we may take Raper's as a type, consists of excellent practical examples and methods, but is so deficient in explanation and theory that a student could not obtain any grasp of the principles involved without the assistance of some friendly tutor. This is a serious objection if we consider the need of amended methods to meet the present increased speed of ocean transit and the consequent emergencies.

The other group, following on French lines, is so lumbered with investigations of a high mathematical order as to be quite beyond the comprehension of the average sailor.

Jean, who made an attempt to combine the two, produced two volumes of good matter, but ill-arranged and cumbersome. He has, in addition to the versine method, five difficult and different ways of "clearing the lunar distance."

We are glad to see that Mr. Stebbing has taken to heart the fable of the cat and the fox, and in every astronomical problem has selected the method in general use among the advanced school, and has explained and solved his problem by that method, and that only. His book is therefore of modest dimensions, and any student of average intelligence can read it and comprehend it unaided.

The comparatively small number of first-class navigating officers is in itself a conclusive proof that the art of navigation is much more intricate than a casual run through the subject would lead us to suppose. Long experience and special advantages are necessary to graduate as an instructor in this branch of science, and we therefore all the more welcome Mr. Stebbing, who happens to possess these special requirements, as a guide to our sailors of the present and the future.

The Distribution of Rain over the British Isles during the Year 1895. Compiled by G. J. Symons, F.R.S., and H. Sowerby Wallis. Pp. 237. (London: Edward Stanford, 1896.)

MR. SYMONS'S staff of voluntary observers now numbers 3084, having grown from 168 in the year 1860. Of these observers, 2304 have their stations in England, and only 398 in Scotland—a disproportion which is to be regretted. The large number of private stations where good records of rainfall are kept, is a striking testimony to the interest taken in local meteorology.

The present report contains an interesting article on Seathwaite as a rainfall station. The first systematic records of the rainfall at that place were made in 1845, so the station attained its jubilee in 1894. The following conclusions concerning this very wet spot are stated by Mr. Symons: (1) The rainfall at Seathwaite is on the average 135 inches a year. (2) In the wettest year it has exceeded 182 inches, and may possibly reach 190 inches. (3) In the driest year it has fallen to 88 inches, and will probably never be less. (4) In one month (November 1861) more than 35 inches fell. (5) In September 1894, very little more than half an inch fell. (6) There are nine recorded cases of more than six inches falling on one day—probably there have been about a dozen—the heaviest recorded was 7·52 inches on November 26, 1861.

Several plates illustrating Seathwaite, and the positions and patterns of the rain gauges, accompany the article.

In another article in the present volume systematic percolation experiments carried on at Apsley Mills, Hemel Hempstead, are described and discussed. Gauges were sunk in sand, chalk and earth, to measure the percolation at depths of 3 feet and 5 feet in each case. The result of the whole of the observations is, with a probable error of less than 2 per cent., "that with a rainfall of 26 inches, 16 inches percolate through 5 feet of sand, and 10 inches are evaporated from it; and that 12 inches soak through 5 feet of chalk or earth, and the other 14 inches either evaporate or run off the surface." The differences between the results obtained by the gauges at 3 feet and 5 feet were very small. The loss by evaporation is found by Mr. Symons to follow very nearly the same monthly variation as that from a water surface, but is decidedly less.

There are several other articles on various branches of rainfall work, and they help to make the new issue of "British Rainfall" an interesting volume.

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 Total Solar Eclipse of August 9, 1896, as observed in a Cloudless Sky at Bodö.

As Bodö was considered as offering conditions not favourable for serious work, this pretty town, so easily accessible for the greater number of European astronomers, was left unprovided with any astronomical instrument. And yet that town was, during the eclipse, favoured by a cloudless sky, which could have given magnificent results. I had the good fortune to observe there the wonderful phenomenon, and to make (what was chiefly my purpose) a sketch of the general outline and the rays of the corona. I do not think that among the thousands of Norwegians who witnessed that grand spectacle there were more than twenty foreigners, almost all English and American ladies and gentlemen.

The place we selected was on a hill at Brevig on the Saltenfjord, near Bodö, which hill had been found on May 3, when the sun was as high as on August 9, to be well situated for the eclipse observation. The weather on the previous days had been fine and very promising, and on the night of August 9 was even more splendid than before. On seeing the sun rise wholly clear from behind the mountains, no trace of the smallest cloud spoiling the clearness of the sky, an enthusiastic "hurrah!" arose from the numerous gathering on the hill.

Two minutes past 4 o'clock we first saw that the sun's edge, in the northern hemisphere and on the right-hand side, was hidden by the moon. Little by little the sun's disc was covered more and more, but the amount of light did not sensibly diminish until more than three-fourths of the disc were obscured. The darkness gradually increased, for the moment of the total eclipse was approaching. How slowly the seconds seemed now to pass, and how quickly after the first moment of totality! That impressive moment occurred at 4.54. Then at once we saw the moon of almost inky darkness encircled by the white corona. The corona was not at all regular. Its most peculiar feature was the total absence of any ray or streamer in the vicinity ($\pm 25^\circ$ W. and E.) of the sun's North Pole. Over the South Pole the corona was also a little less extensive than in the middle latitudes, where the greatest accumulations were to be seen in two enormous wings on both sides of the dark, empty space over the North Pole. The only colour I observed was the pink colour of the chromosphere around the edge of the moon (and less, also, at the sun's North Pole). In the chromosphere a few points (especially one at the left-hand, a little south from the equator) were blazing with dazzling brightness. Although the sudden apparition of Jupiter, Venus and Mercury, and, according to some observers, also of a star in the constellation Gemini, was very impressive, the darkness was not so great as I had expected, and did not hinder me in the least in beginning the sketch, which—not for want of light, but for want of the necessary calm of mind—I could only finish when all totality was over. The moments were too short and precious. I looked also an instant at the water in the fjord, and the snow-mountains on my left hand. The fjord was dull grey, the mountains pink at the bottom, and more yellowish at the top. The grass on our hill was dark olive-green.

At 4.55½ the sudden blazing up of a white point, quickly growing to a crescent at the right-hand side of the sun, proved that totality was over. At the first glimpse of sunlight, corona, chromosphere, and planets ceased to be visible to me.