Left—Test and check thermometers and capsules. Right—Fumigate with these ingredients before and during every hatching.

Examine the electrical equipment and see that there are no loose connections or frayed wires. Be sure that the cut-outs are in good working order and not clogged with fluff. If capsules are employed, as they often are, test them in warm water. Test the tension of the belt between fan and motor and, if lubricators are provided on the shaft, then use them. Most electric motors have sufficient lubrication packed in the bearings to last the life of the motor, or else the bearings are of a type which do not require lubricating. Some oil or grease on the fan shaft will do no harm.

Examine the testing lamp, replacing the padding round the opening, if it is worn. Those who carry out custom hatching will require a good supply of small cards of various tints for labelling the different customers' eggs.

While flat-top incubators require different treatment, cleanliness and neatness of the incubator room are still essential.

Testing Capsules

A flat-top machine should be stripped down until it is a mere shell, and everything taken out should have a thorough scrubbing. The control mechanism, usually consisting of one or two expanding capsules or wafers and a system of rods, should be dismantled and the capsules tested in warm water. This is to make certain that they expand on warming and do not leak.

A leaking capsule will give off a strong smell of ether, a volatile and inflammable liquid. Do not test a capsule by holding a lighted match to it. Endeavour to obtain some spare capsules. These have been in very short supply in the last few years, but the position is now easier.

When testing capsules, test the thermometers at the same time, using a clinical thermometer or one which is known to be accurate. While it is preferable for a thermometer to register the correct temperature, an inaccurate one may be used, provided it gives **a constant error.** A thermometer which registers consistently 1 deg. lower, for example, is quite satisfactory to use, because due allowance may be made for this constant error. Avoid using a thermometer the readings of which fluctuate. If wet-bulb thermometers are used, test them by comparison with a known accurate thermometer and make sure the cotton strands or wicks around the mercury bulb are in good order. These strands sometimes become covered with a mineral deposit which affects the rate of evaporation of the moisture, giving a false reading. Always use distilled water or rain water for wet bulbs and avoid this trouble.

If it is possible with a hot-air or hot-water machine to remove the flat top, do so. In this way access to the air ducts or hot-water pipes is provided. The air ducts should be clean and free from blockage of any sort. The hot-water pipes will require emptying and swilling out thoroughly with a strong solution of washing soda and hot water to remove any rust or scale which may have formed inside. This work may be done by a repeated flush, or the pipes may be filled and left to stand for some hours—followed by a thorough rinsing.

While the top is off, clean all the soot away from the boiler, both outside and inside, and satisfy yourself that the lamp flues and chimneys are clear of soot, and, most important, fit snugly together without leaving air leaks and draughts in the wrong places. Mica windows should be cleaned by using rag moistened in kerosene or replaced with new mica. The only way to prove that an oil lamp is burning correctly is by observation through a draught-proof window. While attending to the lamp and flues, replace all used wicks with new wicks of the correct size. It is false economy to use a wick for more than one season, as an old short wick can never be relied on to give an even burning flame.

Assemble the machines together, making certain that everything is in its correct place and that all moving parts may move freely. It is essential to check that the machine is absolutely level, thus avoiding any high corners which would run unduly hot. Always give an incubator a trial run before placing the first setting of eggs in it. As an incubator dries out during the period when it is not in use, run it at the correct working temperature for several days before the hatching season starts and provide plenty of moisture in the moisture trays. Excessive drying off of the first eggs put down in the machine will not be apparent if this is done.

A wise precaution, and one which should be standard practice, is to fumigate any incubator before each hatch. This is simply done by placing a dish of Condy's crystal (potassium permanganate) inside the machine and pouring on some formalin. Formaldehyde gas which is generated is extremely efficacious in the control of pullorum infection of chicks while they are still in the incubator.

Your local Poultry Instructor will be pleased to furnish full particulars of the technique involved and the correct amounts of chemicals to use: these vary with the size of the incubator. As a matter of general interest the proportions per 100 cubic feet of air space in the incubator are as follows:

Formalin: 35 cubic centimetres, or 24 grammes.
Condy's crystals: 17.5 grammes.

Take care not to inhale the formaldehyde gas as it has unpleasant effects.