XII. *Experiments on checking the too luxuriant Growth of Fruit-Trees, tending to diſpoſe them to produce Fruit: In a Letter to Mr.* Peter Collinſon, *F. R. S. from* Keane Fitzgerald, *Eſq*; *F. R. S.*

Dear Sir,

Read Feb. 12, 1761. WHEN you did me the favour of calling on me at Fulham, in autumn 1759, I ſhewed you ſome experiments I had made, in order to check the too luxuriant growth of young trees; which I promiſed to give you an account of, if they ſhould ſucceed according to my expectation.

I had obſerved a method taken to bring young trees to bear, when planted in too rich a ſoil, by cutting away part of the bark from ſome of the main branches. This method, as I am informed, has brought them ſoon to bear plentifully; but leaves an ugly wound, the wood continuing bare, and apt to rot in that part.

I had ſome young plumb and cherry trees planted againſt a north pale, in a very rich ſoil. The plumb-trees had, in three years, ſhot forth the extremities of their branches to 15 or 16 feet diſtance, and had quite covered and overtopped the pale. As the cutting away of any of theſe branches would make the reſt ſhoot the ſtronger, I made the following experiments, about the middle of Auguſt 1758.

I made a circular inciſion on the main arms of an Orleans plumb-tree, near the ſtem, quite through the

the bark, where it was ſmooth, and free from knots. About 3 or 4 inches higher, I made another inciſion, in the ſame manner; then making an inciſion lengthways, from the upper to the under circumciſion, I ſeparated the bark intirely from the intermediate wood, covering it, and alſo the bare part of the wood, to keep the air from the wound; and letting them remain ſo for about a quarter of an hour, when the wound began to bleed, I replaced the bark as exactly as I could, and bound it round pretty tightly with baſs, ſo as to cover the wound intirely, and alſo about half an inch above and below the circumciſions.

I treated the intire ſtem of a duke cherry-tree in the ſame manner, about 10 inches from the ground, and below all its branches. Alſo ſeveral branches of a morelli cherry-tree; and the main arms of two perdrigon plumb-trees. Theſe two laſt were old trees, which had been cut to the ground about four years before, and had ſhot forth very luxuriant branches, but had not ſince borne any fruit.

In about a month's time, the bark of theſe began to ſwell, both above and below the binding; when I unbound each of them, and found the ſeveral parts, that had been replaced, to be all fairly healed, except one, which was on the main arm of the perdrigon plumb-tree, part of which was healed, and about an inch in breadth of the bark, on one ſide of the longitudinal inciſion, remained looſe, and afterwards dropped off. I bound them all again lightly with baſs, and let them remain ſo, until the beginning of the ſummer following; when I took off the binding intirely, and found them all healthy, and flouriſhing.

Each

Each of theſe trees bore plentifully that ſeaſon, though, in general, reckoned a bad year for fruit.

This induced me, in the beginning of Auguſt 1759, to make the like experiments on ſeveral other young trees; ſome, that had not yet borne any fruit, and others, that had borne but a ſmall quantity; particularly, two young pear-trees, that never yet had any bloom. I treated the main arms of one of theſe in the manner already deſcribed, and alſo ſeveral of the branches, that grew on theſe arms; likewiſe one of the arms of the other pear-tree. The firſt of theſe bore a ſurprizing quantity of fruit laſt ſummer; and the circumciſed arm of the other bore a moderate quantity, though no other part of the tree had any appearance of bloom.

I made alſo the following experiments, on two branches of different young apple-trees, as nearly of the ſame ſize as I could find. I cut off the bark of theſe, as exactly as I could by a gage; changing them, and putting the bark of the branch of one tree on the branch of the other. I find, by the minutes I took, that a ſmall ſlip of wood came off with the bark of one, and the bark of the other had a leaf-bud on it; which branch had alſo two apples growing on it. The bark of each of theſe healed perfectly, and the apples remained on, and ripened with the reſt: the leaf-bud puſhed forth leaves, and both the branches bore ſo very plentifully the laſt ſummer, that one broke down with its load; and the other would alſo, probably, have ſuffered the ſame fate, but that I had it ſupported. Theſe were both nonpareil apple-trees, planted in aſparagus beds.

I changed the barks of the branches of a peach and a nectarine tree; that, which was placed on the peach-tree, healed perfectly, and the branch produced a quantity of bloom laſt ſeaſon; but the bloom of the whole tree, as well as of ſeveral others againſt the ſame wall, was intirely blaſted. The gardener cut off the branch of the nectarine, when he was pruning, and nailing the trees, as he did of ſeveral others, on which I had made experiments of the ſame kind; againſt which he declared his opinion ſtrongly, at the time of making; and ſaid, he was ſure the branches would all die, and the wall be quite bare in theſe parts; which, I ſuppoſe, he imagined would be a reflection on his ſkill in pruning and nailing a tree.

About the beginning of November laſt, I cut off one of the arms of the perdrigon plumb-tree, which had the experiment made on it in 1758, to examine what effect it had on the wood; to which, I found the bark between the circumciſions more firmly united, than in any other part. There was a dark vein, which ran through the wood in that part, which appeared of a harder texture than the reſt of the branch.

On examining the minutes I had taken from time to time, of the obſervations I had made on theſe experiments, which I imagined I had been very exact in, I find I had omitted noting down any relative to the effect they had on the growth of the circumciſed branches. I did not compare them by meaſure with other branches; but as far as I can ſpeak by recollection, it has retarded the growth. I can be almoſt poſitive, that the cherry-tree, mentioned in the ſecond experiment, the trunk of which had been circumciſed

cumciſed below all its branches, was, at the time, the largeſt of half a dozen of the ſame kind, which were planted at the ſame time, and is not ſo at preſent. I am ſorry I cannot be ſo circumſtantial in this particular, as I endeavoured to be in others; and am,

Dear Sir,

Your affectionate

humble ſervant,

Poland-Street,
Jan. 19, 1761.

Keane Fitzgerald.

XIII. *An Account of the* Urtica Marina: *In a Letter to Mr.* Peter Collinſon, *F. R. S. from* Joſeph Gaertner, *M. D.*

Dear Sir, London, Feb. 12, 1761.

Read Feb. 12, 1761. HAVING lately viſited the ſouthern coaſts of Cornwall, I met with ſeveral new and undeſcribed ſorts of the urticæ marinæ, called by Mr. Hughs the animal flowers. I therefore take the liberty of ſending you the incloſed drawings, [*Vide Tab.* I.] together with a ſhort deſcription of them, which, I flatter myſelf, will not be diſagreeable to you, as theſe animals, in regard of the various and ſurprizing ſhape of their bodies, and on account of the few imperfect deſcriptions, that have hitherto been given even of the common ſorts of them, may not be unworthy the notice of the curious. The name of urtica, as the celebrated Mr. de Reaumur,