

the chickens at all times from rats, &c., which the natural mother cannot do, as many of us know to our cost. Her sheltering wings are always ready to receive her charge, which is not so with the hen. Who has not seen a hen dragging her brood through the damp and wet until the little ones cry lustily for shelter, and the result often is weak legs and cramp, and a loss of some of the finest chickens. Nothing of this occurs with the hydro-mother. She makes no fuss when you go to admit her charge, and rears them to become quite tame and manageable. The following letter appeared in "The Field," a well known English paper, in May last, from Mr. William Cunard, who has two of Christy's Hydro Incubators in use, which speaks for itself:—

"In the *Field* of the 22nd inst., under the heading, 'Result of Artificial Incubation and Rearing of Poultry,' you refer to a letter from the Hon. H. R. Peel, in which he says he has lost two-thirds of the chickens which had been put under an artificial mother. I believe it is now pretty generally admitted that it is practicable to hatch the eggs in an incubator; but there is an idea that it is much more difficult to rear them without hens; in fact, you say, 'The profitable rearing of chickens in large numbers, without the aid of hens, we have not admitted, inasmuch as it has never as yet been demonstrated.'

"My experience is that the Artificial Mother is even a greater success than the incubator. On April 10th we put 65 chicks under an Artificial Mother; they are about 7 weeks old, and there are now sixty-three healthy chickens living. We had almost the same success in March. I think that the incubation of chickens has in the last few years been so much improved, that before long the importation of poultry and eggs from France into this country will be materially diminished. I purchased two of Christy's Hydro Incubators this spring, with all the latest improvements, and placed them in charge of a woman who had never seen such a thing before, and I must say she has been most successful both in hatching and rearing. I have had a good deal of experience in the management of poultry, and I have satisfied my mind that much more can be done with the incubator and Artificial Mother than with the hen."

W. CUNARD.

Lebanon House, Twickenham,
May 27, 1880.

There is no reason why chickens should not be hatched out and raised in this country in January and February as well as in April and May, provided certain rules are followed, and with an ordinary amount of attention. I might say that among the advantages of the incubator itself over the hen are the following, viz., early hatching when broody hens are scarce, and at a time when suitable to yourself, also the loss of eggs from breakage on the part of the hen is avoided, and last but not least, what I have mentioned above, the entire absence of vermin. I understand that a large breeder in the United States hatched out last year 44,000 chickens in this way, and success-

fully raised them. In France in 1879 Messrs. Rouillier hatched out and raised 42,000 chickens.

I paid my first visit to the Incubator yesterday evening, it being worked by Messrs. J. & C. McLellan, Edward St., not having leisure to attend to it myself. During the evening five chickens hatched out and about seven eggs were slightly cracked, having living chickens, which would hatch during the night. Messrs. McLellan state that they would have been much more successful had they been able to obtain all the eggs at one time, but on account of the scarcity of eggs they had to set them at different times, which is a disadvantage.

THE *London Agricultural Gazette* of 31st January publishes the following letter from J. B. Lawes, F. R. S., LL. D., the celebrated experimentalist of Rothamstead:—

The *Agricultural Gazette* of January 17, contains an article upon the efficacy of gypsum as a manure for red clover, and in it refers to the result of some experiments at Rothamstead, published twenty years ago. Red clover has continued to grow upon the garden soil at Rothamsted up to the present time, both upon that which is wholly unmanured, and also upon that receiving gypsum; there is more produce upon the gypsum plot than on the unmanured, but less than there is upon the plot receiving alkaline salts.

If gypsum acted as a medium for obtaining ammonia from the atmosphere, it ought to be a better manure for the cereal crops than for clover. Such, however, is not the case.

I am disposed to think that the action of gypsum is due to its supplying both sulphur and lime to the crop; and that it may also liberate and make more available some of the organic compounds of the soil. It has been proved that the leaves of clover contain a large amount of sulphur as such, which sulphur is burnt away, and not found in the sulphate of the ash. In a soil rich in decayed vegetable matter, all the important ingredients taken up by clover may be in excess as compared with sulphur and lime; in such a case the application of gypsum may produce the wonderful results we read of in the United States. A few years ago when the agriculture of the States was in a distressed condition, I came upon a remark, made by a farmer in one of the journals devoted to agriculture, to the effect that farming was generally prosperous where gypsum produced good crops of clover. The soils upon which the gypsum produced such good results must either have been naturally very fertile, or there must have been large reserves of fertility stored up in them.

The want of special knowledge, with regard to the food available for the clover plant in the various soils in this country, makes the success or non-success of an application of gypsum a mere matter of speculation; and, while I fully appreciate the value of red clover as an agricultural crop, I am disposed to think that it has obtained credit for certain qualities to which it can lay no just claim.

If a householder finds the food in his larder or the beer in his cellar disappearing in an unaccountable manner, he is apt to think that someone has taken them; and however much those who have access to the larder or cellar may protest, and appeal to their previous good character, he may still have his suspicions. I own to have somewhat of a fellow feeling with the householder, as regards my position and that of the red clover in the garden soil. I find that an immense quantity of the nitrogen has been abstracted. I also know that the red clover does consume a large quantity; indeed, the fact is admitted by the plant, but at the same time it protests that not one particle was taken from the soil; asserts that the whole was taken from the atmosphere; offers to call M. Ville from Paris in support of this view of the case; takes its stand upon previous good character, and appeals to all the science and practice of the world for testimony in its favour!

What am I to do? the nitrogen is gone, and no other plant has had access to it but the red clover! Possibly it may have been wrong to expose the plant to temptation in the form of a large store of its favourite food; but I may say in justification that it absolutely declined to live in my service under any other conditions.

In the Return of Cattle within bounds of the Halifax County Agricultural Society, the list of the Jersey Herd belonging to Mr. G. W. Boggs, Bedford, is not fully given. The following is a correct list:

Maid of Orleans, 6.
Mermaid of St. Lambert, 7.
Cowslip of St. Lambert, 8.
Sultana, 9.
Little Buttercup, 10.

Mr. E. E. McNUTT, of Truro, N. S., has issued a Descriptive Circular of Thoroughbred Brown Leghorn Fowls. He evidently thinks Nova Scotians have not caught hen fever. He advises people to get the "non-sitting breeds," such as Leghorns, Spanish or Hamburgs. The Brown Leghorns he thinks best, as non-sitters, consistent layers, and noted for early maturity, the chicks being fully feathered at a month old, the cockerels crowing at six weeks, and the pullets laying at four or five months from the egg. Mr. McNUTT offers eggs for sale at \$1.50 for a setting of 13.