

must be of the best quality; cheap or inferior oil causes bad results and bad temperatures. Much depends on the lamp; have this in perfect burning order always, and success will follow. The regulating system must be steady and accurate before an egg is placed in the drawer. It is bad work to start a machine and place eggs in it as soon as the temperature rises to 103 deg. F.; wait for twelve or twenty-four hours to test the steadiness of your regulator.

The proper heat to incubate eggs is as near as possible 103 deg. F.; a little lower, 101 deg., is about the correct temperatures for machines that have tanks over and below the egg-drawer. The instructions sent out with each machine generally give full particulars how to manage and run the incubator properly. Yet there is one thing that some of these instructions do not give, and that is the conditions under which the incubator should be run when placed in a room that is very irregular in temperature. Of course, they all say, "Keep to proper temperature," but that is the difficulty. For instance, you regulate the lamp in the morning; it keeps an even 103 deg. up till (say) 7 or 8 p.m.; then the outside night temperature lowers it to 98 deg. or 99 deg., and in some cases you will find the thermometer in the early morning registering only 75 deg. or 80 deg. Of course, this does not happen to all machines or rooms either; still, one of our best incubators has this fault, for it is made of very light material—in fact, built for a perfect incubator room. Now, we all cannot afford to build rooms with little variation of temperature, so the next best thing to do if our machine falls in temperature during the night is to cover it with rugs or blankets of sufficient thickness to keep the eggs at the proper temperature.

The following temperatures will be found useful to those who use incubators:—

60 degrees F. is the best temperature to keep eggs for setting.

85 degrees F. will start the circulatory system.

95 degrees F. will start the germ growing, and show red blood colour in egg.

120 degrees F. will kill the germ of a duck or hen's egg.

Too low a temperature produces addled eggs; too much heat produces dead birds in egg; and bad ventilation, damp room, too much moisture, uncertain and bad results.

In selecting eggs for the incubator, choose those of a normal size, good shape, as fresh as possible, and from strong, vigorous parents. It is only wasting time, labour, and money to try to hatch a good percentage of healthy chicks from weak parents. The older the eggs the later and more irregular the hatch; the fresher the egg the earlier and more regular the hatch. A week or ten days is the longest eggs should be kept, though eggs will hatch after being kept thirty days if their temperature has not varied much from 60 deg. The strength of the germ weakens after the egg has been kept ten days; besides, it may die in the egg before incubation starts, just as it often does after incubation has commenced.

The Grazier and Breeder.

WINTERING CATTLE.

The profits of the dairy industry have been so large this year that it is to be hoped farmers will treat their cattle during the coming winter months with even a greater care than usual. It must not be forgotten that next year's flow of milk will depend in a large measure upon the condition in which our cows will be when coming out in the spring. "Well wintered is half summered" is the old saying. To winter well, not only good and liberal feeding are necessary, but also good care and good quarters. If the latter are defective, it will certainly not be a waste of time to work at their improvement before the winter sets in.

What constitutes an ideal cow-house? That the cows should be warmly kept while the winter storms are raging out of