

Directions for Collecting & Preserving <sup>in</sup>  
Plants in Foreign Countries for a Herbar.

This is a much simpler process than is generally imagined by those unpractised in it, and travellers have been often deterred from collecting specimens by the time and trouble required for preparing them in the way that has by many been recom<sup>d</sup>.

The chief circumstances to be attended to are, to preserve specimens of plants in such a manner that the moisture may be quickly absorbed, the colours as much as possible preserved, and such a degree of pressure given them as that they may not curl up in the act of drying.

For this purpose let a quantity of separate sheets of paper be obtained of a folio size. Common brown paper is upon the whole the best, except for the very delicate kinds, w<sup>h</sup> require paper of a smoother and somewhat more absorbent texture. Blotting paper, however, especially

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in warmer climates, will absorb the moisture too rapidly, and by repeated dampening & drying will soon be rendered useless. —

Two boards sh<sup>d</sup> be provided, — one for the top, & the other for the bottom of the mass of papers. —

For pressure at home or when stationary for any length of time in a given spot, nothing serves better than a weight of any kind (a folio-book, a large stone, &c.) put upon the topmost board; and the great advantage of this is, that the weight follows the shrinking of the plants beneath.

Whilst travelling, three leathern straps with buckles sh<sup>d</sup> be procured, two to bind the boards transversely, and one longitudinally. — It will be further desirable to have a number of pieces of pasteboard of the same size as the paper, to separate different portions of the collection, either such as are in different states of dryness, or such as by their hard woody nature might otherwise ~~injure~~ press upon and injure

injure the more delicate kinds. —

Thus provided, gather your specimens, — if the plants be small, root and stem, — if large, cut off branches a foot or a foot & a half long; selecting always such as are in flower, and others in a more or less advanced state of fruit

Place them side by side, but never one upon another on the same sheet, and lay upon them, ~~one~~, two, or three sheets, according to the thickness of the plants, or their more or less succulent nature; and so on, layer above layer of paper and specimens, subjecting them then to the pressure. —

As soon as you find the paper has absorbed a considerable portion of the moisture (which will be according to the more or less succulent nature of the plants, and the heat or dryness of the season or climate), remove the plants into fresh papers and let the old papers be dried for use again, either in the open air or sun, or in a heated room, or before the fire.

As to the spreading out of the leaves and  
flowers

flowers with small weights, penny pieces, &c., it is quite needless. The leaves and flowers are best displayed by nature in the state in which you gather them, and they require little or no assistance with the hand, when laid out upon papers, to appear to the best advantage, especially if put in carefully on being fresh gathered.

If the specimens cannot be laid down immediately on being gathered, they sh<sup>d</sup> be preserved in a tin box, or failing that in a rush basket, where they will keep fresh for a day or two, if the atmosphere be not very much heated. —

Some very succulent plants, such as Cacti, *Sempervivum*, *Sida*, Orchidaceous plants which grow on trees, &c, require to have the specimens plunged in boiling water for a few seconds before they are pressed, to destroy life and thus accelerate the process of drying. —

Plants with very fine but fragile leaves, as the Fern tribe and the Fleathes, and some with compound winged leaves, to prevent their leaves falling off, or their parts separating  
may

may either be treated in the same manner,  
or dried in very hot paper, or with a hot iron.

In many cases, especially in warmer climates, the traveller will find the process accelerated by exposing the parcel (being up and properly secured) to the open air when the weather is favourable, and the circulation of air ~~will be~~ through it will be promoted if the sheets on which the specimens are laid be placed alternately back and edge.

In tropical climates he will find it necessary to shift his specimens at least once a day, and by changing them into hot paper, and crowding such specimens as are dry, he will be enabled to form a considerable collection in small compass and in a very short time. — Four or five shiftings will generally be sufficient to complete the process, which is ascertained by the stiffness of the stems and leaves, and by the specimens not shrinking when removed. — They should then be placed between dry papers and formed into parcels of moderate thickness, and either  
packed

packed in boxes, or well secured as parcels covered with oil cloth. —

Palms having their fructification and leaves very large, can hardly be subjected to pressure; a few flowers shd be pressed, and the whole cluster of flowers & fruit, as well as a leaf, may be simply dried in the air and afterwards packed in boxes for transportation. —

The greater number of Cryptogamic plants may be dried in the common way, such mosses as grow in tufts being separated by the hand. But both mosses and lichens as they can at any future time be expanded by dampening, may be dried by the travel without pressure and put up, either each species separately or several together, in small paper bags or canvas bags, carefully marking the place of growth and the date when gathered. —

If the fruits of plants are of a small size so as to be preserved in a herbarium, they shd be gathered with the leaves & branches

are the flowers; if of a large size they sh<sup>d</sup>  
be kept separate

Dry fruits demand no care, except that  
those that split into valves sh<sup>d</sup> be tied  
round with a little packthread. —

Pulpy fruits are only to be preserved in  
spirits or pyroligneous acid diluted in the  
proportion of eight parts of water to one  
of the concentrated acid. — In all cases  
the separate fruits, whether dry or preserved  
in a fluid, sh<sup>d</sup> have a number attached  
to them, referring to the flowering spe<sup>ies</sup>  
of the plant. Seeds, whether for examination  
or intended to be sown, sh<sup>d</sup> be gathered per-  
fectly ripe, put up in brown paper bags,  
and kept dry in a box. —

With the spec<sup>ies</sup>, fruits & seeds, there  
sh<sup>d</sup> be slips of paper, on wh<sup>ch</sup> are to be written  
the uses, native names, and general appear-  
-ance of the plant, whether herbaceous,  
shrub, or tree, its sensible qualities, and  
the colour & form of the flowers; its situa-  
-tion, if dry or damp, the nature of the soil,

the elevation above sea level, and the date  
when gathered. —

As soon as a sufficient number of  
spec<sup>ies</sup> are collected, no time sh<sup>ould</sup> be lost  
in transporting them to their place of des-  
tination, since, in warm climates espec-  
-ally, they are liable to the attacks of insects.

These attacks, wh<sup>ich</sup> are often completely  
destructive to the spec<sup>ies</sup>, may in many  
cases be prevented by pitching the boxes,  
and by putting in them, or in each par-  
-cel, cotton dipped in petroleum, spirits  
of turpentine, or small pieces of Camphor,  
and the Captains of <sup>the</sup> vessel sh<sup>ould</sup> be partic-  
-ularly requested to keep them in a dry or  
airy part of the ship. —

Specimens of the woods of from six to  
eight inches in length, the entire round  
of the trunk, or branch of small, and seg-  
-ments from centre to circumference of  
the larger kinds, in both cases with the  
bark, sh<sup>ould</sup> also be preserved — not only of  
the more remarkable trees, but also of the  
woody



woody climbers, wh<sup>ch</sup> often exhibit peculiarities of structure highly interesting to the botanist. When spec<sup>imens</sup> of woods are preserved, they sh<sup>ould</sup> be marked with numbers corresponding with the flowering branches of the tree in the collection of spec<sup>imens</sup>; and when flowers cannot be obtained, a small branch with leaves & <sup>or</sup> fruits sh<sup>ould</sup> always be taken. —

Gums, resins, and other remarkable products sh<sup>ould</sup> also be collected, their uses if known noted, and reference made by numbers to the plants they belong to. —

Useful and ornamental plants w<sup>ould</sup> of course form the most important parts of such collections; but even the weeds of foreign and little known countries, the grasses, ferns, mosses, lichens, and sea weeds will prove extremely valuable to the scientific botanist. —