

Yale Forestry School, had formerly practical experience in the lumber camps of the United States and Philippines; and in consequence has been able to give a readable account of the numerous logging methods which are actually in operation. The book should prove suggestive to owners of timber lands in our own Colonies and to Indian foresters.

The first part is general, and comprises chapters on the resources and protection of the forests of the United States. The original woodland area is estimated at 850,000,000 acres, containing about 433,000,000,000 cubic feet of timber. The existing forest has shrunk to 550,000,000 acres, estimated to contain 210,000,000,000 cubic feet, of which the Federal and State Governments control about one-fourth. The second part deals with felling of timber, and contains chapters on labour, tools, organisation of the camp, careful utilisation of the tree, etc. The third part is devoted to transport by land, and is very complete, giving an account of aerial cables, railways, timber slides, and shutes, etc. The rude but efficacious system, by which railroads are often built in the forests of the Far West, is carefully described. The fourth part, transport by water, treats of floating, rafting, flumes, sluices, etc. Another part entitled "Minor Industries," deals with tapping for turpentine, harvesting of tanbarks, etc. A glossary of terms used in logging, tables of wages, timber values, etc., complete this admirable text-book.

*Foods and Household Management. A Textbook of the Household Arts.* By Prof. Helen Kinne and Anna M. Cooley. Pp. xv+401. (New York: The Macmillan Company, 1914.) Price 5s. net.

A FULL treatment is provided in this volume of the production, cost, nutritive value, preparation, and serving of a great variety of foods. The relation of these topics to general household management is made clear, and a careful study of household accounts, methods of buying, and ordinary housewifery is included. Though some parts of the book deal particularly with American conditions, most of the chapters make a direct appeal to teachers of domestic subjects in this country, and the volume deserves their attention.

*The Continents and their People. South America.* By J. F. Chamberlain and A. H. Chamberlain. Pp. ix+189. (New York: The Macmillan Company, 1913.) Price 3s.

This beautifully illustrated reading book will serve admirably to supplement the ordinary text-book in use by children studying the geography of South America. The physical and human aspects of geography are presented in such a way as to interest young pupils and to encourage them to trace the connection between the two. There are only three maps in the book; one is an old-fashioned coloured plate, another a photo-relief map of the continent, and the third a sketch map showing rainfall.

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## LETTERS TO THE EDITOR.

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### The Movements of Floating Particles.

IN reply to Mr. Archdall Reid (March 19, p. 60) I should say that the effects which he describes are the natural behaviour of a contaminated surface. A greasy contamination of the right order of magnitude tends to spread itself uniformly over the surface. If when the liquid in the saucer sways over to one side, the surface layer went with it, the contamination would be concentrated upon that side and diluted upon the other. Such a displacement is resisted. The invisible surface contamination remains nearly equally distributed, and the fact is witnessed by the visible particles floating upon it. R.

### Weather Forecasts.

IN NATURE of February 26 Mr. Mallock verifies the forecasts for London during 1913. He selects four characteristic types accompanying shifts of wind, and finds that the verification did not exceed 58 per cent. The temperature forecasts were even less accurate, being correct only 161 times; and while the given percentage is 52, a truer value, including doubtful and "no" forecasts, would be 44. He then, very properly, raises the question, reduced to its simplest terms, "Is the daily chart with its many entries worth while?" Personally Mr. Mallock thinks it extremely improbable that trustworthy forecasts can be made. Many meteorologists share this opinion. Two deductions can be drawn, either the chart does not contain data suitable for trustworthy forecasting, or the men who forecast are not competent. The latter we can quickly dispose of, for there is no difference of opinion regarding the honesty and professional skill of the staff of the Meteorological Office; and incidentally we may acknowledge the steady rise of the office under Dr. Shaw's progressive leadership to a commanding place among the meteorological services of the world.

Then is the weather chart inadequate? Yes. Moreover, it will be so for years to come. On the other hand, too much may be expected, and a method of verification applied that is entirely too rigorous. Weather is not the only subject on which forecasts are made, and if these were rigorously tested there would be many verifications below 50 per cent. Not long ago, the writer had gently to remind the editor of a metropolitan daily "that the forecaster in his statements concerning things that had not yet happened was more accurate than the Press (in general) in its statements concerning things that had already happened." Errors in law, medicine, and engineering are neither unknown nor infrequent.

To ask for a definite statement of weather conditions twenty-four hours in advance, is asking much in view of the number of indeterminate variables that are operative. Pressure, temperature, air motion, and precipitation are not definite, regular processes, but often erratic and complicated. From our knowledge of the laws of gases we may indeed work out certain functional relationships, but we are still far from determining actual interferences due to circulation, absorption, and radiation.

Shall the chart then be abandoned, and shall we