

MANAGEMENT OF BREEDING-PENS.

The management of breeding-birds is of paramount importance. In the first place they should not be forced for eggs. The ration should consist chiefly of a variety of whole grains. The greater the variety in this respect the more fertile eggs will be produced, the stronger will be the germs, and the more easy will be the chickens to rear. It must be remembered that a chicken is built up of many constituents, and the food provided to the parent birds must contain those elements which are necessary for the formation of a properly developed chick. It is well known that the best hatchable eggs, and those which produce the strongest chicks, come from fowls which have a free range. If we could dissect a hen's crop after a day on free range we would not find any one particular class of food, but in most cases there would be a naturally balanced variety of different seeds, green-stuff, worms, and other kinds of insect-life.

On no account should breeding-stock be coddled. Strong, hardy chickens can only come from hardy parents. Where a good range or large run is available they should have access to it at all times, quite regardless of weather conditions. Of course, it must not be inferred that comfortably roomy houses, where the birds can exercise in comfort during extreme weather and when they prefer to remain indoors, are unnecessary. Indeed, the great bulk of the ration provided should be fed in deep litter to induce the birds to exercise, as a means of preventing fat-formation. Do not forget an abundance of green food; no bird can be maintained in a proper breeding-condition without it.

Care should be taken that the male bird does not get run down. He should be frequently dusted with a good insect-powder as a means of destroying parasitic life. If good dust-baths are provided the hens will usually keep themselves reasonably free from body-lice, but in the case of the male it is entirely different. He should be maintained at the top of his form at all times. When the bulk of the ration is fed in litter the male as a general rule will not scratch for his food to the same extent as the females, and as a result is apt to rapidly decline in weight. Where possible it is a good plan to remove the male from the hens and give him at least one good meal a day by himself.

THE TIME TO HATCH.

It should be the aim of every poultry-keeper to secure a fair supply of autumn and winter eggs. In order to secure these the pullets must be largely depended upon, and they must be hatched neither too early nor too late. In a general way, for the heavy breeds such as Orpingtons, Wyandottes, &c., July and August are the most suitable hatching-months, and for the lighter breeds August and September.

—F. C. Brown, Chief Poultry Instructor.

THE APIARY.

WINTER FOOD-SUPPLIES.

As advised last month, the bees should require no further attention until the spring. If, however, the beekeeper has any reason to fear that his bees are in danger of starving they should be given a block of sugar-candy, unless combs of honey or candied honey from colonies known to be free from disease are available. Instructions for making sugar-candy were published in the August, 1922, issue of the *Journal*.

RENDERING WAX.

If the season's accumulation of wax has not already been melted up this should be attended to without delay, and the wax sent to a manufacturer of comb-foundation to be made up. If there is any quantity of wax to be melted up a wax-press of some description should be obtained—there are several good makes stocked by dealers in beekeepers' requisites. The press is necessary in dealing with large quantities of wax owing to the retention otherwise of much of the wax by the slum-gum, which is made up very largely of the discarded cocoons of successive generations of larvæ. Wax obtained from cappings or combs that have not been used for brood-rearing will not contain much foreign matter.

In the absence of a better equipment, wax may be readily rendered in a kerosene-tin on the kitchen-stove. Place the pieces of comb or cappings to be