

# HIGH SCHOOL POULTRY PROJECT

By Harold C. Killins, De la Salle High School, Bereina, Central Province

*A poultry project was started at De la Salle high school because the students exhibited keen interest. The traditional method of raising chickens is simply to leave them to find whatever food they can. Little or no feed is provided by the owners. This means that it costs practically nothing to raise the chickens but it also means that they grow very slowly. It is therefore a long time before they are large enough to be killed and eaten. We promised the villagers that with good feeding and quicker growth we would produce a tender palatable product in a profitable way under village conditions.*

*Our first step was to demonstrate methods that would be useful on the village level. It was intended to start more sophisticated commercial ventures later.*

## Choice of stock

Day-old chicks of three breeds and one cross were purchased from Brisbane. They were Rhode Island Red, Black Australorp, White Leghorn and Leghorn X Black Australorp.

Experience had shown that the strain of Rhode Island Red available was of more value for meat than for egg production. They are vigorous birds, well able to survive the harsh village conditions.

The Black Australorp stock has been bred for both egg production and meat yield. Here again there is outstanding vigour and good survival rate. However, more feed is required to produce a dozen eggs than is the case with chickens of lighter weights, because of the maintenance of the larger bird. Birds require

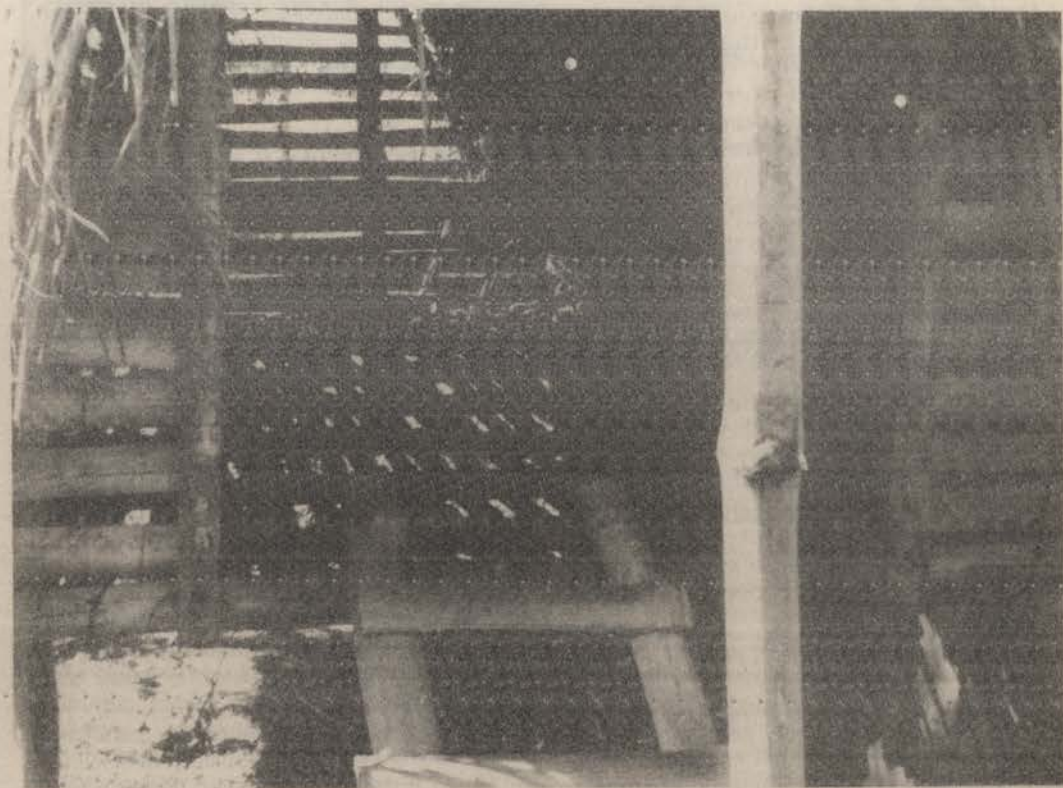


Plate 1.—Looking into a chicken house. Note the floor made from slatted bamboo.



Plate 2.—The chicken houses, with thatched kunai roof, surrounded by a fenced yard where the chickens can run, protected from dogs.

some feed just to stay alive before any can go toward egg production.

The Leghorn chicks purchased were weak and undersized when first received. This condition could have been due to one or all of the following causes: eggs that were too small were set, nutritional deficiency in parent stock, or a genetic factor. Leghorn pullets will probably perform as efficient egg producers in that a minimum of feed will be required to produce a dozen eggs. But as Leghorns are small, the meat yield from cockerels and yearling hens will be much less than from other breeds at the school. Meat quality is not quite as good as from larger breeds.

The cross between White Leghorn and Black Australorp is probably one of the best birds that can be supplied to village people. At time of writing we had cockerels and pullets of this breeding that were four months old. The cockerels averaged 1.4 kg each, and pullets 1.2 kg. Egg production from this breed is usually very good and efficient in terms of feed to egg ratio. However, the pure bred White Leghorn will be even more efficient in this regard.

### Brooding

Brooding in this case was very simple. We used what is commonly known as the "cold brooder". This is nothing more than a

cardboard box, with four doors or openings, each about 5 cm X 8 cm—one door on each side. A box 60 cm square and about 20 cm deep is satisfactory for 25 chicks. This brooder is required only at night in the warm climate of the lowlands. It is used for about a week.

The cold brooder is very satisfactory under our conditions where temperatures range between 21 °C and 32 °C. At lower temperatures the Department of Primary Industry recommends the construction of lamp brooders as described in the Rural Development Series handbook "Poultry".

As breeding stock is now established, we hope soon to make a start with brooding with mother hens. This programme is practicable in the village situation.

### Housing

Day-old chicks were housed in buildings which were later used as growing pens, and then for housing layers. When day-old chicks were kept in the pens pictured (Plate 1) the slatted floors were covered with cardboard. Cardboard was also used on the walls as protection from cold winds. When the chicks were five weeks old the cardboard was removed.



The floors are made of bamboo slats with the rounded side up. These stay quite clean. The ends of the pens are also made with bamboo slats. A good amount of sunshine is admitted. The frames of the buildings are made of fairly straight poles of about 5 cm diameter. Nails are the only product purchased for the construction of these buildings. Roofs are thatched with kunai grass. The grass is about 20 cm thick; it offers a fair amount of insulation from the blazing sun (*Plate 2*).

Wire fences were also erected around the pens to protect the chickens from dogs, etc.

The pens are on posts about 1 metre above the ground. When they were being built, old tin plates were placed on the tops of the posts under the pens, to prevent snakes and rats from entering the pens.

Water and feed troughs are made from bamboo poles (*Plate 3*). These are a type the writer first saw at Popondetta Agricultural College. We find them very satisfactory. If too much wood is removed from the top opening,

however, the chickens tend to waste a considerable amount of feed.

### Feeding

The day-old chicks were started with one bag of commercial feed, and about three months later a second bag was used.

We feel that it is quite wrong to raise fowls in villages on prepared feed. All that is available is produced in Australia and transport costs make prices rather high. At De la Salle we have used cooked paddy rice, rice bran and cooked fish with reasonably good results. Feed supplied to young chicks up to 5 weeks of age, and to laying hens, contained 20 % protein. This was obtained by adding two parts (by weight) of cooked fish to three parts of rice bran, and mixing thoroughly.

We are growing a few soyabeans and plan to use these as a protein supplement. They must be cooked or heated in some way before feeding. Sweet potatoes are available in quite large quantities in this area, but they also must be cooked in order to get the best feeding



*Plate 3.*—Chickens feeding from troughs made from bamboo poles. These bamboo troughs are used for both feed and water.

value. They have a fair value as an energy feed, but the protein level is only 4 % calculated on a dry weight basis.

Green feeds provide vitamin A and soluble minerals which are very important in the diet. When the chicks were small, dark green succulent grass was chopped and used with the feed. When the chickens were large enough to run on grass, they were of course able to obtain their own greens. We have used leucaena in a limited way, but it should not make up more than 5 % of the total diet, as it contains a substance which can have bad effects on the birds. The protein level of dried leucaena is between 26 % and 30 %.

Salt is supplied at a rate of about  $\frac{1}{2}$  % of diet (1 kg of salt thoroughly mixed into 200 kg of feed), and calcium as coral limestone in small pieces or pounded into powder.

Trace minerals come from the soil. When the chicks were small they were given a handful of soil each day. This was soil from a place where chickens had never been kept.

#### Results so far

Students have shown considerable interest in the project at the school. Twenty-two boys purchased cockerels from the school project to mate with village hens to improve egg and meat production at home.

Very few village people have as yet ventured into business on a large scale,

although it is expected that commercial flocks will become commonplace in the future. Dressed poultry and eggs could be produced for the Port Moresby market. The new road to Bereina has made movement of all goods comparatively quick and cheap.

It is in the field of chicken nutrition that we believe most has been accomplished from our poultry project. Use of local energy feeds, balanced with protein supplements like cooked soyabeans and fish, gave fairly satisfactory results when fed at regular intervals. Fencing to protect the chickens from predators has certainly been demonstrated to be of value.

After five months, the value of the cockerels and pullets was three and a half times the cost of the day-old chicks, the feed and the pieces bought to build the chicken house.\*

All changes in agricultural methods take place quite slowly. However, the methods demonstrated seem reasonably practicable. We feel that they can be taken up with advantage at the village level. Where changes have been made, a pattern is set for others to follow.

\*The cost of materials bought for the chicken house, including fence, were divided by five for this calculation, as they are expected to last for a long time.

### EXCELLENT MARKET FOR CHILLIES

Birds-eye chillies are now being cultivated for sale in many parts of Papua New Guinea.

The world market for birds-eye chillies is expanding and the prices are buoyant. The Department of Primary Industry is now paying 42 t per kilogram for dried birds-eye chillies in main ports of Lae and Port Moresby.

Last year, 1975-76, the Department purchased 200 tonnes of dried chillies from growers, and after sales to both local and overseas buyers it made a gross return of K 120 000.

From the size of the world market which is around 1 100 tonnes per year, one can see that PNG is starting to hold a significant share of this market, and by closely watching the quality of the commodity, the Department

will be out to ensure that this share is maintained.

Western European countries make up the bulk of the market, although Australia and New Zealand do buy a small proportion of our chillies.

PNG's main rivals would be Nigeria and Tanzania, who are the traditional producers.

While the Southern Highlands and Milne Bay Provinces produce the bulk of the crop, chillies are also grown in other provinces. They are often planted together with other cash crops. Although chillies are not regarded as a major income-earning cash crop, due to the high requirement for labour, they could be a very important crop for the family to fall back on when prices for other crops are low.

Paul Saffi