

III

The French Gardener Overseas

There are two principal reasons for giving time and space to the detailed instructions drawn up by André Thouin for the gardener who accompanied La Pérouse, which would serve again to guide the gardener with Entrecasteaux. The gardener was officially and socially subordinate to the botanist on board, the one a savant, the other a skillful workman, albeit a well-trained horticulturalist. Yet, he was also indispensable to the botanist for the management of live plant materials that were wanted for scientific observation in Europe; and he had the additional, humanitarian responsibility for what Alan Frost has called *the antipodean exchange*, the transmission of *useful plants* between Europe and the exotic world.

Frost has effectively described how the British in the 18th century developed a viable network of trading stations overseas by planting gardens and fields that could sustain settlement while providing frequent refreshment outposts for trading vessels on long voyages. The conception was suitable for a maritime nation, and the French had nothing comparable, as he reveals by describing the astonishment of the French when the Baudin expedition put into Sydney in 1802.³⁹ The French neglect of such development had already been apparent from the instructions prepared by Thouin, which were a clear reflection of the humanitarianism of the French Enlightenment and bore no resemblance to official British practice.

Historians have always known of the vast importation of exotic and unknown plants to Europe in the 18th century, but generally have remained unaware of the laborious procedures required to preserve the viability of incoming and outgoing plant material. Specimens intended for herbaria, to be sure, were put into presses for drying and preservation in the conventional manner. But the botanical mission had even broader dimensions: the selection of useful plants and trees for French gardens and nurseries where they could be acclimated for reforestation or ornamentation; and the donation of French fruits and vegetables to peoples overseas for their nutritional benefit.

If, in the outcome, the French realized greater profit from the exchange than did the exotic peoples, their greater success should be attributed to their more

39. Alan Frost. 1996. "The Antipodean Exchange: European Horticulture and Imperial Designs." Miller & Reill. *Visions of Empire*. Cambridge: Cambridge University Press, pp. 58-79.

advanced technical knowledge and their conception of progress. Whereas, the absence of what we would today call *an infrastructure*, whether institutional or intellectual, can defeat the best intentions of reformers. The inequitable outcome has led to the quick-and-easy charge of deliberate exploitation, when the very opposite was intended. Thouin's instructions expose, what is more, the careful preparations for a fruitful exchange.

Of all the presents the munificence of the king means to give to the inhabitants of newly-discovered countries, Thouin wrote, plants useful for the sustenance of mankind are unquestionably the ones that will bring them the most durable benefits and are most likely to increase their happiness. Those vegetable-garden plants and fruits that require no preparation must take first place, while those that need only dry cooking to become edible must be given second rank. The latter alone should be given to people who have no vessels appropriate to cook foods in liquids. Furthermore, the seeds of vegetable varieties that require a painstaking, scrupulous cultivation should not be given. Such seeds, left on their own in climates so different from that of their origin, or more or less abandoned to a crude cultivation, soon degenerate into their primitive species.

To make our vegetable shipments in the form of seeds, he continued, is undoubtedly the least expensive way to acquire them, the easiest way to transport them, and the surest way to multiply productions from one climate into another. The most scrupulous attention must be paid to acquire seeds from the most recent harvest that are well-ripened and completely clean. Any found to be wrinkled or bitten by insects should be carefully excluded, not only as infertile, but as noxious to the conservation of the remainder. Once assembled, the seeds must be divided into two groups. The first group includes only those seeds that merely require shelter from air and humidity for preservation. The second group includes those that must be covered with sand or soil to preserve their germinative property, such as our fruit-tree kernels or the seeds in several plants in the *Umbelliferae* (Carrot Family), etc. Those in the first group need to be enclosed in bags of brown paper, and then be placed in tin boxes that should be made fast, as hermetically sealed as possible. The second group should be put in tin boxes in layers with their soil or sand, and then very tightly sealed.

The tin boxes, after proper sealing, must be enclosed in stout packing-cases, which are then wrapped in oilskin. They must be stored in that part of the ship least accessible to humidity and must be sheltered from extreme heat and deep cold, and left unopened until the moment when the seeds are to be planted. It is improbable that the seeds will have a single destination. To avoid exposing seeds meant for different locations, it would be convenient to divide the totality of the assortment into at least four sections, so that only one packing-case will need

to be opened for a given planting, avoiding unnecessary openings that could be prejudicial to the seeds.

Order being absolutely indispensable, the gardener will take care to write the name of the seed on each packet and to inscribe it on a register as the packets are successively put in the tin boxes; and will number those boxes correspondingly in his register, placing them in order by number in the large packing-cases.

When going ashore in a place where it is proposed to make some plantings, the gardener's first concern must be to determine the regional temperatures and to note whether the products of the soil, the annual plants in particular, are growing, vegetating, or withering. Such observations will guide him in a choice of seeds suitable to the climate and suggest the exposures most favorable to the planting. In very cold countries, if you should arrive in autumn or winter, abandon any idea of sowing the seeds of annuals. They will either not germinate or will be destroyed by the first frosts. You can risk some seeds from woody plants such as pips from apples or grapes, or the kernels from different fruits. Those seeds will not come up before spring and will preserve themselves despite the cold. If you arrive in the spring or summer, then all seeds likely to acclimate themselves may be planted, taking care to choose the soil and exposure suitable to each variety.

In many hot countries, dryness can be the factor most harmful to the multiplication of plants. It is best to select moist soils, stream banks, and the low terrain near the sea. Shady places ought to be preferred for the establishment of gardens.

Once the places for planting have been selected, the gardener will have to work the soils in preparation for seeding. He will then plant his seeds and watch over their development for so long as the ships remain. If he can inspire a love for these plantings in a few of the local natives, getting them to understand the value of those products that are the objectives, he will doubly fulfill the benevolent goal that we hope for his mission.

To avoid overlooking any of the ways that can make his voyage useful and gratifying, the gardener must maintain an exact record of all his activities: the date of his plantings, their success, the development of the plants and their outcome. When he has the opportunity to observe that cycle, we shall be provided comparative data that can improve our own cultivation.

As a number of plants exist that could be useful to the inhabitants of places visited, but whose seeds do not possess the property of perpetuating our satisfactory varieties such as the greater part of our fruit trees (the products of a lengthy horticultural development), it is advisable to carry several live individuals of each of those trees. Despite that, you should not fail to carry an abundant supply of seed from such trees. They will provide wild fruits such as those that fed our

ancestors, useful to nourish people even less civilized than they were, providing them a foundation of wealth from which their improved skills will henceforth be able to extract the greatest benefit.

The Transport of Live Plants

As it is not now possible to dig up plants in the open terrain as they are in full leaf, you must buy them in pots from tradesmen in Paris and take them to the point of embarkation. The transport of live trees can only be made in packing-cases where they can vegetate during the voyage. Use a tub 40" long, 20" wide, and 20" deep, pierced at the bottom with a dozen holes for the run-off of excess water. Over the top, there should be a triangular framework upon which can be fitted wire netting, some skylights, and some shutters to provide for free circulation of air, to increase warmth when there is need for it, or to shelter from the cold.

(Thouin's list of recommended fruit-tree species was appended to his memoir.) It is advisable to obtain only young individuals, branched along the full length of the stalk. Take care that they are well-shaped, vigorous, and that the grafting was done as close to the root as possible.

You pack them in the following manner: At the bottom of the tub, over the holes cut for drainage, you place plaster stones to prevent the soil from washing away during irrigation. Over them put down a bed of good soil 3" thick and tamp down lightly. The first layer of trees goes over that bed, selected from the largest and, in particular, from along those like figs, grapevines, and cherries, which tolerate having their stalks buried a bit deeply. After removal from the pots, the balls of those trees must be placed as close to each other as possible, the spaces left between them to be filled with heath-compost, compressed as much as possible so that the first layer forms a solid mass. A 2"-bed of heath-compost is then added to cover the first layer.

The second layer must similarly be arranged with earthen balls against each other, the tallest stalks in the middle, the shortest stalks, by gradation, on the edges. All spaces must be filled with heath-compost without disturbing the stalks in the lower bed. Assuming that the stalks had three or four buds when taken from the ground, this packing should suffice for their preservation. Consolidate the entire package, finally, by knocking the packing-case against the ground or by pressing with a fist; so that no empty spaces remain, and no jolts from carriages or the rolling of the ship can provoke any displacement.

The contents of the packing-case may then be well-watered. Within a few days thereafter, it may be taken to Brest by wagoners. The lateral shutters should be closed during that trip to reduce the loss of moisture, but the two small openings on the extremities must remain open for circulation of air so that the plants do

not rot. Upon arrival in Brest, the gardener should lift the wire netting in order to clip any shoots put out by the trees.

Management of the packing-cases during the voyage will be confined to irrigations when necessary and to protect the trees from extremes of hot and cold: whether by covering them by canvas during the day, and providing them the most air possible during the nights; or by putting them below deck when on cold stretches of ocean. It will be helpful from time to time to use a pruning-knife on overly vigorous plants that, otherwise, might harm neighboring plants.

Once the trees reach their destination, they will be removed as carefully as possible with their earthen balls. They should be planted where the exposure and the nature of the soil is most suitable for each of them. During his sojourn, the gardener will watch over their preservation. The gardener will only remove from the packing-cases the stock meant for that particular place. The vacated space should be refilled with such local productions that he believes ought to be useful in Europe. The gardener, finally, must strive to make the local inhabitants understand that these trees are presents, and that they must care for them conscientiously in order to benefit from their usefulness.

On the Collecting of Plants that can be Useful in Europe and their Preservation During the Voyage

Seeds are best collected in their full maturity. But, as the brief sojourn on those islands where you go ashore may not allow the time to wait for full maturity, seeds may still be collected by taking indispensable safeguards.

Herbaceous plants, whose seeds are found to have reached only two-thirds or three-quarters of their maturity, should be pulled up by the roots, tied in bundles and taken aboard ship, where they must be hung in a place sheltered from sun and moisture. A portion of seeds from these plants will mature without question within six or eight days, at which point they may be collected.

In an instance where you are determined to collect seeds from an interesting plant, but find the seeds barely set, the project need not be abandoned. Such plants may be dug up, retaining a ball of soil around the roots, and planted in baskets. During the first days thereafter, the baskets should be covered with matting, the plants inside watered morning and night. You will discover that maturation of the seeds will occur slowly during the voyage, and you will not have had to forgo an often unique opportunity to procure a valuable plant for Europe.

When you have the good fortune to encounter fully matured seeds, it remains important to collect them in a prescribed manner for their preservation. Not only should you avoid shelling them, but, on the contrary, they should be collected with their envelopes and their peduncles. Whether borne within pods, siliques,

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