Should the bill pass, it is not impossible that one of its benefits might be, that it would render more difficult the appointment to the responsible post of commissioner of agriculture of individuals such as some who have in the past held without filling that position.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Red sunsets and precipitation.

The readers of the scientific journals have, no doubt, observed that the prevailing explanation for the red sunsets and colored sky during the past few months is that of chromatic diffusion of light by volcanic-ash particles. There are some apparent incongruities as pointed out by Mr. Proctor and others; but we believe that the established physical laws will permit a satisfactory solution of the phenomena, assuming volcanic matter as the cause.

The object of this letter is to notice what seems to the writer a probable connection between the conspicuous sunset colors and the excessive cloudiness and precipitation during the last month or six weeks. With regard to precipitation we must recognize Professor Aitken's discovery; viz., that clouds and all forms of precipitation occur by virtue of the solid particles of matter suspended in the atmosphere, serving as nuclei upon which the aqueous vapor is condensed. The supply of this solid matter in the aggregate is nearly uniform; but, if an excess occur from any cause, we should expect a larger precipitation for the same hygroscopic state of the atmosphere. This conclusion, we believe, has been verified during the past two months, in meteorological observations. It might be argued that the cloudiness and rain have not been evenly distributed, as would be expected if caused by the settling of the ash-particles; but in what has been said, no regard is taken of the various causes for an unequal distribution of the matter, and the common conditions of storms. We should expect weather-records to show the greater precipitation in regions where the sky colors have been most conspicuous. The writer, however, has no data for verifying this.

The above is advanced rather as a suggestion than as an exposition, in the hope that it may stimulate a more exhaustive study of this connection, if such there is. W. H. Howard.

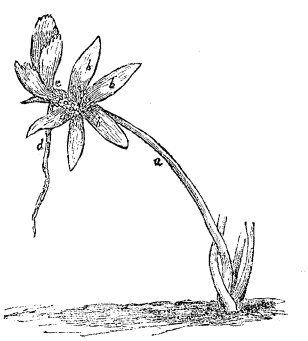
Does Unio spin a byssus?

Attached to the female of a Unio which I collected, last August, from the middle fork of the Holston River, at Marion, Va., were stones, some of them more than an inch in diameter. So strongly were these attached that not only could they be lifted from the water by the attachment, but it took considerable force to separate them from the Unio. I had often seen Unio shells covered with gravel and mud firmly cemented by the Confervae that commonly grow upon the anterior portion of the valves exposed above the water; but these shells under consideration were unusually free from such growths. At the time, I removed the pebbles without giving attention to the phenomenon; but, recurring to it afterwards, I found, on examination, what appeared to be *the bases of byssi*, situated at about the middle of the anterior fourth of each valve.

Again: these were only found on females, all of which were gravid, having the eggs well developed. Is it a provision to prevent the strong current of this river from sweeping them into unsuitable spawning-grounds while depositing their eggs? Are these byssi (?) *seasonal*, or *permanent?* If byssi, how are they spun? E. P. Larkin.

Retrograde metamorphosis of a strawberry-flower.

Mr. J. H. Foster of Orange county, Fla., sends a monstrous form of a strawberry-blossom, which is shown in the accompanying engraving. During the winter there were several hard frosts which blasted many of the strawberry-flowers in Florida. This injurious weather may have been the cause of the strange malformation. The engraving shows the flower-stalk, *a*, raised from its reclining position. The calyx-lobes are at *b*, *b*, *b*, and within these is a circle of stamens. In place of the fleshy receptacle, so much relished by all when ripe, there is a small strawberry-plant, *c*, with its short stem, and a root, *d*, springing from near its base. This root, doubtless, penetrated the soil soon after it started out from the stem, and became a source of nourishment for the young plant. The base of the stem has many undeveloped pistils scattered over its surface, which plainly show that the plant is a transformed receptacle. The young leaves, when unfolded, are of the normal form, consisting of three wedge-shaped, coarsely serrated leaflets.



Flowers, and in fact all organs of plants, have been known to undergo strange changes of form. All gradations may be found, from one set of floral organs to another. This is seen between petals and stamens in almost every white water-lily, and between stamens and pistils in willow, apple, poppy, and other blossoms. Stamens are changed into, or become, petals in the familiar process of the 'doubling' of flowers. This tendency to retrograde is carried still farther when both the stamens and pistils become green, leafy expansions, and thus reveal their true nature. In many cases the floral axis is prolonged beyond one or more circles of floral organs, and the stem again assumes the ordinary leaf-bearing form. Such a metamorphosis sometimes takes place in an apple or pear blossom; and as a result, there may be a fully developed fruit, with a leafy branch extending beyond the blossom end (basin).

The metamorphosis which has taken place in the strawberry-flower shown in the engraving is in the line of our expectation: the strawberry-plant propagates itself readily and rapidly by slender branches sent off from the base of the parent-plant. Each one of these runners strikes root at its apex, and soon develops a tuft of leaves and an independent plant. In the case discovered by Mr. Foster, this strong tendency to increase by runners is carried out by a flower-stem with a frost-injured blossom lying upon the moist earth.

Byron D. Halsted.