the makers of this product but I can heartily recommend it from my experience. I feel that it gives the chicks what they need and in addition to that it helps keep the toes from going crooked. I have no scientific evidence for my feeling, but I feel strongly enough that I feed this supplement to all my birds. This vitamin is rather expensive when bought by the pound - but if you get several pounds (enough for one breeding season) it is very reasonable considering all of the benefits. I have found that it tends to go stale so should be used up probably within a year. I buy it in 50 pound boxes.

Two Weeks and Beyond

When you get the chicks up to two weeks of age, most of the battle is won with toes going crooked or legs going out. It seems that the first two weeks are the most critical. More protein can be added to the diet but the ration of vegetable matter should remain the same. I give lots of grass clippings from my lawn to the birds as they are growing out. They love it and always are eager to eat a salad treat.

The cooked bean food is continued throughout the life of the bird. I am a real believer in this method of feeding all birds. It works and the birds seem to love it. Regardless of the species of birds you raise, if you can get them a diet much like the one they have when in the wild, you can raise Vulturine guineafowl successfully. You need to be sure you get good strong unrelated blood. If you do this success can be yours. Secondly, I hope that by reading this article and using some of my methods you can save yourself the heartbreak of failure. It has been my purpose to give you the benefit of what we have learned from others and what we have learned by our own experience. You can pay us back by giving help to someone else.

Note: I had my Vulturines two years. The first year we raised 94 birds to maturity from three unrelated pairs. We sold forty-five unrelated breeding pairs. I had to get rid of all my vulturines as I found that I had colon cancer and needed an operation. So far so good – no return of the disease!

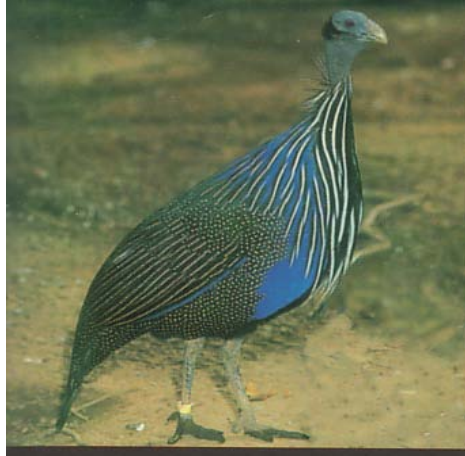
*A major resource for this article was *Guineafowl of the World*, R.H. Hastings Belshaw, Nimrod Book Services.



Here is a clutch of day old Vulturines.



Three mature Vulturines – two males and one female.



A beautiful male Vulturine Guinea fowl. Note the florescent blue color on the sides of the breast. This sets these birds apart from other guineafowl.



There are four ages of youngsters here.

Final Thoughts

Your comments are invited concerning this “Special Edition” of the Gamebird eZine. Feel free to print out any portion for your library. I have plans to put out a Special Edition once a quarter. Next time the “featured Article” will be on Pens---building, size, tips on how to provide the most comfortable home for your birds as possible.

Be sure and tell your friends about the Free Gamebird eZine and ask them to subscribe. Also, if you are a beginner or just want to learn more about gamebirds, I urge you to get a copy of my book, *Upland Game Birds, their Breeding and Care*. You can get it through my website:

http://www.lelandhayes.com/information_on_raising_quail_pheasants_partridge_gamebirds_hatching_eggs.html