

and yet show both G and H. See the following notes which explain why such eggs are found.

Fig. 3, shows a stale egg, a clouded egg, a doubtful egg. A stale egg is generally distinguishable by the air space E, being very large on the fifth or sixth day, as shown in fig. 3, though all stale eggs do not show a very large air space; but when an egg does show it, it is very good proof the egg is stale. When an egg shows a clouded, muddled appearance as indicated by D (which generally moves about when the egg is turned before tester) it is certainly stale, and will not hatch. Do not confound the fresh egg which is not fertile with the stale egg; in an infertile fresh egg you can see the yolk, which will look somewhat darker than the rest of the egg, but does not look muddled.

Fig. 4, shows a live egg on the sixteenth day. K, is the space occupied by the chick. The lines I and J, show the air bulb, which may be on top or at the side, as indicated by the respective lines. This is about the average air space in the sixteenth day, but it will vary according to the thickness of the shell and age of egg when set; then, some eggs are not as full as others. At this stage of incubation (sixteenth day), a live chick darkens the egg, except the air bulb, when seen with the tester, and by watching the lines I and J the chick may often be seen to move.

Eggs should be tested in a warm room one tray at time.

The chick is harder to see after the seventh day, because the egg becomes more clouded by the growing chick.

NOTE.—In regard to G, in Fig. 2, "a partially fertilized germ" means one that from one of several causes was not strong enough to live and grow. Among those causes are cocks that are too old, an insufficient proportion of male birds for females; old or debilitated hens, or over fat hens, too close confinement of breeding stock, etc. Again you may find (G, Fig. 2) among eggs which you believe or know are not over a week old, and ordinarily the eggs were good and fertile. It frequently happens that an egg will remain in the nest, while several, or may be a dozen hens lay there, and the succession of layers keep the eggs warm enough to start incubation, or it may happen that some eggs may have been subjected to a heat of 100°, in some warm place, unknown to or unnoticed by you. In either case, these eggs are taken from the nest or warm corner to a cooler place, and kept a few days, or over-night, until a

sufficient number has been accumulated to set, they become cold, and the germ dies before they are put under the hen or into an incubator.

In testing the first time, at the fifth or sixth day, a dead germ may be mistaken for a live weak germ, and if left in the incubator for three weeks would decay; so it is always best to test the egg again on the tenth day, and remove all that have been marked doubtful and prove not good.

Some persons think it is just as well to leave all of them in until hatching is finished. But this is not right, the decaying eggs generate objectionable gases, and if broken are very offensive. A dead egg or an infertile egg, does not contain the animal heat that live ones do, and are apt to have an undesirable effect upon the next egg to it either under the hen or in the incubator. An infertile egg—one which has not been impregnated, and in which life will never start or develop—is dead when shown at the tester. This egg under the powerful hens of a first class tester will show the yolk which must not be mistaken for a doubtful or fertile egg. Use only the best egg-tester.

S. J. ANDRES.

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### HAMPSHIRE-DOWNS.

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A small flock of our favourite breed of sheep, the *Hampshire-Down*. Imported by the Hon. Matthew Cochrane, Hillhurst, Compton, Que. Ed.

*Dorset-horns*.—The well known producers of early lambs. These ewes often lamb before Christmas, and are excellent mothers. When fattened, we have had them weigh; and not overfat either; 13 stone, i. e. 104 lbs. Mr. Cochrane has had the originals of this photo, for some years, but the *Hampshire-Downs* are a recent importation. Ed.

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HILLHURST STATION, May 5th, 1899.

DEAR MR. JENNER FUST,

In reply to your favour would say the *Hampshire Down* Ewes (10) were bought at Haynes Park, Bedford, from Mr. W. B. Greenfield's *Hamsteadbury* flock. The sire of the lambs was a lamb of 1898 bought from Mr. Edward Whalley-Tooker, Hinton, Horndean, Hants. This *lamb-ram* weighed 175 lbs. when landed at Quebec in October last.