from time to time observations, of minor importance, perhaps, regarded as isolated facts, but valuable if brought together and studied in relation to those of other observers in the neighbourhood. Not the least service rendered by a volume such as this is that it offers a definite place of record for many a fact which would otherwise probably be lost. We have discussed at some length the biological matters, which occupy about four-fifths of the book. In addition, there is a brief general sketch of the geology, in which, as an instance of interrelation between geology and industry, it may be noted that Woolwich Arsenal is said to owe its establishment to the suitability of the local Thanet sands for iron-moulding. Scientific industries and archæology are other interesting chapters, and there is a concluding note on Woolwich as a centre for photography. The geological section has a very useful bibliography, arranged chronologically. The book is well indexed. W. G. F.

The Flora of the Dutch West Indian Islands. Vol. I., *St. Eustatius, Saba, and St. Martin.* By J. Boldingh. Pp. xii+321. (Leyden: late E. J. Brill, Ltd., 1909.) Price 10*s.*

CONSIDERING the comparative proximity of the West Indies and the number of nationalities in possession, there is a lack of systematic botanical information in the shape of local floras, so that Mr. Boldingh renders good service by the publication of his work relating to three of the Dutch possessions. It is based primarily on his own observations and collections, together with the collections of his countrymen, Dr. Suringar, Mrs. van Grol-Meyer, and Dr. Lionarons, totalling in all about 5000 numbers. The systematic enumeration comprises 806 species, of which 674 are regarded as indigenous and 166 are confined to the West Indies. The Leguminosæ is the best represented family, with sixty species; the Gramineæ, Compositæ, Polypodiaceæ, and Euphorbiaceæ follow in the order named. Panicum, Polypodium, and Peperomia are the larger genera. Ipomœa supplies nine species, of which two are limited to the West Indies, and another is recorded only for St. Eustatius. Two other endemic species, *Galactia nummularia* and *Calyptranthes Boldinghii*, have only been collected on St. Martin.

The author follows Eggers in the ecological divisions, and distinguishes littoral, cultivated, dry shrubby or Croton, and tree or Eriodendron types of vegetation. The dry shrubby and tree vegetations are well developed on St. Eustatius; on Saba the cultivated regions and certain ferns are notable; St. Martin is characterised by the extent of the littoral and shrubby vegetations, while forests are scanty. Generally speaking, the flora of St. Martin differs from that of the other two islands, and contains a number of plants represented on islands lying to the north, while the proportion stands the other way with regard to certain plants recorded only from islands lying to the south. The author has rounded off his information with geological and meteorological notes, a list of vernacular names, chiefly English, and maps. The flora bears out the general view that there is no striking difference between the plants of neighbouring islands in the group.

Weather Forecasting by Simple Methods. By F. S. Granger. Pp. xii+121. (Nottingham: Henry B. Saxton, 1909.) Price 2*s.* 6*d.* net.

THE aim of the author is to provide the means for a single observer "to answer the question 'When will it rain?' in a simple and intelligible manner" without the aid of instruments except a barometer, this, however, being regarded as optional, and not necessary. The methods recommended are based mainly on observations of the size, thickness, extent, height, colours, and forms of clouds. Different aspects of cumulus, cirrus, and stratus cloud are discussed in relation to the weather to be subsequently expected, and isolated examples taken from the author's observations at Nottingham are quoted.

As the result of a long series of observations by an observer who is evidently interested in the subject, the work may prove useful to local observers, but it is doubtful to what extent some of the conclusions arrived at can be considered general. Thus "visibility" is regarded as a sign of good weather, because this phenomenon occurs at Nottingham only during light easterly breezes. In some districts, however, visibility is frequently associated with winds from some westerly point, and is commonly supposed to be a prognostic of rain.

Although Mr. Granger again tells us that meteorology is not an exact but an observational *science*, he says in the same breath that his book is not written on exact and *scientific* lines. He has described it well. His cloud classification is incomplete, and is not that approved by international agreement. He ascribes the formation of cumulus to an electrical cause, and states that lurid red skies in the morning or evening are due to refraction of light. After using the word "gradient" several times he at length defines it as "the slope between two isobars when on one the barometer is one-tenth of an inch higher than the other," and speaks of a gradient of 300 miles, a gradient of 29·9, a shallow gradient, and a form of gradients. There are many other statements which ought to be modified in the light of recent researches. For example, our knowledge of the conditions in the free atmosphere is not as limited as the author suggests, and surely calculation already enters into the science of forecasting, and must continue to do so to an increasing extent.

The arrangement of the work, especially with regard to marshalling the descriptions under some definite plan and arranging them in chapters with appropriate headings, leaves much to be desired. The present arrangement is almost fortuitous.

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.*]

The Invention of the Slide Rule.

I HAVE read with great interest the abstract of the paper on the invention of the slide rule, by Prof. F. Cajori, which appeared in NATURE of December 30, 1909. I agree with the author in thinking that the Rev. William Oughtred was the first to suggest that calculations could be made more accurately and rapidly by sliding the edges of logarithmic scales together than by using compasses—the method adopted by Gunter; but Oughtred had a poor opinion of this device, and rightly considered that his circular scale was a great improvement on it. A few years before 1671, Seth Partridge [1] re-discovered the sliding principle, perfected it, and gave an almost complete specification for the slide rule which is used to-day by engineers.

I was fortunate enough recently to come across, in the library of the British Museum, a pamphlet written by Oughtred in reply to an attack make on him by an instrument maker called Delamain. The pamphlet is entitled "To the English Gentrie and all other studious of the Mathematicks, which shall be readers hereof. The just apologie of Wil: Oughtred against the slanderous insimulations of Richard Delamain, in a pamphlet called Grammelogia, or the Mathematicall Ring." The author very forcibly and very successfully rebuts the charges that were made against him. The following gives his opinion on the question of the priority of the discovery of the circles of proportion:—

1 "The Description and Use of an Instrument called the Double Scale of Proportion." (London, 1671.)