quent than such forms are in Europe. On the face of things, it certainly appears as if the colony were reverting to the European type. At the same time, it must be remembered that Morrison's remarkable variations were picked out of a very large number of shells—a far larger number than those sent by Mrs. Brooke. Unfortunately Professor Morrison never published the detailed statistics he had accumulated, but from data he sent me I gather that there were about 100 split-band shells to 2100 others, *i. e.*, about 4.8%. The split-band forms in Mrs. Brooke's lot above are about 4%, and are not nearly so remarkable as many of Morrison's. But Mrs. Brooke probably put aside the best variations; in fact, she sends for my inspection the following, taken by her at Lexington at various times, and new to the list for that locality, three being new formulæ:

rubella 12045. I have taken a young example of this in England—at Beckenham, Kent. The formula was recorded before from Lexington with a different ground-color.

rubella $003_{4}0$. The formula was recorded from Europe by Roebuck.

" 10045. Very pale ground color. A new combination.

petiveria 1 (23)(45). = *goupilia* Moquin-Tandon Also in France.

" 00305 = *gabillotia*, Locard. Also in France.

" (123)(45). = *lowea*. Moquin-Tandon. Also in France, England and Ireland.

" 1(23)(45).

libellula $00(3^{x})00$. nov. formula

" 00305 = *bruguieria*, Moquin-Tandon. Also in France and England (Kent).

" $(12)_{3}3(33)3(45)$ nov. formula. This is the most remarkable shell sent by Mrs. Brooke. It seems to have been found dead, and so may date back to earlier times.

" 003055. The formula has been recorded from Europe by Kreglinger.

" $(12)_{x}$ 3(45) nov. formula.

While the percentage of split-band forms may seem small, European collectors will appreciate their *relative* abundance in the Virginia colony, and the large number of different formulæ in the latter which have not yet been seen in Europe. Very many more split-band formulæ are now on record from the Virginia colony than from the British Islands all together, notwithstanding the collecting that has been done in the latter country.

I regret that it is not possible to definitely assert as yet whether the peculiar variations of the Virginia colony are losing ground, but such seems to be the case to a slight degree at least. Certainly there is no evidence of their increase. Probably Mrs. Brooke will be able at a later date to give us more conclusive statistics.

The reader will observe the names (as *goupilia*, *lowea*, &c.) given to the different combinations of color and banding. These were first introduced by Moquin-Tandon; and many were added by Locard, but a very large number of combinations have no such names. I find that they are rather useful, as they can be remembered better, and are not so easily written or printed wrongly as the formulæ, etc., they represent. If I were writing a large treatise on the variation of *H. nemoralis*, I should be inclined to prefer names to formulæ when discussing distribution and other matters.

The colony of *H. nemoralis* at Burlington, N. J., is very different from the Virginia one, and so far as known contains nothing peculiar. Specimens sent to me by Mr. W. G. Binney belonged to *rubella*, *guettardia* and *cuvieria*.

T. D. A. Cockerell,
N. M. Agr. Exp. Sta.
Mesilla, N. M., April 20, 1897.

CURRENT NOTES ON METEOROLOGY.

NAVIGATION IN FOG.

A paper by Prof. E. C. Pickering, on

'Navigation in Fog,' contains some interesting suggestions regarding the possibility of determining the distance and direction of one vessel from another in a fog by means of a calculation based on the velocity of sound. If, for instance, two fog horns, A and B, are placed, one east and one west of a given point in a north and south channel, and each two miles distant from the point, and these horns are blown simultaneously and automatically at regular intervals of about a minute, a captain who is trying to work his ship through the channel can readily get his bearings. Supposing that one horn has a higher pitch than the other, and that a vessel is one mile east of the channel between the two horns, the captain of the vessel will hear the high-toned whistle A five seconds after it is blown, because it is only one mile distant, but B will not be heard for 15 seconds, since it is three miles off. If both horns are heard together the vessel is in the middle of the channel. Another application of this same method of determining positions of vessels is suggested in the case of one vessel attempting to pass another in a fog, and in the case of the calculation of a ship's distance from shore when the ship's time is within a second or two of that on shore, and when a whistle on shore is blown at the exact beginning of each minute. The determination of the velocity of the wind is also noted as being a useful application of this same method, especially in the case of very high winds, which are apt to injure anemometers. Professor Pickering's suggestions are worthy of serious consideration.

HYDROGRAPHIC OFFICE CLOUD TYPES.

THE Hydrographic Office of the Navy has issued a set of colored cloud views, classified according to the international nomenclature, for the use of its observers at sea. There are twelve different views, printed on one sheet, the whole sheet measuring 23 x 28 inches, and the individual pictures $3\frac{7}{8}$ x $5\frac{1}{4}$ inches. These cloud types are not reproduced from photographs, but from paintings. The set is an admirable one, some of the cloud forms being even more typical than those in the new Cloud Atlas, while the reproduction of the pictures of the original views gives several of the pictures a more natural appearance than the corresponding forms have in the Atlas. The alto-stratus, which in one of the views in the Atlas is yellowish, has its proper color of grayish-blue on the Hydrographic Office sheet. The price of the sheet is 40 cents. The views are also published on separate pages, with descriptive text, bound, and cost 60 cents in that form.

RECENT PUBLICATIONS.

On Obtaining Meterological Records in the Upper Air by Means of Kites and Baloons. A. L. ROTCH. Proc. Amer. Acad. Arts and Sciences, Vol. XXXII., No. 13, May, 1897. 8vo. Pp. 245–251.

An account of the kite work at Blue Hill Observatory and of the ascents in Europe by means of 'ballons sondes.'

Difference in the Climate of the Greenland and American Sides of Davis' and Baffin's Bay. R. S. TARR. Am. Journ. Sci., Apr., 1897. Pp. 315–320.

The Greenland side has the milder climate, owing to ocean currents and winds.

Meterologie. W. GRABERT. Leipzig, 1896. Small 8vo. Pp. 149.

Although much condensed, this new text-book is well written and presents the newest theories and facts.

NOTE.

Owing to the departure of the compiler of these notes for a somewhat extended scientific tour in South America, the regular publication of the *Current Notes on Meteorology* will be suspended during the next six months.

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