their diet. Two groups were fed dry mash and pellets respectively ad lib. and another two groups dry mash and pellets respectively restricted to 4½oz. per day.

The factors taken into consideration in assessing results were total egg production, income from eggs less food costs, gross profits, body weights, moulting, and broodiness. In the first two ad lib. groups there was no significant difference in egg production. It was mainly in carcass values that they differed at the end of the period, the birds fed on pellets showing a gain of approximately 1lb. per bird over the group fed dry mash ad lib. In the second two groups, however, there was a great difference in the cash returns, the group receiving 4½oz. of pellets being far superior to that receiving a similar quantity of dry mash. The gross profit was more than double.

To verify the results the experiment was repeated for a second year and the same difference was apparent. Some of the mash was bound to be wasted in the water and it seemed probable that birds fed 4½oz. per day actually would receive only about 4oz., which would be barely sufficient for maintenance. No pellets were wasted and pellets were eaten in an hour after the daily feed.

This experiment was carried out when egg prices in Britain were uniform over the year, but Dr. Blount, the instigator, pointed out that with seasonal variations in egg prices there would be a difference in profit shown between the first two ad lib. groups which was not apparent when the experiment was conducted. The pellets appeared to favour the production of early eggs, which from late-spring-hatched birds meant eggs laid in winter, when egg prices would be highest.

In the pellets ad lib. group, in which the stimulus to egg production was greatest, more eggs over 2½oz. were produced; in fact the percentage was three times that of the lowest restricted mash group. The percentage of cracked and shell-less eggs was also greater in the pellet ad lib. group, and under other conditions than battery laying cages the tendency to egg eating would be increased.

Less Conclusive Results

Experiments carried out at the National Institute of Poultry Husbandry during a similar period (1947, 1948), also in battery cages, produced less conclusive results. The birds used were 232 six months' old Rhode Island Red x Light Sussex pullets and were divided into 6 groups: Dry mash ad lib., wet mash ad lib., pellets ad lib., dry mash restricted to 4½oz. per day, wet mash restricted to 4½oz. per day, and pellets restricted to 4½oz. per day.

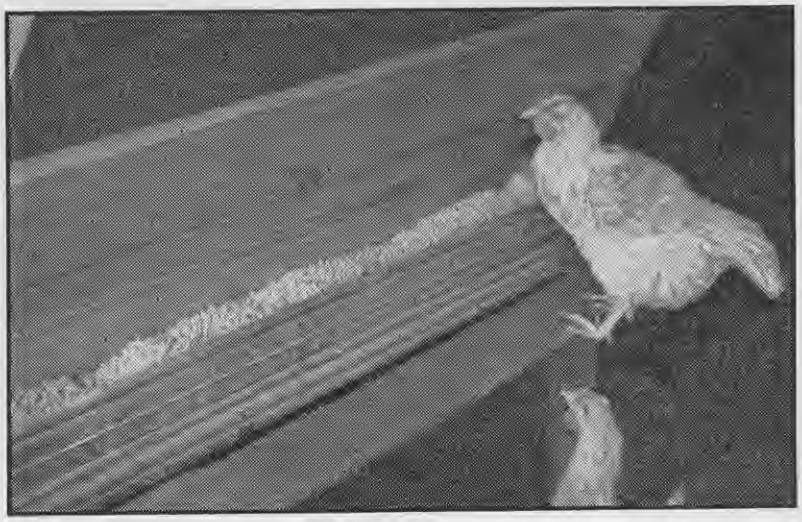
Dr. H. Temperton the investigator commented in his report:—

"Of the birds allowed unrestricted access to the diet those receiving dry mash had the lowest total cost of production per bird, followed by pellets and wet mash. The pellet fed birds produced more eggs than those fed dry mash, but the difference in returns was not sufficient to offset the higher cost of production, the difference in net profit in favour of the dry mash group being 3.2d. per cage. In contrast the wet mash group had the highest production cost and the lowest return, the difference in net profit per cage compared with pellets and dry mash being 8s. 2d. and 8s. 6d. respectively.

"In this experiment the consumption of pellets in the ad lib. group exceeded the dry mash group by about 12 per cent., whereas in the B.O.C.M. experiment the difference, though negligible, was in the other direction.

"When the amount of food was restricted a reduction in profits resulted in each case, but in the case of pellets the reduction was only half that for dry mash and a quarter of that for wet mash.

"From this experiment it appears that there is little difference in the effects of feeding dry mash or pellets ad lib., but in this instance both were markedly superior to wet mash."



Pellets fed in a hopper.

Factors to be Considered

The use of pellets prevents poultry farmers from compounding their own rations and they are unable to vary the diet except by providing meat meal or whatever may be required in a separate trough or hopper. Although manufacturing firms may claim that use of pellets prevents birds from unbalancing their diet by picking out individual ingredients from the mash, it is rarely that such unbalancing occurs or has any serious effect in practice.

Poultry certainly appreciate the palatability of food in pellet form, and during the pullet year, when the birds should be producing heavily, there is little danger of their consuming too great a quantity. However, if the flock includes second- or third-year birds some restriction would be necessary to prevent their becoming overweight.

During the shorter, winter days, when egg prices are highest and the birds require to take in extra food to maintain body temperatures, it would seem that pellets demonstrate their greatest advantage, as the birds are able to take in all their requirements in the shortest possible time.

Pellets may be fed as a morning or evening feed alternating with grain, in which case meat meal would have to be provided in a separate hopper. They also may be used in place of dry mash fed ad lib. Where artificial lighting is used during winter, pellets may be provided as the extra feed, and the hoppers opened in the evening may be closed by the attendant on his first trip round in the morning.

Fish oil may be supplied by mixing it into a small percentage of wheat or other grain, which in turn is mixed with the pellets for trough feeding. Where the system of management is to feed pellets ad lib. the most practical method of supplying fish oil is in grain, which must be trough fed or mixed with greenfeed. Alternatively pellets containing full vitamin requirements for laying stock may be bought.

A disadvantage of pellet feeding may be that birds can fill their crops in a very short period and have time to get into mischief, such as turning their attention to cannibalism or egg eating. Where the diet is somewhat restricted birds become more occupied in scratching about in the litter.

A definite point in favour of feeding pellets is the ease and pleasantness of distributing the feed. Pellets are labour saving and clean and there is very little contamination of litter or water troughs. They are easy to handle during windy weather.

Chick pellets or crumbs are perfectly satisfactory for feeding to chickens in place of their mash ration, and growing pullets may be fed on growers' pellets where these are available. The change to growers' pellets should be made gradually from the time birds reach 6 to 8 weeks of age.

In whatever form food is presented it must be palatable. It must provide no more fibre than is necessary to promote easy passage of food through the alimentary tracts and must furnish sufficient nutrients in correct balance, supplemented with minerals and vitamins, so that not only is the bird maintained in good health, but it is able to produce from raw materials the maximum number of eggs of which it is capable.