

result was the same—eggs non-fertile and non-vital. The birds were first-class as to points and plumage, but feeble as to constitution.

I have named the eggs as non-vital and non-fertile. Let me explain, for the benefit of beginners in our "glorious profession" (Aside—I believe that is the orthodox adjective.) Non-fertile eggs never had life; non-vital had life, but abortion was the result of attempted hatching. After about ten days hatching or setting, examine the eggs by holding them before a lamp encircled with the thumb and fore finger; the non-fertile egg will be clear to the eye, the non-vital will be cloudy, more or less—more or less according to the duration of life in the vital germ. Some live a few days, others extend all the way up to full development, so far as the eye can detect, and are found dead in the shell. But life and death have happened in the shell when only a dark, strong fluid is found there. Died in the shell is as true of the germ that just lived to die as when just ready to chip the shell the chick proved an abortion. If I am incorrect in my definition, &c., let some one correct and instruct me.

The general cause of this state is artificial breeding—or in-breeding—and over-feeding. By over-feeding I mean not only too much, but too stimulating. My young friend, fearful of having his birds too fat for breeding, fed them on "buckwheat and a mash with pepper, &c., each day!" What would be the stock-getting qualities of a stud fed three months before service on straw and ginger? Again, he was misled with the old delusion that old plaster makes well; just as the ancient taskmasters imposed on the Jews in demanding "the usual number of bricks," without giving the usual amount of straw—so are good birds dealt with which are expected with such diet to produce hard shelled, vigorous eggs and robust stock. They need a generous and varied diet. The conquering men of the world are, ultimately, the men whose diet is generous and varied. Buckwheat and skim-milk never produced heroes. Beef, vegetables, fruits, well prepared, with vigorous exercise, produces, and always has produced conquerors. So with stock.

This leads me to note another error defeating the purpose of the breeder, viz., not requiring of his birds what nature demands—exercise. Most place the feed in troughs, and the result is fatness, sickness, infertility, and indolence. Hide the food in straw, chaff, or sawdust, and make them scratch or die. They won't die.

Conclusion.—To secure healthy, vigorous stock-getting birds: 1st, Be sure the parent birds are robust in constitution and well proportioned in build. Let them be of different strains, and only cross two—or rather mix two—strains.

2nd. Generous and varied diet: Different grains, vegetables, and not oftener than twice a week in winter and once a week in summer, a mash with chopped onions, and a half teaspoonful of salt and a teaspoonful of cayenne pepper to the dozen birds; milk all the time if you can, in any shape except too old, musty and sour,—by sour I mean when it is watery; thick milk they like; if sweet all the time all the better. As cooling cans are deservedly becoming popular, sweet milk is assured. Make them *work* for their living. Once more, be sure they get enough but not too fast. Breeding is not fattening. These simple rules, with warmth, high sunlight,—cleanliness, and good natured attend-

ance, will assure 90 per cent. of chicks from the 100 eggs—and chicks that will live, be hard to kill and worth keeping.

H. W. KNOWLES.

Lachine, P. Q., Nov. 6th, 1882.

P. S.—I have omitted the 3rd article, which is, plenty of air-slacked lime, or bone dust and egg shell, with, of course, unlimited quantities of pure gravel. K.

## COMMUNICATIONS.

Editor Review,

SIR,—I notice a letter in your October issue from A. C. Hawkins, of Lancaster, Mass., in answer to a complaint made by Mr. Joshua Smith, of Winona. I also notice Mr. Hawkins advertisement in same number, in which he publishes a cut of "Rose" and "Chief," winners of 1st and special at Sherbrooke, January, 1881. Now, as Mr. Hawkins did not exhibit at the Sherbrooke show his statement that he does not buy his birds or pedigrees cannot be correct. Furthermore, I am in a position to prove that Mr. Hawkins does not, and never did, own the pair of birds whose score he advertises as winners of 1st at Sherbrooke.

Will Mr. Hawkins "rise and explain" this little inconsistency?

Yours, &c.,

W. F. JAMES.

Sherbrook, P. Q., Nov. 6th, 1882.

J. FULLERTON, ESQ.,

Dear Sir,—Through the agency of the POULTRY REVIEW I have disposed of a great quantity of my stock. I cannot see how it is that some of the oldest fancier stand in their own light by withholding a half page advertisement from you. My little ad. has paid me over and over again. It is about the best investment I have had. Wishing you lots of success in the future,

I am, yours truly,

L. THORNE.

Seaforth, Nov. 7th, 1882.

Editor Review,

DEAR SIR,—I have a pullet that took to a clutch of twelve chickens, their mother having been killed when they were but one week old, and the pullet was then about the size of a quail. She has cared for them and reared them all, and some of them are now bigger than their foster mother. She is not full grown yet. I think this is a very remarkable case; I have never heard of a similar one.

Yours truly,

G. A. KNIGHT.

Victoria, B. C., Oct. 27th, 1882.

## Shows to Occur.

New Brunswick Poultry, and Pet Stock Association, 5th annual exhibition, St John. N. B., January 16th, 17th, 18th and 19th, 1883. H. W. Wilson, Secretary, St. John, N. B.

Poultry Association of Ontario, Toronto, February 7th to 13th, 18-3. Wm. Sanderson, Secretary.

Montreal Poultry, Pigeon and Pet Stock Association, Montreal, P. Q., 14th, 15th and 16th February, 1883. Jas. H. Cayford, Secretary, Box 1168, Montreal.