

developing chicks breathe through the shell, they must take such an atmosphere as envelopes the eggs. The question then is this: Have these various substances any effect in preventing, arresting, or enfeebling the development of the chicks, or in making them less hardy when hatched? Will some of those who have had experience in hatching chicks both with and without their use, reply, keeping as closely to actual *experience*, even to exact quantities of vermin destroyers used, as possible. I may myself have something to say later.

Truly yours,

SCIENCE.

["Science" opens the way to us for a few further remarks on this most interesting subject. First, as to the temperature in which the eggs were kept after being removed from the incubating parent. The time was about 9 p.m., the temperature in the house being, we should say, about 60, and as we immediately closed the door and partly closed the window, the temperature would not drop more than 5 degrees. The eggs were returned to the nest about 7 the next morning. As the bird remained on the nest all night on "dummy" eggs, the eggs would receive a certain degree of heat from *beneath* as well as above from the body of the sitter. This may be of some importance, as of course active vitality would be restored in a shorter space of time.

Another instance of almost equal interest came within our immediate notice a few days since. The facts are as follows: Not having time in the morning to attend to the wants of our very numerous feathered family, a good deal of this duty devolves on our "better half," as we have found that one to properly attend to pet stock of any kind, must take an interest in them; and this the above-mentioned b. h., we are happy to say, does, and a lively interest, too. We set two hens on, say the first of the month, on Pekin ban-

am eggs, giving 10 eggs to each hen; on the fourteenth day on coming home at 7 p.m., to our chagrin we found one of the hens *shut off* her nest and not a particle of (apparent) heat in the eggs. She had been left off to feed at 9 a.m., and had been inadvertently closed off her nest for ten hours, when we, wishing to test the case, replaced her to sit her full time. Well, time went on, and on the close of the nineteenth day the eggs under the hen who had sat steadily began to hatch, but not a sign of the others. A failure this time, sure we thought. But we left them undisturbed, and on the evening of the 20th day when the others had all escaped from the shells we noticed three eggs "chipped," and within twenty-four hours *ten* strong chicks greeted us. They took exactly one day longer than the other clutch, or *2 2-5 hours for each hour that incubation had been delayed out of the regular course*. The day was a warm one, the temperature probably averaging 65 to 70 in the house. This, Mr. "Science," is no theory, but *actual fact*.

As to the extreme heat an embryo can stand, we ran an incubator up to 110 this spring and then hatched 25 per cent. Our opinion is that an embryo chick can stand a much greater degree of cold than of heat.

As to disinfectants, we never dream of setting a hen without using some of one kind or another. Last season we used tobacco stems, two good handfuls on the bottom of each nest, and over that hay or straw. This year (the early part) we used hay entirely, with a strong dusting of Pyrethrum powder, also called Dalmatian insect powder and other names—about  $\frac{1}{4}$  ounce on say  $\frac{1}{2}$  lb. hay, on a floor space of 96 square inches. During the extreme heat we have been using a foundation of pine saw-dust one inch deep, with straw substituted for the hay, but with the same or a larger amount of the

powder. In addition to this, on the day before the eggs are due to hatch we turn the sitter on her back and give a thorough dusting all over with the aid of a powder bellows.

This we have never found to do the chicks the slightest amount of injury; on the contrary they always hatch free from vermin and strong and hardy. We have never used sulphur as we consider the fumes would be too overpowering, not to the chick prior to hatching, but immediately after. On this point we are, of course, open to contradiction. The egg before incubation is certainly sensitive to outside influence, as we have, alas! oftentimes found out to our cost, in trying to masculate a *musty* fresh egg. These terms may sound contradictory, but such is not the case. An egg laid in a damp, musty nest will have a distinct and unpleasant flavor which you will not be slow to discover.

We cordially invite free discussion on these subjects—ED.]

#### CONCERNING EGGS.

If the saying is correct in regard to persons that "familiarity breeds contempt," it can with equal force be applied to articles and commodities, eggs being one of those common commodities which are apt to be neglected and undervalued, alike from a commercial, dietary, and medical point of view. As an article of commerce on the part of producers, who are mainly the farming community, eggs most certainly do not receive that share of attention in this country to which they are entitled. Grain-growing, which formerly formed one of the principal items of the farmer's income, is by no means what it used to be in value. Potatoes too have for several years failed to "turn the hand" of the farmer. In fact many farmers have been driven to fall back on the dairy produce and the poultry yard to make up their leeway; and, be it known, these are means