PLANTS NEAR CHICAGO.

BY SAMUEL BROOKS.

Messrs. Editors: Although on the present occasion I have neither new theory nor practice to make known, I have thought that an account of a few day's ramble in search of plants, flowers, and native fruits, on the banks of the Calumet and Deep rivers, would not be altogether unacceptable. The primary object of this short tour was to ascertain, if possible, the existence of a variety of grape of an oval or oblong shape, very large dimensions and yellow color, which is said to grow in that region.

Our company consisted of Mr. John Goode, of the Sheffield Nursery, his two brothers, and myself. It is true we were not successful in our search for the variety of grape above named, of the real existence of which I am extremely sceptical, and believe it to be none other than the green or white variety of the Plum grape, the varieties of which are known and described by authors under the name of "Vitis Labrusca." I will therefore proceed to enumerate the various plants which came within our notice, with their localities, as near as my memory will furnish.

We discovered nothing of peculiar interest on our road to the Calumet, until we reached the free bridge, 15 miles from Chicago, where we left our wagon, and commenced our researches in the swamps and brush in its immediate vicinity. Here we were rewarded by discovering the following, viz: A new species of Cacalia, with nettled leaves, and large heads of pure white flowers, a plant well deserving a place in our gardens, for its showy appearance when most other flowers are on the decline.

Large quantities of the Ptelea trifoliata or "Whahoo" of this part of America, a very different plant from the true or Whahoo of the South, which is the Ulmus alata, a tree of small size with winged branches, and I think not to be found in Northern Illinois—at least it has never come within my notice. The Ptelea is a diœcious shrub of moderate size, throwing up many stems from the root. It has handsome glaucous ternate leaves. The pistillate plant is very ornamental in spring, with its large panicles of whitish flowers, and in autumn its seed vessels, which appear in dense clusters somewhat resembling a bunch of hops, give it a very unique appearance.

The only plants besides these two which we remarked, that are not also common in the vicinity of Chicago, were Plantanus occidentalis or American Sycamore, and a beautiful species of Cratægus. The Plane trees were all old, and appeared from their dead tops and injured branches to have suffered from a calamity which befel the same species in England about 35 years ago to a much more fatal extent, almost every tree being killed by the frost; while the Platanus orientalis, a tree of equal grandeur and more elegance, escaped without injury. The Cratægus may be considered a real acquisition, from its apparent suitability for hedges, probably more so in this latitude than the Cratægus *cordata* or *Washington* Thorn. It is of moderate growth, has small shining dark green leaves, branches very dense and compact, and berries resembling the English Hawthorn. It will also form an ornamental tree to stand singly on lawns, or in the front of houses.

Our next discovery was on a marsh about one mile on the road to Wilson's bridge. Here we met with a species or variety of Cornus, with narrow leaves and branches of the same beautiful carmine color as the Virginian Dogwood. A very robust and tall growing species of Aster—and gathered also large quantities of a beautiful annual Polygala, with heads of flowers resembling the Globe Amaranthus. This plant is common in most moist places, but we had never seen it so fine before.

Immediately across Wilson's bridge, on the right hand, we fell in with a plant of great beauty, discovered last year by Mr. Goode. It is a new species of Spiræa, with long and dense panicles of bright purple flowers, leaves indented on their upper margins, downy or subferruginous underneath, and in habit resembling the common Spiræa *tomentosa*. It will doubtless become a favorite shrub. This spot also presented to our notice two species of Hypericum, and three or four orchideous plants, the dormant state of which precludes us from deciding on their merits. Aronia melanocarpa, and two other species of Aronia, both having black berries, and undescribed, as far as I can find. Two species of Rubus and Isnardia cylindrica.

From hence we proceeded across the country in a southerly direction, leaving the road to Michigan City, and passed over innumerable marshes, which would doubtless have enriched our collection could we have devoted time to their examination. We were desirous, however, to reach the locality of the grapes, as it had been pointed out to us in answer to our frequent enquiries; and consequently our researches here were confined to the road side, which yielded us three or four species of Willow and some magnificent specimens of Solidago, different to any before seen.

On reaching the high road from Chicago to Liverpool and Valparaiso, we suddenly dropped upon large patches of Myrica Gale (the Sweet Gale or Bog Myrtle,) a plant I had often before looked for in vain. It well deserves a place in our gardens, the leaves being of unusual shape, and highly aromatic, and the plant altogether of very neat habit.

Hastening on to Liverpool, around which we were assured that all we desired or even imagined of the varieties of grape would most surely be realized, we noticed but slightly the productions on the road. Among them we observed the black Alder, growing with much luxuriance on the borders of the marshes, and a species of Poplar, resembling the Aspen, except that the leaves were regularly dentate, and its habit more robust. It may upon closer investigation prove to be the Betulifolia of Pursh.

The vicinity of Liverpool, which is a town consisting of two houses, both taverns, and occupying both sides of Deep river, although not fulfilling all that had been promised, richly rewarded us in the variety of plants and shrubs. Here we found Rhus vernix, and a dwarf species with brilliant carmine leaves, both plants of great beauty, the former a very robust and showy species of Sumach, but very poisonous. It is however not likely to prove injurious, since its fruit does not possess the pleasant

acid of the common Sumach, which pleases the taste of many young people as much as its rich clusters of red berries do the eye; but on the contrary the fruit of the Rhus vernix is of a greenish white color, hanging in lax racemes below the leaves. The dwarf species is apparently new, unless it may prove to be a variety of Rhus copallina, of which however I have some doubt. A species of Vaccinium or Whortleberry three or four feet high—two or three species of Prinos, the Tupelo tree, Nyssa Aquatica in great abundance, and forming a striking object, with its rich scarlet foliage, in contrast with the oaks, in company with which it is commonly found; but perhaps among the hundreds we examined we found but one yielding fruit, and that very sparingly—an apparent proof of the excess of staminate over the pistillate trees, this plant being dioecious. A gigantic species of Hibiscus, growing in a solitary spot on the banks of Deep river, which, judging from the long spikes of its ripened seedvessels, will prove very splendid when in flower. We were pointed out this plant by Mrs. Earl, a lady devoted to the science of floriculture, and for whose kind attentions we all felt greatly obliged. By this lady we were also re-assured of the existence of the Scarlet Water Lily, which she affirms to have seen on two occasions when traveling, both in Indiana and Illinois, and confirmed all that Mr. Elston and others have said in relation to this most desirable acquisition. In addition to the above, which may all be regarded as pleasing additions to the gardens of Chicago, we were agreeably surprised by the appearance of the first species of Andromeda either of us had seen on this side of the Atlantic; and although I cannot affirm that it occasioned as much delight to us as it did to the great father of botany when he first discovered it, growing in the centre of a marsh; and from the purity of its white and delicate flowers, in contrast with the noxious weeds by which it was surrounded, bestowed upon it the fanciful name it has ever since borne, it called forth many pleasing emotions, and carried me back in memory to a spot where I formerly cultivated this and all other known American plants with much devotion.

Here on the borders of a small marsh enclosed on all sides by a gently rising bank, was a circle of what, to the casual observer, would appear to be nothing more than common brush, with numerous small trees rising above it. This brush consisted of several species of Vaccinium, a new species of Spiræa, Aaronia Pumila, the Andromeda calyculata above named, Gaveltheria procumbens, the beautiful carmine colored Rhus before mentioned, and the Cranberry, growing in great profusion out of and on the surface of the Sphagnum palustro or Bog Moss, which afforded a carpet softer than the richest Turkey or Wilton, and yielding to every step until you were ancle deep. Below this the soil was for two feet black as coal, and filled with sparkling white sand.

The trees growing on this bank were principally the Tupelo, and various species of Oak, and not far from it we observed the Jack Oak, a species nearly evergreen, with a long entire leaf and rich dark green color. I believe it to be the Quercus laurifolius, and the only place I had ever before seen it was at Joliet.

The day was now so far spent in examining and searching for plants, that we had little time to reach the locality of the grapes, which however we did before dusk, and found indeed a spot which, if it was cleared of the trees and underwood, would form a natural vineyard of vast extent. The place had evidently been well and industriously visited before, not only for the grapes, but for the cranberries, a large marsh, in which they grew most abundantly, lying on each side the ridge on which the vines are found. We gathered fruit, and possessed ourselves of a few plants of the grape, intending to visit the spot again for a larger supply, not only of them, but of many other plants, particularly Orchideæ, which our time did not permit us to remove.

The varieties of grape we saw were the large purple, and one of a reddish hue approaching to flesh color, with berries not quite so large. We had been previously assured, however, that another variety, with green or whitish berries, was also to be found at the eastern end of the ridge; and this last variety may prove identical with the large yellow, which was the main object of our pursuit.

While speaking on the subject of Grapes, it may be well to give the result of my own investigations in relation to the names of the wild sorts, about which there appears to be considerable difference. When describing the native kinds, American and European botanists vary in the names they apply to the different sorts, the former term the Vitis Labrusca "The Plum Grape," and Vitis Labruscoides "The Fox Grape," and Vitis Vulpina "The Frost Grape"—whereas European Botanists term the Labrusca "The downy leaved Grape," and Vulpina the "Fox Grape," and do not appear to be acquainted with Labruscoides," which probably is only a seminal variety. To these may be added the Œstivalis of Michaux, and Odoratissima of Doon, which last species we should certainly introduce into our gardens, the fragrance of its flowers being equalled only by the Mignonette, and the first species. Œstivalis, or rather a variety of it, with deeply serrate leaves, I think I have seen on the sand banks near the banks of the Calumet, and also at Michigan City. In the above enumeration I do not include two very superior varieties, but whether of Labrusca or Vulpina I have not been able to determine, viz: Mr. Kinzie's variety from the Calumet, and another variety with larger berries, and equally compact bunch, also from the same source. It may not be uninteresting to some of our more classical and botanical friends to remark that the term "Labrusca," as applied to the wild grape, is adopted from Virgil, who twice notices it, "Labrusca raris racemis sparsit autrum."

To return from this digression. The shades of evening admonished us to depart from this to us interesting spot, and hasten to a tavern, with the promise of a rich collection, at our next visit. The following morning we proceeded to Thornton in search of a "Rara avis" which we had been positively assured we should find there, but which, as soon as we saw the country and the soil, we perceived was a complete hoax. Our time, however, was not lost, for although we found nothing new in the neighborhood, we possessed ourselves of many desirable plants, which could not, as far as my knowledge reaches, be obtained nearer to Chicago;

among them the Styphelia trifoliata, and young plants of Platanus occidentalis.

From hence retracing our steps, we returned to Chicago, taking Blue Island in our way, where we found young plants of the Crataegus, before mentioned, a species of Smilax with enormous leaves, which will form a magnificent climbing plant, and fine specimens of Gentiana, Aster, and some others very acceptable to us.

Our journey resulted in the acquisition, in all, of about sixty species, and put us in possession of the localities of many plants which may be desirable hereafter. I am apprehensive that the above lengthy account will prove any thing but interesting to all but lovers of gardening; but for those only was it written, and should it in the least degree tend to promote their ardor in the cause, and communicate any information not generally known, my object will be attained.

Chicago, November, 1847.

THE EFFECTS OF LIGHT ON VEGETATION.

BY J. HALL.

MESSRS. EDITORS: The manner in which light, as a necessary agent, effects the growth and productiveness of plants, has not been properly considered by the conductors of agricultural experiments. If this was not the case, there would be less said about the attractive influences of the moon, and more respecting the effects produced by its light—which is undoubtedly important to vegetation, as well as solar light. That plants absorb light for some considerable purpose, is apparent from the fact that the upper surface of their leaves is generally turned in a direction from which the greatest quantity is to be derived; and that when growing in crevices of rocks, or in situations where light is only admitted on one side, they incline in that direction, showing that the leaves of plants search for light in the same manner that the roots do for nourishment. The Rose Lupine *(Lupinus pilosus,)* and many other species of plants that have irritable leaves, invariably turn them towards the sun during the day, and at night to the moon, especially if it be nearly at its greatest light, as if thirsting for rays more intense than those received indirectly, or from the diffuse light of day.

The greatest benefit received by plants from the absorption of light, is in the decomposition of carbonic acid gas, which is one of the principal supporters of vegetable life. It is a compound substance, composed of oxygen and carbon. When it is absorbed in large quantities by plants vegetating exposed to the sun, it is known to be efficacious in hastening their growth; but to plants confined exclusively to the shade, such quantities are injurious, as its carbon cannot be assimilated with the plant, until decomposed—which in this case can by no means be effected, without direct light from the sun. If carbonic acid gas is received into plants that cannot absorb light sufficient for its decomposition, it is useless, or rather injurious, to them. In the decomposition of this gas, absorbed by vegetables, the light is first decomposed on entering the plant—all the rays not being required to produce the intended effect; consequently the green ray is reflected, probably more for its prejudicial tendency to hinder the action of the other rays, than to give the whole of vegetation a uniform color. But as it is, the green ray is never absorbed by healthy, growing plants: but it is reflected, more or less, according to the thriftiness of their growth—which is of itself a circumstance sufficient to bring us to the consideration of the nature of plants, respecting their refusal to absorb a certain particle or ray of light, while exhibiting luxuriance in the greatest degree. If its rejection cannot be accounted for, by supposing that the carbonic acid gas of plants cannot be properly decomposed, even through the agency of light, without the exclusion of the green ray, I am willing to let it remain among the mysteries of nature. When plants digest carbonic acid, the carbon is deposited, forming a part of their substance, while the principal part of the oxygen is permitted to escape from the under surface of their leaves, which is essential, in respiration, to the support of animal life, but is exhaled as entirely useless in vegetation.

Now, since we have seen that light is essential to the growth of plants, may we not justly suppose that it affects their productiveness; and that the practice adhered to by many farmers, of planting seeds at particular times of the moon's various positions to the earth, is mainly correct, though pronounced by the "learned and scientific" to be superstition? As plants of any description require the same length of time in one season, to grow and ripen, as in any other, (should they be favored with like circumstances,) it is evident that those which are in the course of their growth to deposit large quantities of carbon, in the form of fruit, should be allowed to commence vegetating at a time in the proper season, when the moon afforded the best light. Then in a few days they will require the additional light furnished nightly by the increasing moon; and vegetation will progress without interruption, as far as light is concerned. Nature has undoubtedly made judicious arrangements for supplying plants with this important agent. After drinking, through the day, the intense light of the sun, they find relief in the gradual approach of darkness, which changes the process of vegetation in such a manner that oxygen is absorbed, instead of carbonic acid; but, when moonlight is prevalent, it is carried on in the same manner as it is during the day, except the rapid decomposition of carbonic acid is checked by the mildness of the light. If we disregard the irregularity of the seasons, and closely observe the growth of plants that have been planted at the proper time respecting the moon's position to the earth, we will find that there is much benefit to be derived from being attentive to the best time of planting seeds; for, in the cultivation of plants, if the season should not interfere in arresting their growth, we may secure to any particular kind, the benefit of moonlight, as they naturally require it. The cause of many failures, in experiments of this kind, may be attributed to some predominant inclinations of the seasons, or to the carelessness of those concerned in the experiment. If farmers would look into their business properly, they would soon be convinced that there is yet much to be learned by them, upon which their prosperity in some degree depends. Therefore it should be the aim of all to improve, and experiment in, agricultural science.

Athens, Ill., November, 1847.