for this reason it is best where the space devoted to Rose growing is limited to limit Likewise the number of varieties grown, for it is certainly better to grow two varieties well than to attempt to grow a dozen sorts in one small house and then fall with eleven of them. For example, Papa Goutier and American Beauty are seldom seen equally healthy in the same house, for the reason that while the former enjoys a night temperature of fifty to fifty-two degrees the latter is seldom seen at its best unless grown at fifty-eight to sixty. W. F. Bennett also seems to enjoy a moderately high temperature, and strange as it may seem in the case of a Hybrid Tea, still it is true that some of the best plants of this variety have been grown quite well at the root. This rule as to moisture, however, may not be infallible, as the behavior of this variety varies considerably in different soils.

Among the earliest hybrid Roses to be seen this season are fair blooms of Mrs. John Laing, some of these having been in the market for two or three weeks past. Apparently this fine variety has only been disturbed in earliness by the new pink

so well in South Carolina that some of our northern nursery- men take this means of supplying their stock. That is, they consider an establishment in the South for raising such varieties preferable to importing them from Europe. This system possesses the additional advantage that the home-grown stock is all on its own roots, whereas the imported Roses are almost invariably budded or grafted.

The use of wood ashes as a fertilizer in Rose-houses is again strongly advocated by some growers, and, while these are undoubtedly of value, yet it will not do to depend on them entirely. Wood ashes will certainly not encourage the spread of Fungus through a bed as an over-application of barn-yard manure will, and in a comparative test of two parallel beds of the same variety, in one of which the fertilizer was ground bone and in the other wood ashes, the evidence at the time I saw them, about October 15th, was in favor of the ashes; but, of course, it was too early in the season to accept this evidence as final.

Holmesburg, Pa.

W. H. Taplin.

The Calochortus in Cultivation.

In my experience here the various species of Calochortus are hardy out-of-door plants. But eastern growers who use them for forcing purposes may perhaps gain some hints as to their cultivation by some statement of the conditions which here secure the best growth. In England they are hardy, and I believe that Messrs. Gillett & Horst, of Southwick, Massachusetts, treat them as half hardy. I am inclined to believe that many species would prove half hardy in the east. C. Nutallii, usually known as C. Gunnisoni, the true C. Gunnisoni, C. macrocarpus, C. aureus, C. lucens and C. flexuosus are natives of the Great Basin, and are occasionally subject to as low a temperature as twenty degrees below zero. It is a dry cold, and the bulbs are loose sand from four to six inches deep. I have dug C. Leichtlinii in the Sierra Nevada at an altitude of 9,000 feet and a few hundred yards from snow banks that did not melt that season.

A snow-fall of a few feet is common where C. nudus, C. elegans and the Oregon species grow. Here on the coast range of northern California fourteen degrees above zero is the severest temperature experienced, and in it the leaves of

A California White Oak (Quercus lobata).—See page 606.
Calochortus suffer no injury although frozen stiff every morning. It is seldom that two species of Calochortus are found growing together. In a given section of country but one type of the Calochortus is found, either one or two, the Star Tulips; the Mariposa Tulips in warm, open situations, the Star Tulips in open woods or shaded hill-sides. Each species seems to cling to its particular soil and exposure, and even when the species seem to intermingle, it is well known that plants of a different species do not grow together. A native girl of the Yosemite region says the plants of C. nuttallii do not grow together, nor do C. calochortus and C. kelloggii. The following usually are native to a sandy soil with a mixture of mould: C. aureus, C. macrocarpus, C. nuttallii, C. flexuosus, C. Gunniottii, C. kelloggii, C. venustus rosen, C. WallLİ, and C. xanthoformis. All of these are native to the Star Tulips. C. latifolium is native to a stiff, rich, clayey soil, that peculiar clay known in California as adobe. C. phlebophyllum and the varieties of C. venustus known as scouleri, Hookeri, and parviceps are found in light sandy glades. The leaves of C. latifolium and C. scouleri are blackly hairy with bristles. The leaves of C. latifolium are green and those of C. scouleri are greenish-gray. The leaves of C. phlebophyllum are green, smooth, and have a slightly pubescent (woolly) edge.

The species I have named comprise nearly all of the cultivated species. Nearly all of the species named will stand much moisture during the growing season. The uplands where many of the Mariposa Tulips grow are at a saturation point for water, and the rainy season is well marked over the meadows on the mountains where C. ilicifolium, etc., grow during the winter. But before the Calochortus are ready to blossom the water has dried up and the soil begins to bake. A few weeks of burning sun, and the soil has broken and away. Nature has provided the bulb with a protection from the heat and dryness in the shape of a fibrous covering which is thickest in the desert varieties. If wilted they wilt as often as not the roots at the base of the bulb are dried up when the plant is in bloom; in other words, the growth has ceased, and it only awaits the ripening process. In planting the bulb should rest on firm soil. I use boxes about ten inches deep and fill up to about four inches of the top with clay loam and tamp it down. I then plant the bulbs, using a little sand or loose soil to stick them in. I fill the box with soil and put it in light shade for a week or two, that particular box and press firmly. Take it as a whole, a mixture of sandy loam, with a little mouldy or finely rotted chips, will more nearly approximate all the soil than any other mixture that I have tried. Mariposa Tulips need a warm, sunny situation, Star Tulips partial shade; but very good results can be had in planting side by side regardless of this. Of all the species that I have grown I have found C. nuttallii the most suitable to cultivation, and next to it the varieties of C. venustus, especially rosen. C. venustus oculatus is wonderful in its variations in color, C. venustus citrinum is only different from the oculatus, and there are shades intermediate between the creamy white of one and lemon-yellow of the other.

To choose the most desirable from a number of species, all of which are of the same color, one of the Calochortus is a hard undertaking. If I were to choose four they would be C. nuttallii, C. venustus oculatus, C. elius, and C. pulchellus, with an inclination to ask that C. flaccidus be thrown in as an extra. Utah, Cal. Carl Putcy.

Our Twenty "Best" Apples.

The American Pomological Society's list of apples contains but twenty native sorts to the names of which are affixed the letter "b," indicating that, in the judgment of the Society, or, in the case of membership, in the judgment of the members in the meetings where the quality of apples was under discussion, these alone are entitled to rank, as to dessert quality, above all other apples native to this country. This list contains no sweet apple, no one, if four are so chosen, fall, and thirteen are winter varieties. In origin seven are from New York, three from Massachusetts, two from Connecticut, one from Pennsylvania, six eastern, with state unknown, and one probably from Ohio.

May it not be permissible and profitable to review this list with a view to experiment, and perhaps its increase, at some future meeting of our Society? May it not be true that in other states, from a wider range of country, there are apples deserving a place in this roll of honor? Perhaps a majority of the Society would favor dropping four or five, but have ceased to be planted from cultural defects or because they are superseded by more desirable sorts. Mere quality, or local preference, without other merit, ought not to admit to a select fruit list endorsed by a continental society of practical fruit growers. The word "best" should not be made too narrow in its application here. The quality being the same, or equal, other merits ought, I think, to be taken into consideration. Perhaps another section of the apple is a fruit whose culture is a wide range of cultivation is worth considering. Health or productiveness of tree is important considerations. What these should admit, but that the lack of them may exclude an apple from the list, considered merely on its flavor, would be an improper candidate. I think we may take Pomme Grise, for instance, as an apple of so few other merits that its excellent quality alone should not give it a place.

BELMONT.—From all points here is a first-rate apple, of good size, great beauty, a healthy and productive tree, with a crisp, delicate, and most agreeable fruit. Its season extends beyond the holidays.

BETHELHEMITE.—Like the preceding, this apple is of unknown origin, and the excellence of both was first widely recognized in Ohio, this being named for an Ohio town, as Belmont is for an Ohio county. Downing thinks it plainly a seedling of Newtown Spitzenberg, it which much resembles. The tree is a good grower and productive, while the fruit, of well formed and full color, is considered by some to be the sweetest, red, rich, mild and aromatic. An all winter apple.

BULLOCKS PIPPIN.—The oldest American Golden Russet, also locally known as Sleigh's-nose, a small, plain-looking apple, but perfectly agreeable to eat. The flesh is yellow, tender, juicy, spicy, and rich. Early winter. It does not always ripen up perfectly, and the tree is subject to disease. Perhaps this variety might be dropped from the list, along with Pomme Grise, which is a poor apple.

CUGSWELL.—Here is an old Connecticut fruit, and to it are assigned by the books almost every merit—a vigorous, productive tree, fruit of a size above medium, regular in form and color, rich yellow color, and good quality. The flesh is yellow flesh, tender, rich, juicy, aromatic and a good keeper. Why is not such an apple more often found in the general market?

EARLY JOE.—A well known little August apple, which is often seen in market and deserves its place. Yellow, with red striping; flesh white, tender, juicy, vinous. A general favorite.

ESOPUS SPITZENBERG.—Downing says this Spitzenberg is considered by good judges equal to the Newtown Pippin; but our Society excludes the latter from a list where the former is prominent, "The fruit," he says, "is on the whole all that is all of that. In fact, it is a hard apple that never softens until it decays, and its high flavor alone gives it a place here. It is really a 'best' apple, unfortunately, the tree is not vigorous and it is usually an unprofitable apple to grow for market.

FALL WINE.—This fruit is so subject to disease as to be nearly growing, except perhaps in a few localities, and I think it should be dropped, although a fine apple and the nearest to a sweet one that appears on this list.

GARDEN ROYAL.—Here is my favorite; and yet it must be said of it that it is strictly a garden apple, and worth growing only on the condition of high culture. It is of sea-side origin, and I have never seen it thriving so well as in the rather dry soil of New England's fog-banks. The tree is healthy and productive, and with the high culture it requires I do not see why it may not be grown profitably from Portland, Maine, around to New York City. Wherever it can be grown there is money in it. Season, August and September.

MELON.—A New York apple of good size, yellow, handsomely striped, three colored, and shaded with red. Tree a moderate grower, and usually a good bearer. The fruit is of full medium size, often ribbed, but not prominently. Flesh white, tender, juicy, sub-acid, vinous. It is deliciously sweet, but carefully packed it can be sent short distances.

MOTHER.—Another apple of the Massachusetts coast which grows nowhere else so well. Smallish, conic, red, yellow, tender, rich, sub-acid. Rarely seen in market, yet common in private gardens and highly esteemed.

NORTHERN SPY.—It is difficult for me to understand why the Southern and Northern States have not more of a field for this apple. It is a first-rate apple, of fine size and full color, aromatic, and at its very best better than the King; but not as usually seen in the market.

PORTER.—This is the favorite fall apple of Massachusetts and