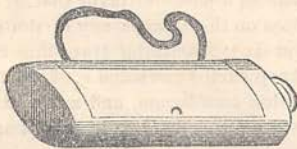


ago, when Mr. Blakely conducted me home. I was too tired to be happy even, when the said gentleman made some remarks, on our way thither, which to me did not sound exactly commonplace; at the time they only excited in my mind a wild wonder at the strength of a devotion that could exist after a day's fishing, and be expressed to so *clammy a me*. But since—well, never mind what has happened since—only I don't believe I'll be invited to any more piscatorial dinner parties.

THE COLLECTION AND PRESERVATION OF PLANTS.

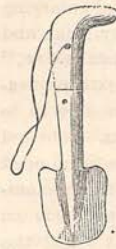
So numerous are the suggestions that have been made, and diverse the processes recommended to be pursued in the preservation of plants by different botanists, that it will be quite impossible for us, with the small space that we have at our disposal, to do more than give a brief outline of such a mode of procedure as we think to be the most simple and generally successful. It is not possible to lay down any process adapted for the treatment of all plants; the colors of some are so fugitive that it is impossible to preserve them by the ordinary mode of procedure, and practice alone will render the collector familiar with the best methods to adopt in such cases. The following materials and instruments will be found necessary to any one contemplating the collection of an herbarium: A vasculum; trowel or digger; field-book, drying paper, mounting paper, some wooden boards the same size as the drying paper, a lancet-pointed knife, a forceps, and a lens, or small microscope; the latter of which we have found to be the most convenient. It consists of a lens, to which is attached a brass ledge; along which, by means of a screw, a movable button traverses: through this button the forceps holding the object is inserted. It possesses the advantage of keeping the object stationary whilst under examination, and admits of the employment of a better light.

The Vasculum is a japanned tin box, which should be of such a length as to receive a plant



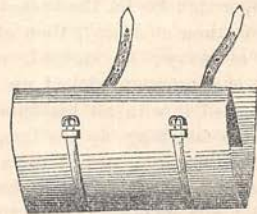
the full size of the herbarium paper: it ought to be convex on both sides; its capacity may

vary according to the fancy of the collector, but one about 20 inches long, by 8 or 9 inches wide, and 5 deep, will not be found too large:



it should be furnished with a handle at one end, and a couple of rings, through which a leathern strap can pass to attach it to the shoulders; the lid should be large, and fasten with a little catch.

The Trowel, or Digger, should be about 7 or 8 inches long; the spud $2\frac{1}{2}$ inches long, $2\frac{1}{2}$ inches wide at the top, narrowing gradually to 2 inches at the bottom. It should be provided with a leathern sheath, fastened to the waist by a strap, and the trowel also attached by a long string.



The Field-book is intended to press such specimens as will not carry home without undergoing injury. Its outer cover may be formed of two very thin boards, and secured by straps so as to give pressure. It should be inclosed in an oil-skin case, to protect from wet; and may be carried in the pocket, or attached to the neck by a string.

Drying Paper.—A sufficient stock should be provided so as to have one set of papers drying whilst the rest are in use. A convenient size for general purposes is about 18 or 20 inches long, and 11 or 12 broad. It is as well, however, to be provided with more than one size.

The Wooden Boards should be the exact size of the paper; twelve should be three-eighths of an inch thick, and two, which are to be employed on the outside, three-fourths of an inch. Some prefer sheets of tin to the use of boards on the inside, and they are certainly lighter and more convenient for carrying when on an excursion.

THE COLLECTION should always be performed during fine dry weather, as plants never keep well when collected wet with either rain or dew. When practicable, the entire plant should be collected, and the roots be carefully washed, to remove any dirt that may adhere to them, and then dried. In cases where the entire plant is too large for collection, such portions

as best illustrate its *generic* and *specific* characters should be gathered. In most cases it is necessary to have specimens of both flowers and fruit, particularly in the orders Leguminosæ, Umbelliferae, Compositæ, and others. In cases where the flowers appear before the leaves, it will be necessary to preserve the young twigs bearing the fully developed leaves as well as the flowers; and when the sexes exist as separate flowers, both male and female flowers should be collected. When bulbs or tubers abound in mucilaginous matter, it will be found advantageous to inclose them in a little paper, so as to keep the drying paper free from dirt. In the collection of Ferns two fronds should be selected—one to exhibit the under surface with the reproductive organs, and the other to show the upper surface; a portion of the rhizome should also be preserved. Grasses and sedges are generally easy of preservation; the entire plant should be collected, and when it exceeds the length of the paper it may be bent and rebent without injury. If, on returning from an excursion, circumstances do not admit of immediate pressing, avoid putting the plants in water; *they will keep much better in the vasculum*; and, should the weather be dry and sultry, they may be *sprinkled* with a small quantity of water. When portions of shrubs, or plants of woody texture, are required to be preserved, the bark should be slit up, and the woody portion removed.

THE PRESSING.—In reference to the best means of effecting this branch of the process the greatest difference of opinion exists. Bal-four says the pressure ought not to be less than 100 pounds, and recommends the use of heavy weights to effect it. He also suggests the use of a rope, tightened by a rack-pin instead of leathern straps, attached to the boards used as a press when on an excursion, as in case of an accident the straps may be difficult of replacement. Withering considers the pressure should be gradual, and this accords with our own experience. Some make use of a press, and obtain the requisite degree of pressure by the employment of screws or wedges; others adopt the more simple contrivance of a flat board and some books, which we have found to answer very well. We have even heard of a gentleman acting the part of a press himself, by reposing at night on the plants he had collected during the day. In our opinion, one of the simplest and best methods consists in the use of a box exactly the same size as the paper and board employed; the requisite degree of pressure being obtained by the gradual addition of

pebbles or sand, and of these we have found the former to be the most convenient.

ARRANGING AND DRYING.—First place a parcel of four sheets of the drying paper upon one of the two thicker boards; then take a sheet of the drying paper and lay it evenly upon it; and having selected a plant for preservation, place it on the inside of the right-hand sheet, and arrange the different parts of the plant so as to illustrate its principal generic and specific characters, imitating as much as possible the natural appearance of the plant; as each part is arranged, retain it in its assigned position by means of small pieces of paper about four inches square, upon which a small weight may be placed. Having completed the arrangement of the plant, remove the weights one by one, and allow the fly-sheet to cover it; upon this place another parcel of four sheets, and proceed as before to lay out another plant. When as many as a dozen plants have been arranged in this manner, place one of the thin pieces of wood or tin upon them, and proceed as before, until a sufficient number have been prepared for pressure; now place upon this one of the thick outer boards and the box containing the pebbles, which should be added to from time to time, that the pressure may be gradual. After twelve hours' pressure, remove each plant with the forceps to dry paper, and proceed in exactly the same manner as before described, taking care to open out all the crumples and rectify previous mistakes, arranging the plant as much as practicable in imitation of nature. After intervals of twelve hours the same process should be repeated, gradually increasing the pressure until the plants be dry, which will generally be the case in a week or ten days, but varies with different plants. Some will dry with only one or two changings, whilst others occupy a long time; and some, as Orchids, Sedum, and Sempervivum, are exceedingly difficult to dry at all. To accomplish the drying of these heat is generally employed; and they are submitted to a process of ironing with much success. Some speak very highly of this mode of proceeding in general, being of opinion that it preserves the colors of the flowers better than the ordinary process. From experience it seems highly probable that different flowers require particular temperatures to succeed well in preserving their colors; and the method of treatment peculiar to each case is only to be acquired by practical experience. Some succeed in preserving the colors very well by the use of heated sand.

PRESERVATION.—When the specimens have been sufficiently dried, they should be carefully transferred with the forceps to a sheet of good thick white paper, in which they may either be preserved loose, or fastened to the right-hand sheet of the paper by means of thread, glue, or gum. Of these we prefer the former, as the two latter are apt to attract insects, which will in a very short time completely destroy an herbarium; to guard against their attacks, it is as well to brush the plants over with a spirituous solution of bichloride of mercury, consisting of two drachms to the pint. Some prefer keeping the plant loose in the paper; they are certainly easy of examination under these circumstances. The botanical name, natural order, habit, and date of collection, together with any other note of interest, should be written on the right-hand corner of the inner side of the sheet. The natural orders that generally suffer most from the attacks of insects are Cruciferae, Euphorbiaceae, Gentianaceae, Umbelliferae, Salicaceae, and Liliaceae.

A MEMORY.

BY HARRIET E. BENEDICT.

WHEN February, cold and gray,
Shook the light snow-flakes from his wing,
She smiled to greet the dreary day,
And said, "Twill soon be Spring."

Ah! daily did our prayers arise,
That unto her the passing hours
Might bring soft winds and sunny skies,
And the sweet breath of flowers.

The May-time, that she loved the best;
The days of light, and song, and bloom,
Ere death should bring the unbroken rest,
The silence of the tomb.

But late in this, our northern clime,
The hours such gifts of beauty bring,
And wearily the passing time
Moved onward to the Spring.

The March winds round our dwelling-place
Pealed their wild chorus through the sky,
And as we watched her pallid face,
We knew that she must die.

Yet life's dim taper flickered still,
And with new brightness seemed to burn,
When the storm ceased, and vale and hill
Smiled back the smile of morn.

Wandering beside the unchained brook
That day, a group of children spied
A violet, peeping from its nook,
And brought it to her side—

In all its delicate loveliness;
As if a gentle minister,
Her dying eyes to cheer and bless,
The Spring had sent to her.

At eve we wept—a mourning band;
And the sweet flower she kissed and blest,
We placed within her icy hand
To wither on her breast.

Ah, how sad memories come to me!
Without, the sunshine and the rain
Tell of the April days, which she
So longed to win in vain.

For the glad spring-time now is here,
With its rich gifts of bud and bloom;
The gifts which in the vanished year
We laid upon her tomb.

But she, whose clear immortal eyes
Are shadowed by no vain regrets,
Views not with us its changing skies,
And fading violets.

And to the heavenly heights afar
We lift our eyes, and pray that thus,
As spring eternal came to her,
It yet may come to us.

THE STORY OF AN ATOM.—The atom of charcoal which floated in the corrupt atmosphere of the old volcanic ages was absorbed into the leaf of a fern when the valleys became green and luxuriant; and there, in its proper place, it received the sunlight and the dew, aiding to fling back to heaven a reflection of heaven's gold, and, at the same time, to build the tough fibre of the plant. The atom was consigned to the tomb, when the waters submerged the jungled valley. It had lain there thousands of years, and a month since was brought into the light again imbedded in a block of coal. It shall be consumed to warm our dwellings, cook our food, and make more ruddy and cheerful the hearth whereon our children play; it shall combine with a portion of the invisible atmosphere, ascend upward as a curling wreath to revel in a mazy dance high up in the blue ether; shall reach the earth again, and be entrapped into the embrace of a flower; shall live in velvet beauty on the cheek of the apricot; shall pass into the human body, giving enjoyment to the palate, and health to the blood; shall circulate in the delicate tissues of the brain; and aid, by entering into some new combination, in educing the thoughts which are now being recorded by the pen. It is but an atom of charcoal; it may dwell one moment in a stagnant ditch, and the next be flashing on the lip of beauty; may now be a component of a limestone rock, and the next an ingredient in a field of potatoes; it may slumber for a thousand years without undergoing a single change, and the next hour pass through a thousand mutations; and, after all, it is only an atom of charcoal, and occupies its own place, wherever it may be.