

will show that this type of roof will give as much protection as a lean-to roof finishing flush with the front wall and fitted with a sloping hood (see Fig. 6). The former type has other advantages: It is simpler to construct and carries all the roof water to one drainage channel at the back. Heavy and continuous drip from a front hood causes more dampness inside than rain, besides making a mess all along the front wall of the shed.

In large sheds the difference in cost between a lean-to roof and a ridge roof is negligible. In fact the ridge roof can be cheaper, as it can be made largely self-supporting, requiring less timber for floor supports than a lean-to roof covering the same floor area.

Timber sizes and wall and roofing materials are a question of carpentry and outside the scope of this article, but what can be used will be governed largely by local building regulations. Types of floors—earth, concrete, or wood—are also controlled by by-laws. Concrete foundation walls should be sunk at least 18in. below ground level as a vermin control measure and all wooden floors should be at least 12in. above ground level so that cats and small dogs can catch rats under them.

Multi-story House

A development new to this country but well proved overseas is the multi-story laying house. There are at least four of this type around Auckland and all are working well. Where land is scarce, as it often is on a suburban poultry farm, serious thought should be given to replacing obsolete multiple-unit sheds with a compact, two-story house. Even where electric hoists have to be installed and lorry ramps built the two-story house still merits serious consideration.

Most of the foregoing recommendations apply also to brooder houses. As ample head room is, or should be, provided, air space per bird is not so important, as small chicks have small oxygen requirements. However, chicks grow rapidly and their needs must be met by expanding air space, and floor, brooder, and feeding areas. It is possible to work backward from the adult capacity of a shed to its chick capacity, but the two classes should be provided for on separate bases.

With the brooder 7 sq. in. under the canopy should be allowed for each chick. Within the brooder house $\frac{1}{2}$ sq.

ft. of floor space per chick should be provided. By the eighth week, when the brooder is no longer in use, the floor space per bird must be $1\frac{1}{2}$ sq. ft. The farmer can understock a shed with chicks at first so that they "grow

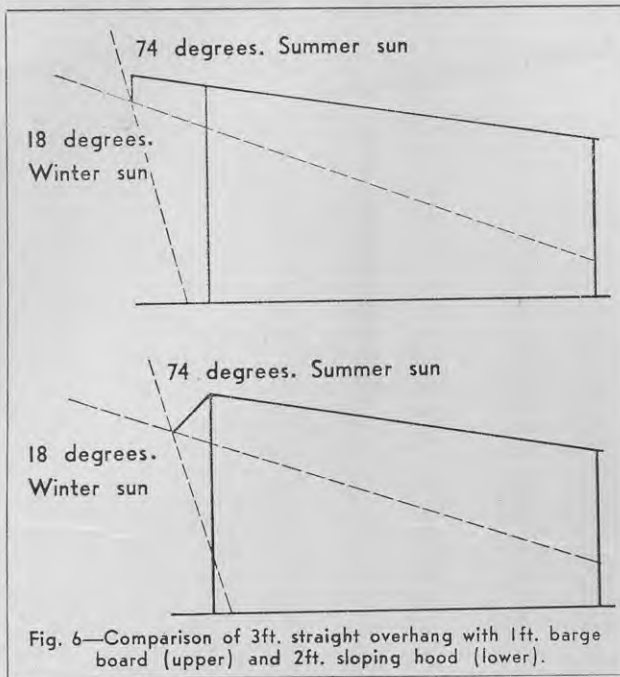


Fig. 6—Comparison of 3ft. straight overhang with 1ft. barge board (upper) and 2ft. sloping hood (lower).

into it" or he can stock a shed almost to capacity at first and then reduce the number of chicks as the birds grow.

The choice will depend on circumstances, but the first alternative should give better chicks, because at no time during their rearing should they have been overcrowded.

As temperature control is important, some means of closing the open front of the brooder shed must be adopted. Shutters, screens, and blinds all work reasonably well. A point often raised is: How open can the front of a brooder shed be? In fine, sunny weather there is no reason why it cannot be open down to floor level, but as the temperature becomes cooler during the afternoon the bulk of the open front must be closed. This is best done by a system of large hinged shutters arranged to swing outward like doors. They should be from floor level to about half-way or more up the front. These shutters can be used successfully on adult housing. Like laying sheds, brooder sheds should face north to obtain the maximum benefit from the sun. Again, what is used in their construction is a carpenter's problem, except that certain standards are set by local body by-laws.

Any outside runs provided must be regarded as additional to the space requirements for birds already outlined. Overcrowding and poor ventilation take their heaviest toll at night, when all the birds are inside the house, and not during the day when many of the birds may be in an outside run.

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