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Producing poultry meat for profit - Part 2

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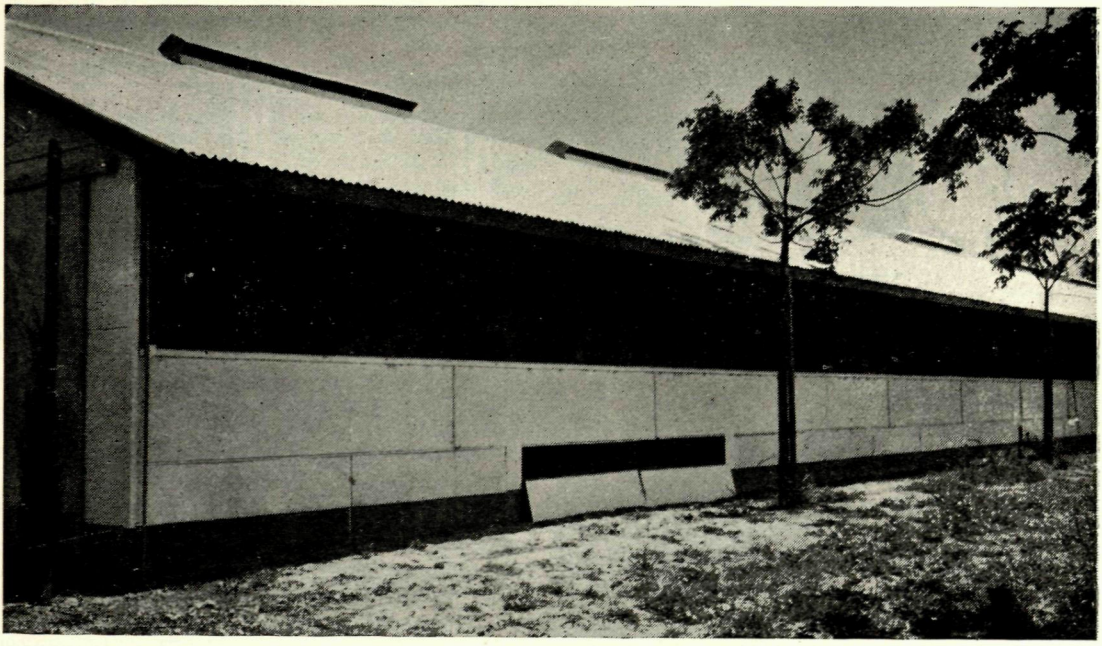

Fig. 1.—This photograph shows the ground and roof ventilators necessary for controlling temperatures of poultry sheds. The bottom shutters are closed during the winter and left open in the summer. The air vents on the roof allow the rising hot air to escape. Shade trees and sprinklers along the ridge are other popular cooling devices. If the air temperature in the shed rises above 94° F., the body processes cannot operate properly and growth rates are reduced

PRODUCING POULTRY MEAT FOR PROFIT

Part 2

By D. K. GILES, B.Sc. (Agric.), Poultry Adviser

BECAUSE the profit per bird is usually small, large numbers must be reared and marketed to give a worthwhile income from poultry meat production. Factors such as feed and labour costs, the degree of cheapness or availability of other meats—and similar influences over which the poultry meat producer has little or no control—are liable to bring about unpredictable variations in returns over a period.

Although he can help to reduce wide variations in his net return by efficient management, the man who depends entirely upon poultry meat production for his income must plan his business on a long-term basis, putting aside reserves in the high-return periods to tide him over the time when returns are lower.

No. 4.—SOME POINTS WORTH STUDYING

This brings us to the question of whether poultry meat production should be the sole source of income, or whether it should be merely a side-line to other farming activities such as cereal-growing, dairying or fruit-growing.

Food costs for poultry meat production are usually from 65 per cent. to 75 per cent. of the total costs incurred so that the return per bird at 12 weeks of age and 3 lb. in weight would be approximately as follows:—

Gross return at 2s. 6d. per lb. liveweight		7s. 6d.
Food costs at £30 per ton	2s. 10d.	
Other costs	1s. 4d.	4s. 2d.
Net Return		3s. 4d.

This means that the farmer would have to sell 600 cockerels to net £100 or 6,000 to bring him in £1,000 in a year. If the liveweight price dropped to 2s. per lb. the

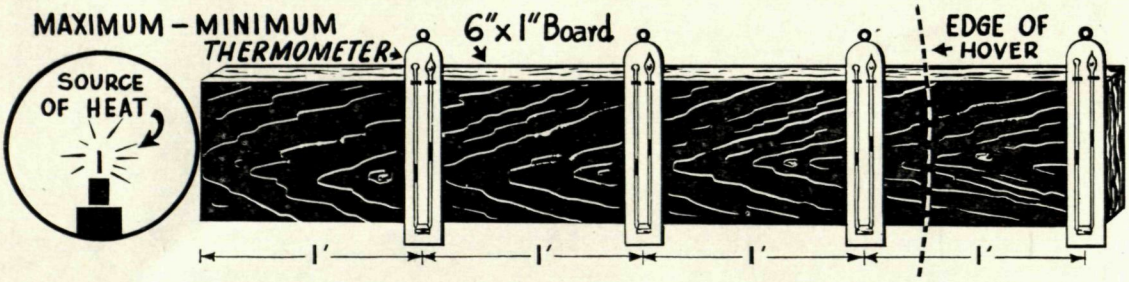

Fig. 2.—Device for calibrating the brooder. A series of maximum-minimum thermometers are mounted on a 4ft. length of timber

net return per bird would be only 1s. 10d. and it would be necessary to market 11,000 birds to net £1,000.

From the foregoing, it will be seen that the man who is feeding cockerels as his sole activity must be prepared to operate on a large scale in order to ensure adequate returns during the "good periods" so that he can cushion the shock of a drop in prices. He will have invested his capital and equipped his farm with a special object in view—the production of poultry meat—and as he cannot afford to switch to other activities he is more or less compelled to "stay in business" even though prospects may not appear bright.

The man who feeds cockerels as a sideline is in a much better position. If he is a cereal-grower or dairy-farmer he has an opportunity of reducing feed costs to an appreciable extent, and in the event of returns dropping below a satisfactory figure it is a comparatively simple matter for him to drop out of the poultry meat business and divert his energies and equipment to other activities.

No. 5.—SOME HINTS ON MANAGEMENT

In the case of the sideline operator where fairly small numbers of birds are involved, the management practices as advocated in pullet rearing would be quite satisfactory. For the large-scale production of marketable cockerels, some modifications would be advisable.

Good Brooding is Essential.

The most important management feature is good brooding.

Inefficient brooding kills thousands of chicks at all ages up to five or six weeks. Even where the deathroll is not heavy, chilling causes serious setbacks and slows down growth rates. Any check in growth rates means diminished profits.

There is nothing mysterious about brooding—it is merely a matter of providing sufficient constant heat over an area which is adequate for the accommodation of all the chicks involved.

The emphasis is on the word "constant." The temperature must be maintained at a suitable level, irrespective of outside influences. Even on the coldest periods of the day or night, it should not be allowed to vary more than five degrees.

The small operator can probably achieve this result by using any reputable commercial brooder, so long as he does not attempt to pack in more chicks than the brooder is designed to carry. I suggest however that, after reading these notes, he would be well advised to check the temperatures of his brooder under varying conditions to satisfy himself that the heating unit is really doing its work effectively.

The desirable temperatures in the areas where the chickens sleep and return for warmth should be within two degrees, above or below these figures—

95° F. for the 1st to 3rd weeks.
90° F. for the 4th week.
85° F. for the 5th week.
80 F. for the 6th week.

The temperature in the brooder house should never be allowed to fall below 60° F. and should preferably be nearer 70° F. Obviously, the greater the difference between the temperatures of the brooder house and the brooder itself, the more difficult it will be to maintain the brooder temperature at a constant desirable level.

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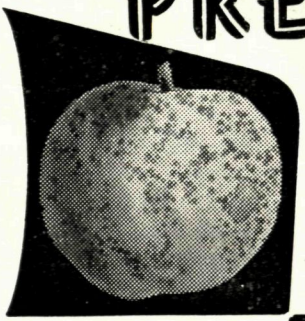
PREVENT



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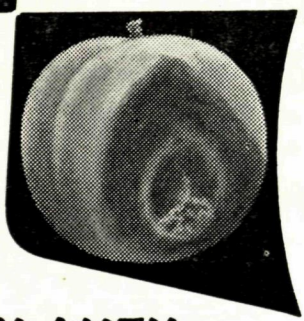

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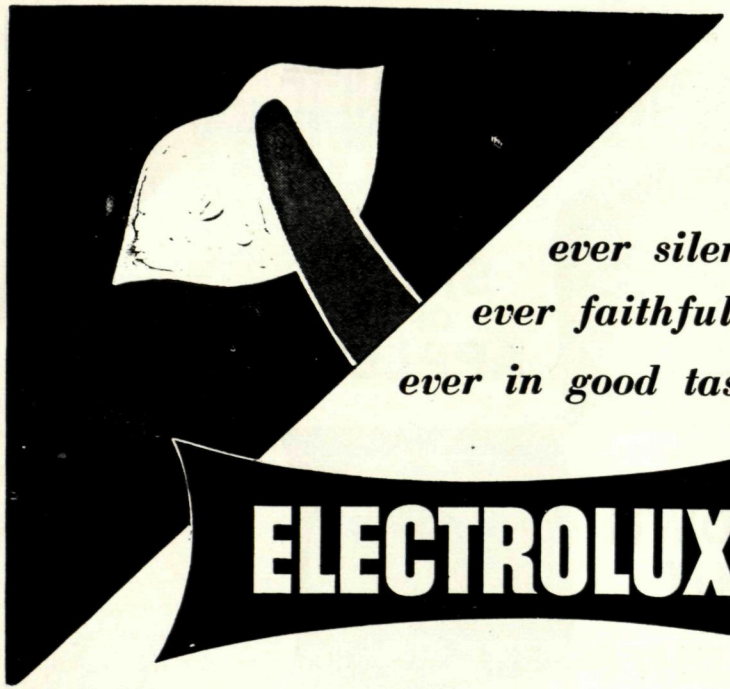

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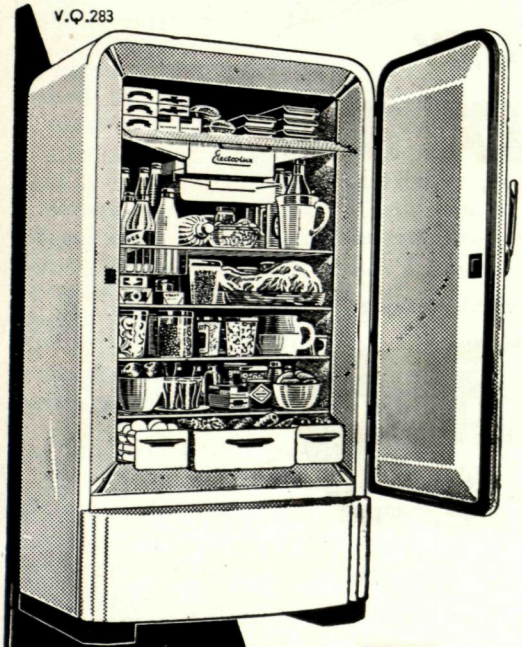

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This means that the brooder houses should be designed so that they are affected as little as possible by outside temperatures. Ideally, the walls and roof should be well insulated and the inlet of cold air and the outlet for fumes and stale air should be accurately controlled.

The following examples of temperature differences, using commercial brooders in a brooder house constructed from asbestos-cement sheets on a timber frame, illustrate the need for constant vigilance. These observations were made at the Poultry Research Station where a comprehensive programme of experimental work has been inaugurated:—

(a) Brooder temperatures at 15in. from the heating unit was 95° F. when the outside air temperature was 65° F. When the outside temperature dropped to 35° F. (a frosty morning) the brooder temperature, at the same distance from the heat unit, dropped to 65° F.

(b) A brooder temperature of 90° F. to 95° F. was found in a belt 15in. wide surrounding the brooder at a distance of 15in to 30in. from the heating unit, when the outside temperature stood at 65° F. When the outside temperature dropped to 35° F., the belt was only 6in. wide and only extended from 12in. to 18in. from the heating unit. The importance of this may be realised when it is pointed out that the heated area available to the chicks was reduced from approximately 15 square feet at 65° F. to 4 square feet at 35° F. In other words, the brooder was only able to successfully carry about a quarter of the chicks during the cold spell.

(c) Where a thermostat was used to control the upper temperature limit, the range was from 95° F. to 100° F., at 15in from the heating unit, when the outside temperature was 65° F. When the outside temperature dropped to 35° F., the range was from 85° to 100° F. Without thermostatic control, a commercial brooder varied from 70° to 125° F. at 15in. from the heating unit at outside temperatures ranging from 35° to 65° F.

The basic principle governing successful brooding might be briefly summed up as follows:—

> At the coldest period of the day or night there should be an adequate area of floor space to accommodate all the chicks in temperatures within the ranges recommended for their ages.

This can best be achieved by accurately calibrating the brooder before the chicks are introduced. A simple and satisfactory method is to use the device illustrated in Fig. 2. This consists of a 4ft. length of 6in. x 1in. timber to which are attached a series of maximum-minimum thermometers spaced at intervals as shown. These thermometers may be purchased through suppliers of poultry requisites or industrial equipment and cost approximately 32s. 6d. each.

One end of the timber is placed near the heating unit and the thermometers show the maximum and minimum temperatures at various distances from the unit, during the period they are left in position.

Large-Scale Brooding.

Although the sideline producer can probably achieve successful results using a few 200 to 300 chick brooding compartments, the large-scale producer of poultry meat could not afford either the buildings, the equipment or the labour that a large number of small units would normally require for successful operations.

A popular type of brooder used extensively overseas in the "mass production" of broiler cockerels, is the type in which hot water or hot air is piped over a large area. Parallel pipes are incorporated in the flooring or situated about 12in. above the litter so that a large area of the brooder house is maintained at a uniform temperature.

In such a set-up, labour costs are low and temperature control is facilitated as only one main heating unit is required. In establishing such a system however, it is essential that a precise assessment of heat output should be available before installation is completed. It is essential to have

the heating system under some form of accurate control so that the chicks are not chilled or driven from the heated area.

In this system, the chicks are not usually separated into small groups but are reared in veritable "mass production" with as many as 5,000 birds housed in one batch.

The other type of large-scale brooding is one in which large numbers of smaller heating units are distributed at intervals throughout the brooder house. Here the chicks may be grouped in numbers which can be effectively handled by each heating unit and kept in the vicinity of the unit by sheet metal "surrounds," The surrounds are gradually moved further out but are left in position until the chicks become accustomed to returning to their own brooders.

The surrounds are made from 18in. wide strips of plain galvanised iron stood on edge. They are curved in circular form when first installed and the diameter of the circle is increased as the chicks grow older. Later, the strips may be clipped together to form squares which abut one upon the other, so utilising all the floor space between the heating units. When square surrounds are used, triangular pieces of sheet metal are placed obliquely in the corners to prevent the chicks from packing into the angles.

Eventually, the surrounds are removed so that the chicks are able to move freely throughout the brooder house. A few low candle-power light bulbs in the brooder house will help to prevent the "packing" of chicks.

Where a centralised fuel system (electricity or piped oil fuel) can be used, the multiple brooder lay-out is low in labour costs and can be very effective. Where each heating unit is individually fuelled and operated, labour costs are relatively high.

Every precaution must be taken, with this type of brooding, to ensure that at no time is any individual brooder carrying more chicks than it can warm satisfactorily.

Competition.

At all stages of brooding there will be some degree of competition for food, water and warmth. Some chicks will "bully" the others, and for this reason it is essential that there should be ample troughing and no shortage of hover space.

The **minimum** length of feed-trough per 100 birds should be:—

1 to 4 weeks old—12ft.
5 to 10 weeks old—16ft.
11 to 20 weeks old—24ft.

The **minimum** watering space per 100 birds should be:—

1 to 4 weeks old—4 fonts.
5 to 20 weeks old—2 to 3ft. of trough space.

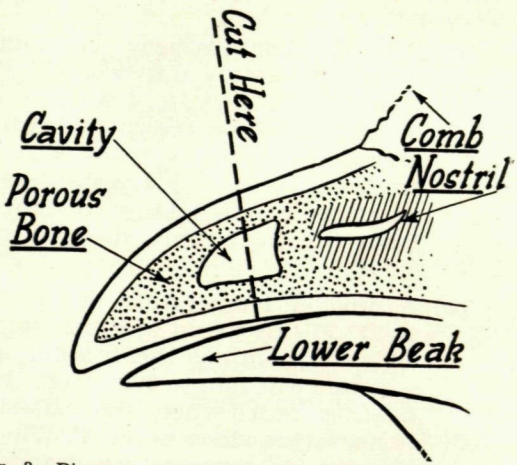


Fig. 3.—Diagram showing the construction of a fowl's beak and its relation to the de-beaking operation

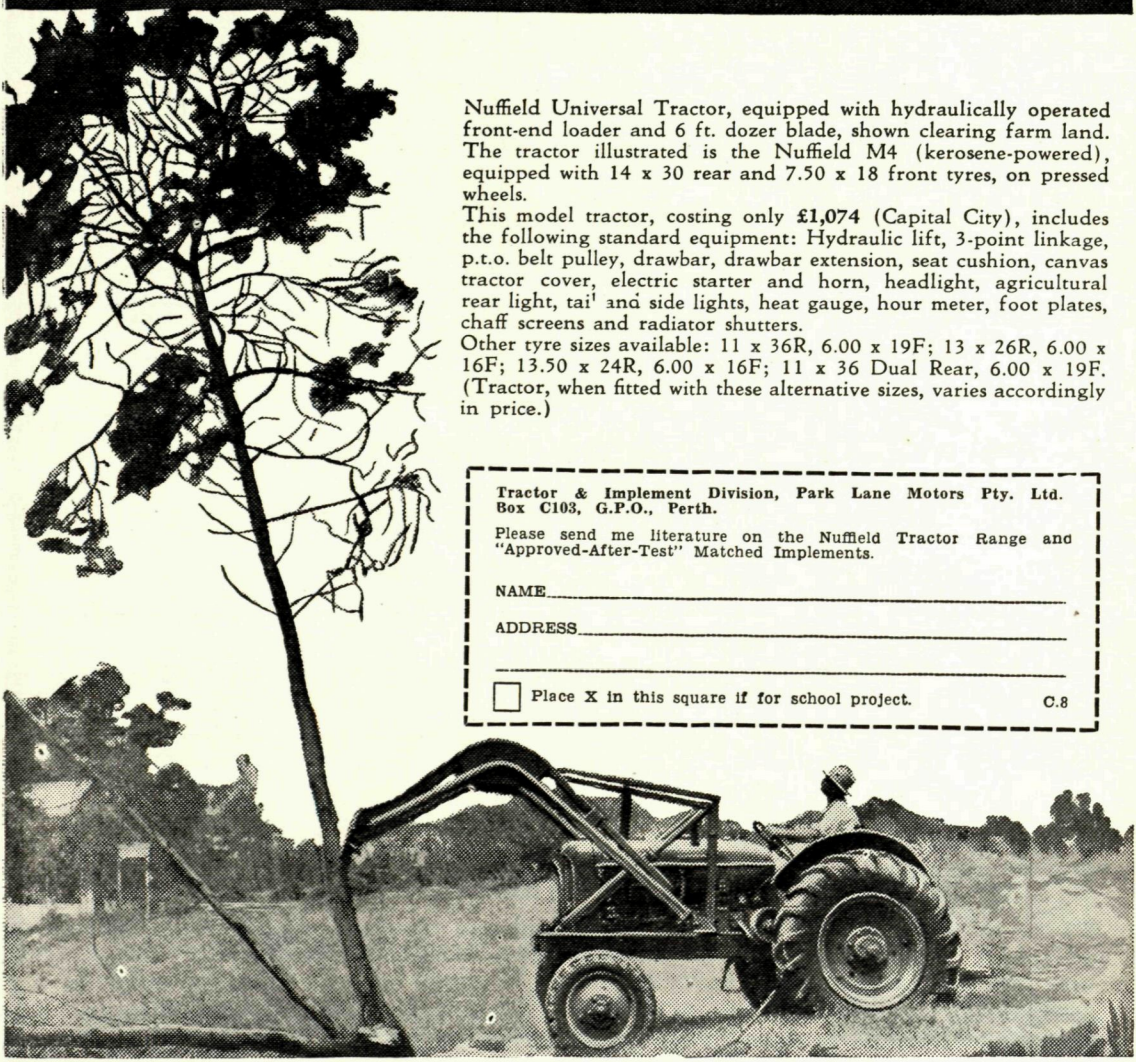
Use Building to Full Capacity.

As emphasised earlier in Part 1 of this article, the highest profits are gained when all capital equipment such as buildings and plant is being used to its fullest capacity.

By marketing the birds at 11 to 14 weeks of age, the producer can turn out three batches of birds in a year and still have time for disinfection and maintenance of the sheds.

The shed space should be fully utilised without overcrowding the birds and as a guide I suggest that where chicks are brooded in a separate brooder house the minimum space allowance should be ½ square feet per bird where some free range By the time the birds are 12 to 14 weeks old they will require about 1 square feet per bird if housed intensively, or about ¾ square foot per bird up to six weeks old is available.

A TREE-FELLING TASK FORCE



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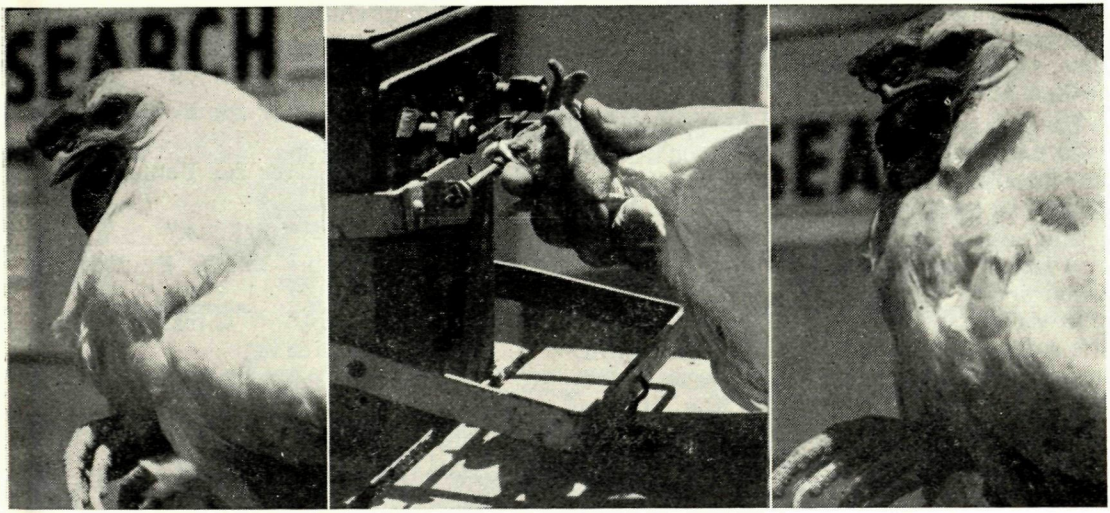


Fig. 4.—Debeaking an adult bird. Left—Before the operation. Centre—Beak in position on an electrical de-beaker. Right—After the operation

Disease Kills Profits.

Don't wait for an outbreak of disease to demonstrate that only healthy birds can be expected to gain weight and show a profit.

Take every precaution against introducing disease into your property. Buy only healthy stock from reputable hatcherymen; feed and house your birds properly, deworm them if necessary at eight weeks of age and vaccinate against fowl pox at ten weeks; and don't hesitate to feed nitrofurazone at a preventive level according to the manufacture's recommendations to help in avoiding coccidiosis.

Should any symptoms of disease manifest themselves, in spite of these precautions, get in touch immediately with the Poultry Branch of the Department of Agriculture. Expert diagnosis and advice will be made available without delay.

A bird which dies from disease is an obvious loss. Less obvious, but equally hard to take, are the losses arising from even minor sickness. A loss in weight or merely a reluctance to gain weight can whittle down the poultry meat producer's profits to vanishing point in an amazingly short space of time.

Carcass Blemishes.

A common cause of reduced profit is the prevalence of carcass blemishes among the finished birds. It will readily be understood that the top prices will only be paid for dressed poultry that is well-fleshed, tender and symmetrical with a skin that is clean and free from discolouration and damage.

Lack of symmetry in a carcass is commonly caused by crooked breastbones. Damage to the "keel" frequently occurs while the bird is young and the bones still soft and flexible and faulty perching is a frequent cause of this trouble. Some forms of crooked breast-bones may be inherited and this emphasises the need for care in the selection of stocks of day-old chicks.

Skin blemishes usually take the form of breast blisters (caused by perching on hard floors, wires or slats) and injuries caused by rough handling or cannibalism.

Cannibalism is probably the most frequent and most serious cause of injury. It may occur at all ages from day-old onward and even tiny chicks will peck each other until they draw blood. The sight of blood intensifies the cannibalistic urge and many injuries and even deaths can occur within a few hours once the vice becomes prevalent.

Although good management can often keep the incidence of cannibalism at a low level, it can occur in the best managed flocks.

Strict attention to diet and the avoidance of overcrowding will tend to reduce the risk of cannibalism, but it may be prevented from occurring if the chicks are de-beaked preferably as day-olds.

If this operation has not been carried out and an outbreak of cannibalism occurs, the birds may be successfully de-beaked at any age.

The most efficient method of de-beaking is to use an electrically-heated rod to cut the beak and at the same time sear the tissues to prevent bleeding.

The upper mandible is taken off just forward of the nostrils. Care should be taken not to cut too far forward under the impression that it will make the operation less severe. The portion of the beak nearer the tip contains porous bony tissue which bleeds more copiously than the tissues nearer the nostrils.

Electrical de-beaking equipment may be purchased from suppliers of poultry requisites.

Hot Weather Precautions.

In producing poultry meat during the summer months, special attention must be given to keeping the birds as cool as possible.

High temperatures lead to reduced food intake and consequent reductions in growth rates. Some of the most effective methods of ensuring hot weather comfort for the birds are:—

(a) Shade trees over the sheds.
(b) Shed walls designed to permit of maximum air movement.
(c) Air vents in the roof to allow the escape of heated air.
(d) Sprinklers on the roof and hosing or sprinkling the earth surrounding the sheds.

Air movement is the cheapest and most effective method of reducing the effects of high temperatures on the birds. It allows the birds body-cooling mechanism to operate to the fullest extent.

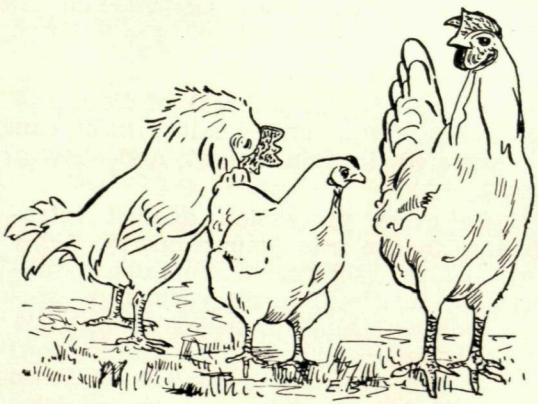
An air temperature greater than 94° F. causes stresses within the body, so the aim should be to keep the temperature below this level.

If birds become prostrated from heat apoplexy, wet their heads several times and place them in the shade to recover.

OTHER PUBLICATIONS

It is suggested that the farmer who is interested in rearing cockerels should study the following Departmental bulletins, each of which deals in greater detail with certain important features of the poultry industry:—

No. 2120—"Deep Litter for Poultry"—Part 1.
No. 2145—"Deep Litter for Poultry"—Part 2.
No. 2157—"Care of Chickens."
No. 2002—"Planning Boosts Poultry Profits."
No. 1041—"Control of Intestinal Round Worms in Poultry."
No. 2069—"Some Poultry Pests."
No. 2168—"Coccidiosis—A Hazard of Chicken Rearing."
No. 2283—"Fowl Pox."



UNBRANDED SHEEP

Despite earlier warnings, unbranded sheep have continued to be forwarded to the Midland Junction Saleyards as well as to metropolitan and country meatworks.

Consignments of unbranded sheep have recently been required by inspectors to be withdrawn from sale and returned to the properties of the owners and a number of prosecutions are pending.

Owners are again reminded that sheep must be branded with a registered wool brand immediately after shearing and that it is an offence under the Brands Act to remove unbranded sheep from any property and to sell or offer for sale any sheep which do not bear a registered wool brand which is distinct and legible.

The provisions of the Act will continue to be enforced and it is emphasised that sheep must be wool branded, not only when they are forwarded to saleyards, but also to meatworks for slaughter.

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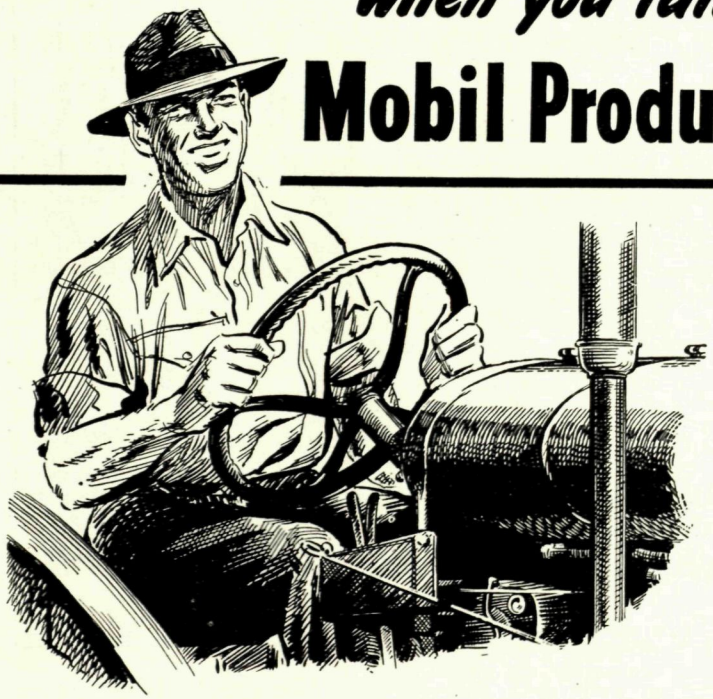

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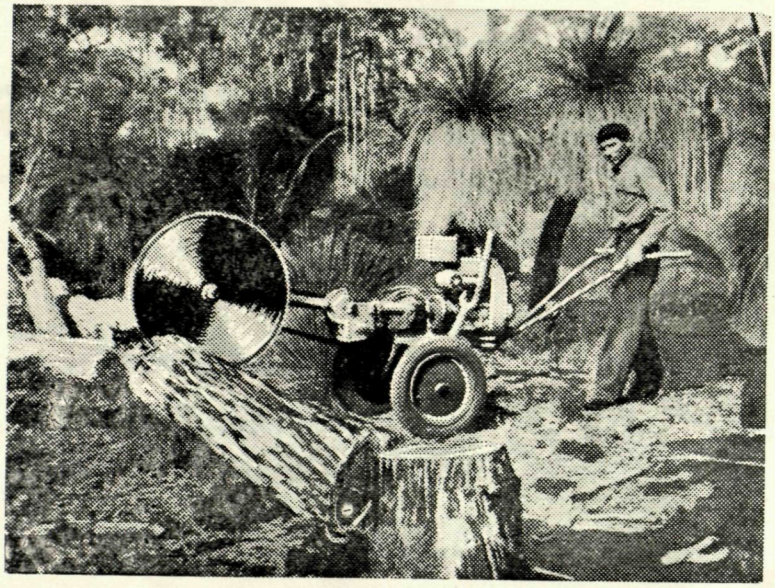

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BOOKS... *for FARMERS*

THE following books on agriculture have been added to the stock of the Library Board of Western Australia, and can be borrowed freely from any public library associated with the Board.

GENERAL

ADVANCES IN AGRONOMY, prepared under the auspices of the American Society of Agronomy. Vol. 6. N.Y., 1954.

THE ROMANCE OF THE AUSTRALIAN LAND INDUSTRIES, by R. D. Watt. Syd., 1955.

AGRICULTURAL ECONOMICS

CONTEMPORARY READINGS IN AGRICULTURAL ECONOMICS, edited by H. G. Halcrow. N.Y., 1955.

THE STATE OF FOOD AND AGRICULTURE, 1954: REVIEW AND OUTLOOK. Food and Agriculture Organisation of the United Nations. Rome, 1954.

FARM MANAGEMENT

THE FARM AS A BUSINESS. Great Britain. Ministry of Agriculture and Fisheries. Lond., 1954.

FARM BOOKKEEPING, by L. W. Shears. Melb., 1954.

THE FARMERS AND GRAZIERS' HANDY BOOK. Vol. 4., compiled by J. V. Bartlett. Adel., 1950.

AGRICULTURAL MACHINERY

THE FERGUSON TRACTOR, TYPES TE-A20, TE-C20, TE-D20, and TE-E20. Harry Ferguson of Australia Ltd. Rockdale (N.S.W.), 1952.

MAINTENANCE OF HORTICULTURAL EQUIPMENT, by P. A. Reynolds. Lond., 1955.

CROP MANAGEMENT

AGRICULTURAL PROCESS ENGINEERING, by S. M. Henderson and R. L. Perry. N.Y., 1955.

BURRAGE ON VEGETABLES, by A. C. Burrage. N.Y., 1954.

FARM GRAIN DRYING AND STORAGE, Great Britain. Ministry of Agriculture and Fisheries. Lond., 1954.

GRAIN CROPS, by H. K. Wilson. 2nd ed. N.Y., 1955.

PLANT PROPAGATION, by R. C. M. Wright. Lond., 1955.

PLANT REGULATORS IN AGRICULTURE, edited by H. B. Tukey. N.Y., 1954.

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