AGRICULTURAL EXPERIMENT STATION
Oregon State Agricultural College
W. A. Schoenfeld, Director
Corvallis

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PROPAGATION OF ROSES

W. P. Duruz, Professor of Pomology

Introduction

Perhaps no other flower has so much romantic history and sentiment as the rose. It has played an important part in the legends and literature of the people of all countries, and has long been the emblem of youth and beauty. All over the civilized world the rose is regarded as a token of friendship, sympathy, and affection, and has justly earned the title "Queen of Flowers".

Native roses grow in all temperate countries of the northern hemisphere. There are famous collections in France, England, and various parts of the United States. Portland, Oregon, has become famous as the "City of Roses" and has one of the leading collections in the Municipal Rose Test Garden.

The propagation of roses is carried on both out of doors and in greenhouses. For the benefit of amateur gardeners and commercial growers, some of the frequently employed methods are herein briefly described.

Roses are propagated in two general ways, from seed (sexual) and from buds or vegetative parts (asexual). When propagated vegetatively, various methods are used, such as by suckers, layering, cuttings, budding and grafting. The methods used depend upon the nature of the species or variety, amount of material available, climate, facilities, and other points.

From Seeds

Seed is the natural and easiest way of increasing the species. Some varieties reproduce with only minor variations, while others, notably the hybrids, do not come true from seed. When artificial crosses are made for the purpose of securing new and improved sorts, the seeds are saved and planted for new offspring. Also, seeds are used in the propagation of understocks used for budding or grafting of desired varieties. Rose seeds germinate best if planted as soon as they are mature. The "hips" or ripened fruit of the rose, should be cup open, the seeds separated from the pulp by washing, and kept moist by stratifying in sand or peat moss. The seed should be kept moist and in a cool place (40°F.) until after-ripening of the seed has been completed, which will usually require from two to four months. Thereafter the seeds should be planted either in the fall or early spring in a well prepared seed bed or nursery so situated so it can be sprinkled when necessary. Some protection of the seedlings against frosts, wind, or intense sunshine may be necessary, but the rose seedlings are hardy enough usually to withstand conditions which do not fluctuate too much.

At present many rose seedlings are imported from France, Italy, Japan and Korea where they are grown by the millions for the use of rose propagators in America and other parts of the world. The United States Department of Agriculture has threatened embargoes on importations of rose stocks, but thus far these stoppages have been postponed. It is a matter that must be kept under consideration, however,

from the viewpoint of home production of rose stocks. Rosa multiflora japonica understock is increasing in use for out-door roses and is the one principally grown from seed while most of the others are from hard-wood cuttings.

Suckers and Layers

Some roses produce underground shoots or "suckers" which may take root and can be separated for planting each as a separate rose bush. A few roses have underground stems which send up suckers at frequent intervals. These may be dug up, cut in pieces, planted and rooted. Each piece having a bud will produce a new plant. Certain kinds of roses have stems which grow on or near the ground. These may take root at the nodes naturally or artificially by layering (pegging down, mounding, or covering with soil at intervals) in the early summer, and thus may be induced to root.

Cuttings

Many species and varieties of roses are readily propagated by cuttings made from soft wood and hardwood cuttings and a few from root cuttings.

Soft wood cuttings are taken from current season's growth as soon as it has begun to harden usually during April, May or June. Cuttings taken when the wood is too hard will often fail to callus while if too soft will wilt in spite of careful watering. Pieces of stems cut three to six inches long having three buds and a few leaves are desirable cuttings. Tips of growing shoots root better in some cases than basal or middle pieces, but may not harden as well. The lower cut is made with a sharp knife just below a bud and the upper cut a short distance above the upper bud. The lower leaves should be cut off but the top leaves left for promoting better rooting. These cuttings should be planted in clean, washed sand to a depth of about three inches under glass in a hot bed, cold frame, or propagating bench. They should be watered heavily at first and then followed by frequent light sprinkling (twice or more a day) to keep them from wilting. Shading with newspapers or similar material during intense sunshine is also advisable. On the other hand, excessive shading or watering is dangerous on account of rotting the cuttings. Bottom heat is advantageous if it can be had. Roots will be produced in from 10 days to two weeks, beginning of new growth indicating this if one does not care to pull up the cuttings to observe them. The plants can then be potted in a mixture of leaf mould, compost, and sand, and kept shaded and moist until root action has started again. Then they can be hardened off, later to be used for budding or grafting purposes or planted out in permanent location.

Hardwood cuttings are employed more often than any other methods for propagating roses. Many kinds can be propagated in this manner, although it is not always best to use this means. Cuttings are taken in the fall or winter from healthy, vigorous, mature canes, and are made 4 to 6 inches long with the lower cut square across the stem just below a bud, and the upper one slanting and a short distance above the upper bud. All but the top bud should be cut away, if suckers are not wanted. If the cuttings are not to be planted at once, it is a good plan to callus them by tying in bundles of 50 or 100 and burying these in moist sand in a cool place, such as a cellar or in boxes or trenches out of doors. Some prefer to place the butt ends up in order to induce better callusing and to discourage the buds from breaking. Burying horizontally is also practiced with good results. The callused cuttings should be taken up and planted out in the early spring, spacing them 4 to 6 inches apart in rows and with only the top bud above the soil. If disbudding has not been done before, this should be done at planting time so that only one shoot will start, which is desirable especially when the stock is to be used later for budding or grafting. When roses are to be grown on their own roots, it is likewise

generally best to allow only one shoot to develop, and this is later pruned back to three buds to make it branch close to the ground. However, if a climber or tree rose is planned it is pruned higher.

Own-rooted roses from cuttings do not make a very vigorous growth the first year, and some varieties do not grow vigorously at all. Many of the best varieties are either budded or grafted on stocks which develop strong growing root systems and hence produce better tops. Many of the hardy roses do well on their own roots and if experience shows a variety to be naturally vigorous on its own roots, it need not be budded or grafted.

Understocks

There are several species of roses which have been found desirable as stocks for selected varieties. Rosa manetti and Rosa multiflora are the two most commonly used roots, although others such as Rosa odorata, Rosa rugosa, Gloire des Rosomanes (Ragged Robin), Texas Wax, and others are under test and discussion for different varieties. In Oregon most outdoor roses are on multiflora, while the greenhouse varieties are on manetti. The manetti is desirable for the hybrid perpetuals while multiflora is for the teas and hybrid teas. Rosa rugosa, or wild brier rose, is used for high standard or "tree roses". Some people claim that certain stocks produce more blooms, better quality, or greater hardiness, than others. It appears, however, that it makes little difference which root is used, so long as the union is good and strong plants result. The desired stock may be obtained from wholesale nurserymen or rose propagators. The price for budded or grafted roses is higher than own rooted, but they are usually worth the difference.

Budding

Commercial rose propagators practice budding on a large scale, using one of the understocks mentioned above. This operation is done in June, July, or August, after the stock has been prepared by pruning so as to expose suitable places on the canes, and to remove suckers and shoots below where the bud is to be placed. The loose soil is usually scraped away at the base and the buds set low. This is important later as it may prevent loss of the rose bush during severe winters due to freezing. Bush roses are budded close to the ground while half standards and standards are budded 2 to 4 feet high. Bud sticks of a desired variety are taken from previous or current season's growth and kept cool and moist until actually used. The T or shield method is used in making the bud, and wrapping is done with string, raffia, or special rose budding rubbers. The rubbers have the advantage in that it is not necessary to cut them at the end of 10 days or two weeks, as in the case of string or raffia. Part of the old top is cut back as soon as the buds have united. The buds may or may not start the same season depending on whether budding is early or late. When the new shoot starts, the old top should be completely cut off. Later, the new shoot is cut back to three buds to make a bushy plant. In the case of tree roses, three to 5 buds are inserted about the stem at suitable locations where new shoots are desired.

A special method of putting many buds in a single cane has been developed in order to give quicker results. Ten or more buds are inserted in each cane about 4 to 5 inches apart. In about two weeks the buds unite and cuttings are made from the canes, leaving only the new buds on each cutting. These are then treated as softwood or hardwood cuttings previously described. Thus roots and new tops are being developed simultaneously.

Grafting

Rose grafting is carried on chiefly with greenhouse varieties. Manetti stock grown from seed and mostly imported from Europe, is generally employed. Rosa odorata from cuttings is being used especially for yellow varieties. The stock is grown in small, deep rose pots of sand which are placed in special greenhouse frames or benches where the temperature can be maintained at 80° to 85° F. and where high humidity can be preserved. These potted stocks are kept for a period of four to five weeks in order to force the roots into activity and to make the tops start somewhat.

Scions 6 to 8 inches long are taken fresh from flowering shoots in February or March. Buds from each piece are removed so that only the uppermost bud and its subtending leaf remains. These are kept moist and used as soon as possible. The small, green stock in the pot is cut off close to the base and the scion grafted by means of a cleft, splice, veneer, or side graft, so that the cambium at least on one side joins. The union is tied with cotton string, raffia, or rubber, and sometimes although not generally, the whole union is covered with wax or paraffin. The completed graft should be placed at once in a grafting case or back in the frame in which the stocks had been forced and the atmosphere kept moist and warm for about a week. The plants should not be disturbed during this time, and it can be noted through the glass that abundant calluses will be formed on the cut surfaces. At the end of this time, air should be gradually admitted so that in about three weeks the grafts are hardy and strong enough to be removed for transplanting.

Summary

Roses vary from seed and these are used only in obtaining new varieties or for growing certain understocks. Rose varieties are propagated by cuttings, root sprouts, layers, buds and grafts. Propagation by layers is sure but slow; root sprouts make good plants, but this method is not easy with all sorts. Many varieties are too weak on their own roots and do better on other stocks. Rose nurserymen and florists are much interested in the best rose stocks and at present are generally agreed that multiflora from seed is best for outdoor roses, and manetti from cuttings for greenhouse varieties. Other stocks are on test for various purposes. When budded or grafted stock is used, the plant must be set deep and the suckers removed in order to prevent the wild stock canes from overcoming those of the desired variety.

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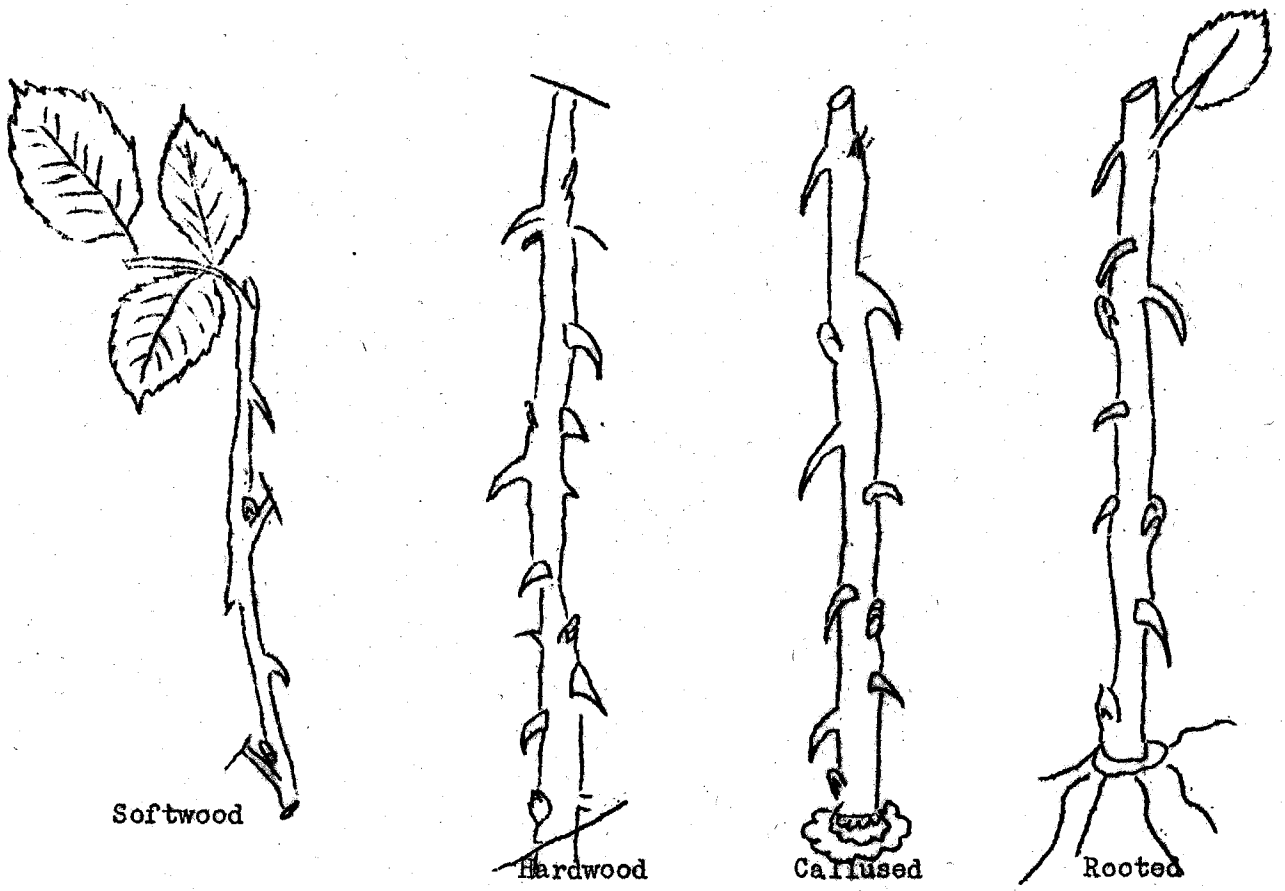
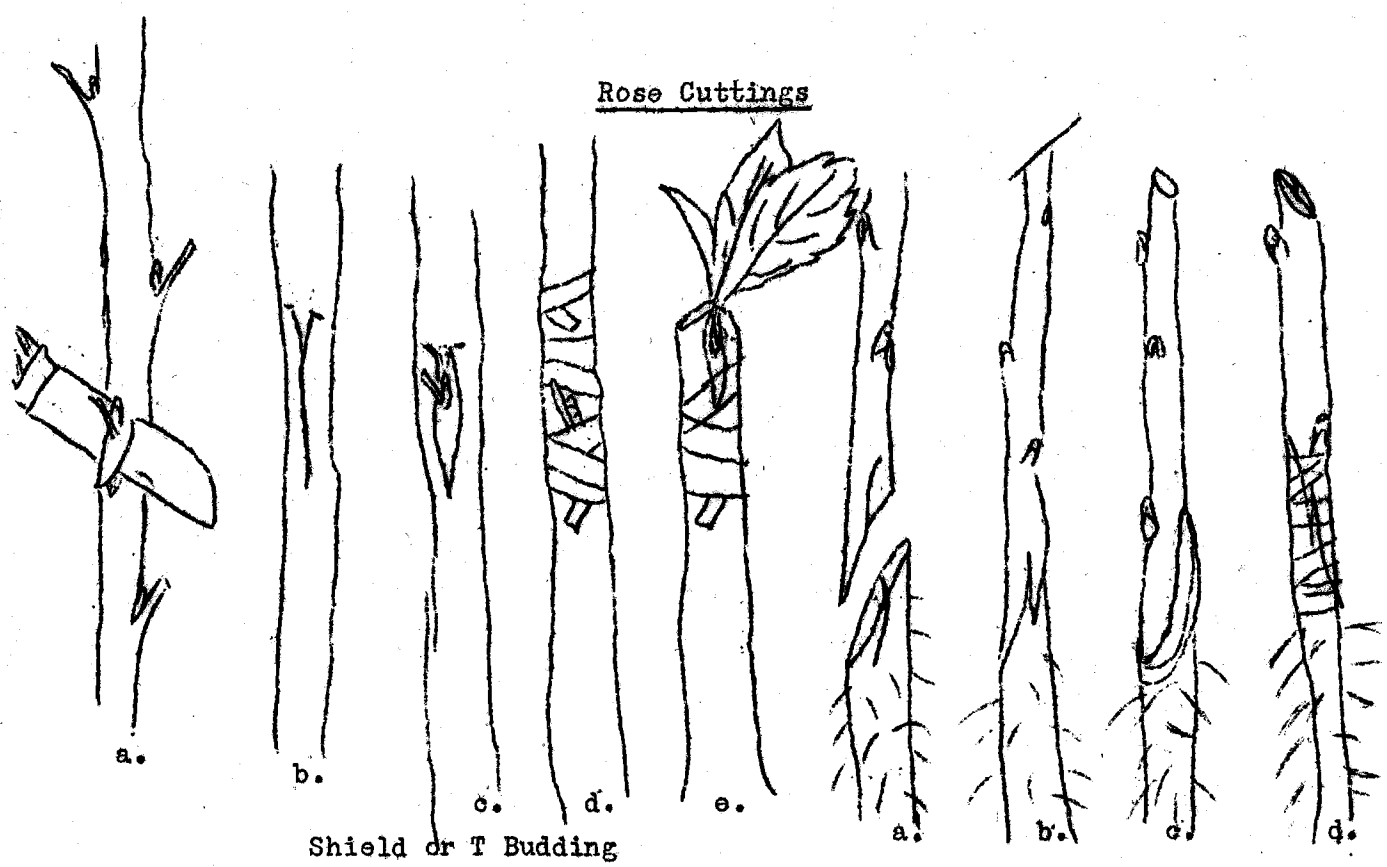


Rose Cuttings



Shield or T Budding

Whip Graft