

GARDENING NOTES

(By MR. J. JOYCE, Landscape Gardener, Christchurch.)

ORIGIN AND IMPROVEMENT OF PLANTS.

Most of our vegetables and garden plants were originally found growing wild in their native countries. Very few knew their value until chance, or some other circumstances, revealed their worth to some observant individual who had a taste for investigation. Of course, the chemist was called upon to investigate and decide on the merits of the species of plants suited for domestic use. And when this was settled the enterprising gardener was brought on the scene to improve the quality of the plants. For instance, we will take the carrot as an example. The wild carrot had a long, wiry root, with no tendency to develop into its present state. Out of a quantity of seed sown in good ground one or two plants showed a tendency to develop stouter roots than the others. All the inferior plants were thrown away, and seed saved from the improved form. This seed was again sown in well cultivated soil, and the outcome was a greater quantity of better and improved form of roots, with less of the peculiarities of the wild plant about them. The inferior ones were again discarded, and seed saved from the best plants. Next time the crop was nearly perfect, and the experimentalist persevered until every seedling was a perfect plant, and thus the carrot was established. Sometimes you may see in a paddock a few plants that reverted back to the original wild state. They can be easily detected, as they go to seed the first season, whilst the true carrot will not seed until the second year. If seed were sown from those inferior plants, you would have a field of wild carrots such as the original one. Most of our improved plants have a tendency, when uncared for, to revert back to their wild state. But cultivation, and the care and skill of the farmer and gardener keep the variety true. So, too, with the cabbage tribe. When the cauliflower first appeared, the seed was sown just in the same way until the strain was fixed, and the different varieties have been the result of careful cultivation, such as the establishing of the early and later kinds. To preserve varieties pure they must be carefully guarded against being fertilized by other kinds of the same species. On this account seedsmen procure their seeds from different people, so as to get the pure variety. One man grows one variety, and another a different kind, so that there will be no chance of mixing the different varieties. It is in this way we have preserved and improved the species and variety of our cultivated plants. In the same manner peas and beans have been brought to perfection. For instance, a variety, which usually produced say four seeds in a pod, had by chance a few pods bearing six seeds. Those seeds were sown, and some produced six seeds and some less. The peas from the pods bearing six seeds were sown again until the variety was fixed, and a new one was added to the list. The foregoing description will give a pretty good idea of how the race of domestic plants has been improved, and perpetuated for our use and benefit. Everyone knows the history of the potato, and how cultivation and cross-breeding have brought the tuber to its present perfection: so, too, with celery, sea-kale, and asparagus, which grow wild on the seashore. Care and cultivation in the selection of seed have brought these to their present state. In like manner in the breeding of animals the same care must be taken in the selection, if success is to be attained. The best plants must be selected, or the variety would soon deteriorate and go back to its former state.

Of course a great variety of plants have been improved by cross-breeding and hybridising. By cross-breeding is meant the inter-mixture of varieties, and by hybridising the inter-mixture of species. It is by this process we have multiplied all the beautiful flowers that adorn our garden, and many of the beautiful fruits of our orchards. What would our choicest garden flowers be if it were not for the skill of the gardener in improving them in this manner? The chrysanthemum,

the dahlia, the pelargonium, and hundreds of others were simply single wild flowers, when first introduced, but the skill and perseverance of the gardener have given us all the beauties which our gardens possess to-day. The cultivator of ornamental plants has a very interesting field to work upon. The opportunity of growing new varieties by hybridising will be to him an endless source of pleasure. He must be a man of great patience and perseverance, waiting and watching for the results of his handiwork, and how anxious he must be to see if it comes up to his anticipations. He sees two plants of the same variety—perhaps one possessing a robust constitution, and the other a very delicate one, not able to resist our cold chilly winters,—and he comes to the conclusion that if these were crossed the result would be a very serviceable variety possessing the best characteristics of the plants. It is by this procedure that we possess to-day trees and plants suitable to all conditions and requirements. We owe a great debt to the practical gardener for all the beautiful flowers we have, and also for the many useful vegetables which are such a welcome addition to our cuisine. The botanist also deserves our gratitude. What hardships has he not undergone in travelling through forests, and over mountains—north, south, east, and west,—in search of nature's hidden treasures, and with which he came back laden, so that we may beautify our pleasure grounds with plants and flowers, and enrich our gardens with fruits and vegetables.

CATHOLICS IN CHINA

If one did not read the Catholic papers one would never guess the extent of the Catholic foreign missions (remarks the *Boston Pilot*). There is a studied resolve in some sections to ignore them. A few nights ago a Protestant minister from Hankow told the Churchman's Club of Providence about the progress of missionary work in China. He said: 'The early missionaries thought that if after 100 years had passed there were 1000 converts it would be a miracle. To-day there are, outside the number who have become Roman Catholics, 400,000 Christian communicants.'

You may interpret that remark as you will. But let us have a few facts about the Catholic missions that are so dismissed by way of parenthesis. We find this paragraph in *The Workers Are Few*: 'China, with her 401,000,000 inhabitants, in 1800 had but five poor missions, and the Catholics there were reduced to 202,000. To-day in China we have one diocese, 41 vicariates, and four prefectures apostolic, respectively governed by 43 bishops and four prefects apostolic. In China to-day there are 1,200,000 Catholics, 1379 missionaries, 631 native priests, 1886 nuns, and about 7802 catechists. Besides these there are some 10,000 churches and chapels, and 154 seminaries.' This was in 1911.

We have in China three times as many communicants as have all the Protestant denominations put together. Yet, we repeat, unless one reads the Catholic papers one would be led to believe that the Catholic Church is a negligible factor in China. When we get the facts we see how much reason we have to rejoice at the progress of our missions. And yet we Catholics are just beginning to realise what we could accomplish.

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