

along streams and seems to select a damper location than the white, and the trunk is almost entirely yellow or heart wood, there being but a couple of inches of sap wood on the outside. It is very easy to split, makes good rails, and the lumber lasts a long time. The white poplar grows on hilly woods and dry locations, and the trunk is mostly white or sap wood. It is very difficult to split, and decays in a few years, so it has but little value as a timber. He states that the young trees can not be distinguished, to his knowledge, by the bark, but that the yellow poplar bark of old trees is in long, horizontal ridges, while the white poplar bark is short and choppy."

Mr. Bright has had a large amount of timber cut off his place, and has handled a large amount of "poplar" lumber. He tells me that he is satisfied that the "white" and "yellow" trees are not different varieties, but different conditions of the same variety at different ages. On a high ridge, quite dry, on his place, he has a poplar wood which he has been cutting out; all of the old trees are yellow, the young are white. In a creek bottom near by, which is occasionally flooded, there is an abundant growth of young white trees. He can not tell the color of the wood from the bark. He mentions a tree in front of his house which his father remembers, some forty years ago, as a white poplar tree. Some two years ago the tree was split open by lightning, and the wood—excepting two inches of sap wood—was yellow. It had changed yellow as it grew older. Even in the young trees the heart wood is yellow. I have not been able to find any difference in the appearance of the bloom or leaf. Mr. Bright's idea seems to be a very reasonable one, and is founded on observed facts.

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Lancaster, Ky.

Oxalis.

Mr. Thomson's note on autumnal blooming of *Oxalis violacea* relates to a well-known peculiarity of the plant. In the *American Naturalist* for January, 1882, I called attention to the constant absence of the mid-styled form from this, which should be a trimorphic species. Aside from a figure in Payer's *Organogénie*, and a record of one doubtful specimen in Hildebrand's paper on "Heterogone species of *Oxalis*," there is no evidence that this form has ever been observed. I shall be greatly obliged for specimens from any part of the country showing this form of flower—with the pistil intermediate in length between the two sets of stamens.

In going over a very full line of specimens, last winter, I discovered that our flora includes two species of the violacea group that have not been previously distinguished, viz.: *O. latifolia*, var. and *O. divergens*, both of which are Mexican species which have extended into our territory. It may be of interest to add that Dr. E. Palmer's Mexican collection of last year includes the rare *O. Hernandezii*, a plant related to our *O. decaphylla*, but distinguished by its narrow, entire, hairy leaves.

The most interesting result of this examination, however, is the discovery that we have two trimorphic yellow-flowered species of the corniculata group. One of these is the *O. recurva* of Elliott, a perennial with creeping rhizomes, dark-bordered leaflets, and large flowers (as compared with *O. corniculata* or its variety *stricta*), which occurs from North Carolina to Pennsylvania and Ohio. The other, an Oregon species, which has been confounded with forms of *corniculata*, I have called *O. Suksdorfii*, in a paper presented to the Boston Society of Natural History some months ago. It is lower than *O. recurva*, and destitute of the

dark borders to the leaflets, but otherwise closely related to it. Both are clearly distinct from *O. corniculata* and its variety *stricta*, although each of these in some localities produces rather large flowers resembling the long-styled form of a trimorphic species. A repent southern and Californian form, which I have called *O. corniculata*, var. (?) *macrantha*, appears as though it might prove to be trimorphic. I shall be greatly obliged for specimens and accurate measurements of the floral organs of this plant that may throw light on this point. WILLIAM TRELEASE.

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A walnut sport.

J. R. Johns, Millersburg, Pa., sends an abnormal walnut, the appearance of which, he thinks, is due to pollen of the hickory. Similar nuts have been found at about the time of the first frosts in the fall, for four successive years, at about the same spot under a black walnut tree—about a dozen specimens in all. The nearest hickory tree is about 800 yards distant. "That the nut is part hickory and part walnut," he says, "can not be doubted by any one seeing it in the first state. The lower or walnut part of some was more fully developed than in the specimen forwarded."

The nut is mature, of nearly the size of an average walnut, and has its lower third seated in an adherent, two-lobed, cup-like body, in texture much like the outside of a walnut. The "shuck" of the upper part is thinner and smoother than usual, and still shows the four parts of the adherent calyx as when young, thus causing it to resemble a hickorynut. On cutting it open the shell and kernel were found to be those of the walnut. The lower adherent portion is possibly the persistent bract.

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Preventing fertilization.

Dr. Halsted, in a recent bulletin of the Iowa Agricultural College, gives the result of some experiments on excluding pollen from squash and cucumber flowers. They were undertaken to demonstrate to his students the necessity of the pollen for the development of the fruit. The pollen was excluded by covering the female flowers with cloth sacks.

I have found other ways of excluding the pollen to answer the purpose. Five female cucumber flowers nearly in blossom, on plants growing in dry sandy soil, were each covered with paper and then each with a hoe full of earth, the places being marked by stakes. In eight days one was dead, three were yellow and one still green. All finally died after making a small amount of growth. Some other young cucumbers, covered just after the blossoms had withered, all developed. The temporary covering of dry sandy soil did not seem to affect their growth, and the paper was not considered essential.

Another method was tried with some muskmelons. Five pistillate flowers nearly in blossom were clipped off with scissors just at the top of the ovary. Five others on which the flowers had faded, and which were presumed to be fertilized, were clipped in a similar manner to determine whether any failure of the first set to grow might be due to injury by the cutting. All the first set died, the young fruits growing less and dying sooner than in the case of the cucumbers. All those clipped after the blossoms had withered fully matured, except one which the chickens got at.

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