

virtues the Kola nut is considered to have a great future before it in European commerce, and is consequently strongly recommended to the notice of planters in our colonies for extensive cultivation. With regard to the preservation of the germinating properties of the seeds, Mr. Christy says he has received them in good condition, both in baskets and barrels lined with the leathery leaves of a tree known as the "bal tree." Some received in dry loam arrived as fresh as when they were gathered, and of some that arrived eighteen months since, the bulk is stated to be perfectly fresh and retaining still their beautiful red colour.

From a list of fifteen species of *Myristica*, the fruits or seeds of which are described, the value of the nutmeg genus is shown, especially as oil seeds. Seeds new to commerce are frequently arriving in the Liverpool and London markets, intended for the expression of oil and for the preparation of oil cake. Such seeds are of a very varied character and belong to widely different natural orders, and not long since those of *Myristica surinamensis* came into Liverpool under the name of African nuts. Upon analysis they were found to contain a large quantity of solid oil or fat with an agreeable taste, and but little, if any, odour, and when fairly pure it is said to resemble cocoa butter.

Amongst other important economic plants or drugs mentioned are the Coca (*Erythroxylon coca*), the medical effects of which have attracted so much attention of late; the Jamaica Chewstick (*Gouania domingensis*), which, it is stated, "has recently been introduced into this country by one of our leading London dentists for use in tooth powder and mouth wash," and also in the form of a fluid extract as a gargle for relaxed throat.

Of Papaine, the active principle of the Papaw (*Carica papaya*), some interesting records are given regarding its effects in treatment of diphtheria, croup, indigestion, dyspepsia, &c.

#### 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. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

#### Ocular After-Images and Lightning

IN reply to Mr. Shelford Bidwell's query whether the quiver of the lightning flash is a purely subjective phenomenon or not, I send the following extract from my note-book, made October, 1873:—"A flash of lightning consists of several separate flashes all occurring within a fraction of a second of each other. There was a very severe thunder storm at night, the thunder almost continuous. Drawing the curtain across the window so as to expose only a narrow slit of skylight, I observed this slit in the looking-glass which I kept moving rapidly backwards and forwards on its axis. Whenever a flash occurred, several images of the slit appeared, showing that there were several successive illuminations of the slit."

This was not the result I had expected, the experiment having been suggested to my mind in consequence of some experiments I had been making on the phenomenon of recurrent vision. The results of these experiments were published in the *Phil. Mag.*, December (supplement), 1872. One object of my experiments was to determine in what way the colour of the recurrent image depends upon the colour of the light producing it. By using a sliding shutter and a small window covered with different coloured glasses, I found that the colour of the recurrent image tends to be of a tint complementary to that of the light causing it, being, however, in all cases bluer than the complementary tint. I add the following extract from my paper:—"A recurrent image of an object may be produced without any apparatus whatever. To do this, place the right hand over the eyes

so that the palm of the hand covers the right eye, and the fingers the left eye. If the middle finger be then raised for a moment, so as to admit light for a short time as possible into the eye, a recurrent image of any light-coloured object held against a dark background may be seen. The effect is much better seen by twilight or gaslight than in full daylight. This method of producing a recurrent image is, however, much inferior to that in which a sliding shutter is used, owing probably to the illumination of the retina not being sufficiently instantaneous.

Cheltenham College, June 6

A. S. DAVIS

#### A Quinquifoliate Strawberry

IN your issue for April 30 (vol. xxxi. p. 601) is an account of a quinquifoliate strawberry. In the garden of the New York Agricultural Experiment Station at Geneva we have some second year seedling strawberries, some of which are bearing three, four, and five leaflets on the same plant, the leaves all large and perfect. We have other plants in which the two extra leaves are borne half way down the petiole, and which attain fair size, and yet others where these stipulary-like appendages are reduced to hair-like bracts. The variety of strawberry introduced under the name "Mrs. Garfield" frequently has these bract-like appendages. While speaking of the strawberry, I would remark that seedling strawberries very frequently are unifoliate during their early growth, and it appears as if Duchesne's *Fragaria monophylla* may be regarded as an instance of arrested development in one of these one-leaved younglings.

E. LEWIS STURTEVANT

New York Agricultural Experiment Station,  
Geneva, N.Y., May 28

#### OBSERVATIONS OF THE TEMPERATURE OF THE SEA AND AIR, MADE DURING A VOYAGE FROM ENGLAND TO THE RIVER PLATE IN THE S.S. "LEIBNITZ"

BEING obliged to proceed to South America at the beginning of this year, I took with me a thermometer and a hydrometer in order, if circumstances were favourable, to provide myself with occupation during the somewhat long and monotonous voyage. Thanks to the kindness and courtesy of Capt. Brown, of the s.s. *Leibnitz*, who took a lively interest, and assisted me greatly in carrying out my observations, the voyage was neither long nor tedious.

The *Leibnitz* sailed from Southampton on January 16, 1885, and made the passage direct, without touching at intermediate ports, to Monte Video, where she arrived on February 8, after a very favourable voyage. The route lay through the most interesting meteorological districts of the Atlantic, and my principal object at starting was to make as many observations of the temperature and the density of the surface-water along the route as possible. With these I combined observations of the temperature of the air, and frequently also of the wet-bulb thermometer. Observations were begun on January 21 in lat. 34° N., and continued up to the morning of arrival in the River Plate.

I have put together the simultaneous observations of the temperature of the air and the water with those of the wet-bulb thermometer, as they possess some interest of their own; the observations of density are kept for a future opportunity, as the reductions in connection with them are not quite finished.

The thermometer used for all the observations was divided into simple degrees of the Centigrade scale, and was of the ordinary form of German manufacture, with a paper scale. The degrees were 1.6 mm. apart, so that there was no difficulty in estimating tenths of a degree. Its zero was verified on board by immersing it in pounded ice, and found correct. The ice was well pounded in a clean towel, and a soda-water tumbler filled with it; the thermometer was then thrust into it and allowed to remain till sufficient ice had melted to fill up the interstices, producing a perfect magma of ice and water down to the