

A WINTER GARDEN.

BY AMANDA B. HARRIS.

On a certain winter day not very long ago my comrade and I began to make preparations for a series of lovely experiments. What they were to be you might not guess in a dozen times trying. We had long been meaning to do it, and saying that we certainly would; and with that intent had brought home at one time and another bushes, boughs, branches, twigs, osiers, brambles, enough to have made a good-sized bonfire, and more than enough to keep the rooms in what housekeepers call "a clutter."



Horse-chestnut (reduced.)

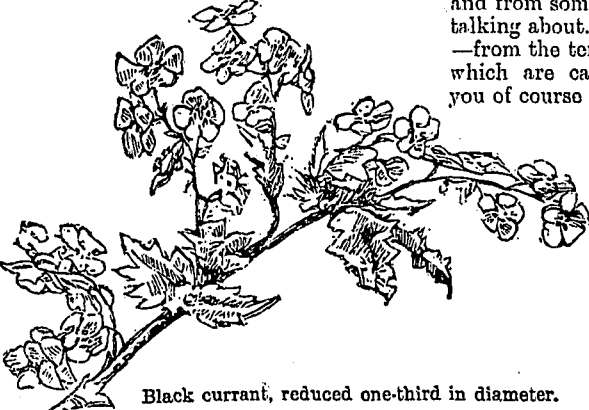
They were all leafless things, you understand, which we collected after cold weather came on, and all along through the winter as we had opportunity. Sometimes they were dry tips of something that stuck up through the snow, or that we could get hold of by venturing on a drift or walking along the top of a stone wall. And if we happened to be snowed in, we had recourse to the trees and shrubs by the side of our own garden fence. In that way we would get together a nondescript variety; if only vigorously alive it was all we asked for; and even that we could not always tell without scraping up a bit of the bark, so dry and dead did they look.

Not to make a mystery of it, let me say at once that our "craze" just then was the study of buds—we always had something. Examine the complete drawings the artist has made from actual specimens, butternut, sumach, horse-chestnut, and other familiar things, and see if they are not fascinating. Then try for yourself, as we did, to coax such as these into leafage, some of them into bloom and you will find great pleasure, as we did, in a winter-garden.

You cannot come to a knowledge of all these wonders without some help to your natural eye; but a cheap little microscope will admit you right into fairyland. You can have no idea of the variety, nor of the extreme delicacy, richness and beauty until you have put them to the magnifying test. After you have done so, you will not think me extravagant in my admiration; you will be surprised at the finish of even the minutest parts; and the luxuriance displayed in some of the buds as they unfold will make you think of a garden of the tropics.

We wished first to examine the buds themselves, and see what relation they bore towards the future development when woods were green; then we were anxious to know what would happen under a process of indoor treatment. Many of them—probably most—would gradually swell, open, and expand into leaf; a few, perhaps, would blossom; at any rate we hoped so, and thought it worth while to try. We had once done so with the common lilac, and been rewarded with a pale thin spray of flowers right in the depth of winter: and that is a time, I hardly need say, when one can appreciate flowers. In summer life is so full and abundant that you hardly mind one bunch of bloom.

If you wish to prove it for yourself about

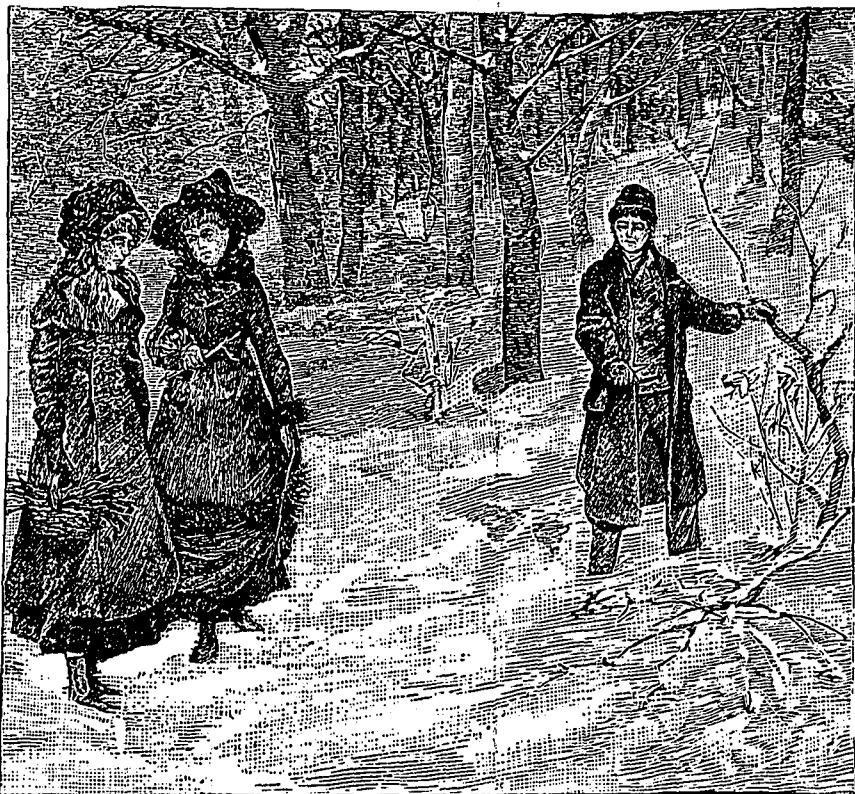


Black currant, reduced one-third in diameter.

the lilac, nothing is easier, but be sure you select the right kind of branch, for right ones there are. You would not, of course, think of taking a new shoot, for you will remember that you never saw a blossom on one of those, but towards the end of the older branches. But even knowing so much you may make a mistake that will be fatal unless you understand that it is of no use to try with a branch which has been allowed to go to seed. Those buds contain leaves only; next year there will be flowers there, but not this. Persons who want a full bloom on their lilac bushes every year, look out to break off the flowers.

Take, then, one of the two-forked branches (you will know them at once) with those strong buds in pairs at the end; put it in warm water, which you will have to change several times a day, and keep it where it will not get chilled: set in the sunshine when there is any—nothing is so good for flowers, with a few exceptional cases, or for children, as plenty of sunshine—and in a few weeks you will have a bit of May bloom to brighten your room. Encouraged by this you will try other things.

Greater wonders than those wrought by Aladdin's lamp are taking place right in your own dooryard. No tale of genii is more marvellous than this; and this is true. You can watch the process of growth after the enveloping scales have opened and fallen back. That important inmost part develops more and more, assuming a pyramidal form, and coming out farther, so that soon the flower stem appears. After that it is simply a matter of progress and expansion; but the mystery of its beginning, color and shape, is mystery still.



"All along through the winter as we had opportunity."

Yet, in the words of a great botanist, though we cannot tell what life is," we can "notice some thing which it does."

One of the laws of nature is, that before the leaves have dropped from the trees in autumn, those for the next year (including the branches which are to grow in one season) are provided for. All branches and shoots were once buds, you know. The stem, or trunk of a tree grows out of the root: the branches grow from the stem, and from some of just such buds as we are talking about. There are two special ways—from the terminal buds, and from those which are called axillary. The first, as you of course understand, is at the end of the stem, which pushes right along by means of it from year to year.

The second word seems to belong more strictly to the science of anatomy, for "axil" means the arm-pit: so the axillary buds are those in the angle at the base of the leaves. You can see them before the summer is gone, for they are ready and biding their time; and

though they do not exactly crowd the leaves off, they speedily take the vacant places; it is just as it is in human life: "The king is dead. Long live the king!"

The nourishment which they will need by-and-by is ready in the bark and elsewhere, for unscen forces have been all summer as busy as ants storing up food; besides this, there is power in all vigorous plants to absorb air, moisture, and warmth. The growth of a tree is a continued story, and just as the buds began in the first place they keep on from year to year; if they stop, there will be death.

There is another thing: more buds are provided than there is any present use for. Professor Gray says it "never happens" that they all grow; "If they did, there would be as many branches in any year as there were leaves the year before." Imagine the crowding and tangling if that could happen! But what becomes of the surplus buds? To answer the question fully would take us into a study of structure which there is not time for now; botany will tell you all about it. Enough now to say that some always remain undeveloped, and show as small bumpy places on the bark: some, after years of stagnation, start out and put forth a feeble, stripling bough on their own account; others (they have the significant name of "latent") survive for years without growing, and when other branches happen to be killed, "these come out to supply their place."

There is, however, one class of trees, such as the pines and spruces, where the loss of a member is not made up: and if you break off a branch it will be in vain for you to expect another. The tree will

But flowers forced in this manner have no fragrance that I am aware of, nor color; even the lilacs were pallid and scentless, though like all the rest under treatment they had an almost ethereal beauty, and lasted a long time.



A. butternut; B. sumach reduced one-third in diameter.

It is one of the beautiful wonders about magnifying the contents of buds that they show so crisp, shining, moist and fresh; you feel that you are seeing into the very heart of things, into life itself, or the source and home of life; no words can set forth to one who has not tried the experiment, the newness and dewiness and glister there is about the formless germ away in there so deep; it makes one think that the great pervading power, light, had been transfused, and held in those cells where light cannot be supposed to reach—and why not? Why should they not be moist and fresh and clear, when they assimilate in their being light and juices that penetrate and circulate as the life blood is felt along one's veins?

The sumach and horse-chestnut display the same palmated forms, and have the vivid hue like green fire; and each is a type of a distinct class of buds. Take for experiment the "stag-horn sumach" which every child is familiar with, such as you see herding, as one might say, in some waste place, which it covers with the great antlers from which it has its name. Who does not know it, and those immense drupes of seed-heads with the crimson plush coating the berries of pleasant acid, and the handsome, pinnated leaves which turn to such glorious dyes in autumn, as if a whole hillside was one blaze of banners in vermilion and gold?

It has not a nice stem at all, but is merely a rough stick, with a mealy pith inside of a little bark, that in its turn has a covering like the hide of an animal, along which, at short intervals, are shaggy tufts, marking the spots where the buds are. These unsightly things probably serve for protection also, though the bud is bedded in a little socket down in the wood—you literally dig to find it.

On the other hand, the buds of the mountain ash, and the horse-chestnut are wholly outside, and very prominently so, made up into pointed packages thickly coated with gum that is like tar, or black glue, or the daubiest and dingiest of varnish.

A branch of horse-chestnut is something that one can readily obtain in winter, and there are certain reasons why it is a singularly interesting study. We kept a succession of these on hand, operating on them, dissecting them, and watching to see what they would do. In the first place we took to pieces one of the small buds such as may be seen along the stem, and found its contents to be wool, in a compact bundle, which as it was handled gradually expanded into quite a little fleecy—birds would not need to have a chance at many such to get together the lining for a nest.

There is a vast deal of wool, cotton, floss, silk, linen, hemp, and unnamed textiles stored up in buds and seed-pods, so that no man need ever ask the question, where the birds find so much soft, warm material, not to mention all the insect-webs and cocoons.

It is worth one's while to collect a variety of specimens, and then watch the peculiar changes and the different leaf formations, and see what analogy there is between