In the third chapter some tests of the quality of milk are discussed. The value of milk is gauged by the percentage of butter-fat, and although there are many methods of estimating this, most of those which are trustworthy are troublesome to work. Prof. Muir does not speak well of the lactobutyrometer—an instrument designed for the separation and direct reading of the fat. The method is certainly rough, and almost useless, except in the hands of a very careful worker. There are two methods, not described by Prof. Muir, which are of much greater value and not more troublesome; these are the Babcock milk test and Soxlet's method of estimating fat in milk from a determination of the specific gravity of an ether extract.

In speaking of cream separation on p. 45, Prof. Muir mentions that "some kinds of separator have an arrangement for regulating the thickness of the cream," and also "that frequently separated cream is rather frothy." A fuller treatment of these points would have been useful. The methods of regulating thickness of cream from a separator depend upon varying the rate of revolution of the separator bowl, or else upon varying the time the milk remains in the bowl. The latter plan is most convenient, and is usually effected by diminishing the inflow of milk In the Danish separator the same end may be secured by adjusting the movable skimming tube. Frothiness of cream is most marked in the case of the Danish machine when the cream is taken off thick. This frothiness might possibly be remedied by using a smaller nozzle for the cream delivery tube.

In dealing with the principles of cheesemaking on p. 69, the author says, "The state of the milk with regard to acidity is of the greatest importance just when the rennet is added, and should it then be too acid little can afterwards be done to counteract the mistake. On the other hand, should the amount of acid be slightly too little, it may be counteracted to some extent in the subsequent processes."

As a matter of fact even the most skilful workers sometimes find the milk too ripe, and in such cases, by hastening the curd into the curd-sink and then washing with water at 100° F., good results may be obtained, at least by the "stirred-curd process."

The book concludes with a short appendix on cream-raising trials, made at the Yorkshire College.

Prof. Muir's manual, though small, is to be welcomed as a most useful addition to our dairy literature.

WALTER THORP.

OUR BOOK SHELF.

William Gilbert of Colchester, Physician of London, on the Loadstone and Magnetic Bodies, and on the Great Magnet the Earth. A New Physiology, Demonstrated with Many Arguments and Experiments. A Translation, by P. Fleury Mottelay. (London: B. Quaritch, 1893.)

AMONG men of science there is no difference of opinion as to the value of the original Latin work, "De Magnete," of which this is a translation. Some time ago (NATURE, vol. xlii. p. 279) we gave an account of a meeting held at Colchester by members of the Essex Field Club and the Gilbert Club, for the purpose of doing honour to the memory of Gilbert, who was born there in 1540. In a speech delivered at this festival Lord Rayleigh not only spoke highly of Gilbert's work, but went on to say that although we owe to an investigator who lived so long ago the theory that the earth is a great magnet, we are not much in advance of that position at the present time, as nobody has yet explained the origin of terrestrial magnetism. It was most desirable that a work which may be said to have marked a definite stage in the evolution of physical science should be presented in an English form, and this has now been done by an American scholar, who, as he himself explains, has "translated with latitude, keeping in view the author's sense more particularly than his words, and amplifying without altering the former." Mr. Mottelay has also brought together in a short biographical memoir the leading facts relating to Gilbert's career. The volume is well printed on good paper, and will be very welcome to students of the history of scientific ideas.

Report on Manurial Trials. By Dr. William Somerville. (Newcastle: Ward, 1893.)

THIS pamphlet, extending to 61 pages, gives the results of manurial trials in the county of Northumberland during the season 1892.

The plan of the experiments is an extensive one, but we may say that many of the experiments are designed to show what manures can be economically applied in the growth of turnips and potatoes in ordinary rotation.

From the experiments made upon farms at Rothbury, Ilderton, Tweedmouth, and Wark-on-Tyne, Dr. Somerville concludes that (1) basic slag is the cheapest phosphatic manure, though the best result is obtained with a mixture of slag and superphosphate; (2) kainit up to 2 cwt. per acre is a profitable dressing to turnips and potatoes; (3) the turnip crop requires nitrogenous manure; and (4) small dressings of artificial manures are more directly profitable than large dressings.

It is to be hoped than many of these experiments will be repeated in the county this year. W. T.

The Food of Plants. By A. P. Laurie, M.A., B.Sc. (London: Macmillan Co., 1893.)

THIS little book is intended to be an introduction to agricultural chemistry. It contains descriptions of a series of simple experiments which may be undertaken without any previous knowledge of chemistry. These experiments illustrate the part played by water in the nutrition of plants, the nature of the soil and of the air, and how plants obtain their food from these sources, &c.

The experiments are carefully chosen and described, and can be performed with inexpensive materials, and the book, especially if used as the author suggests, in conjunction with a Chemistry Primer, can well be recommended as an interesting guide to the study of agriculture.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Fossil Floras and Climate.

I HAVE read with some interest the communications in recent numbers of NATURE based on a review by my friend Mr. Starkie Gardner of a book which I have not yet seen; and as an exile in the south owing to a serious illness, I have not means of reference even to my own papers on the topic in discussion. I think, however, it may be well to direct attention to some Canadian facts published in the Transactions of our Royal Society and elsewhere, to which neither Mr. Gardner nor Mr. De Rance have referred.[1]

[1] See Report of Dr. G. M. Dawson on the 49th Parallel 1875; Reports Geol. Survey of Canada, 1871-'77-'79; Transactions Royal Society of Canada 1883 to 1892.