We have just learned, after the format has been printed, that Miss Eickman passed away this morning, July 11, 1956.

Miss Eickman will never be forgotten for it was she who produced the first true pink polyanthus, "Crown Pink." This triumph in hybridizing was followed by many others.

The Picture On the Cover

A picture of one of the ponds in the bog gardens at Hannon Acres, on June 24th, 1956. It is surrounded by Pagoda Candelabras in every conceivable shade except blue. Mr. Ward V. Wood is standing by his invention of a shield for protecting the blossoms from accidental pollination. Mr. Orval Agee took all the pictures of Hannon Acres which have been published in this issue.

All material for the Quarterly should be sent directly to the new Editor CHARLES E. GILMAN,
Primrose Corners, Redmond, Washington

APPLICATIONS FOR MEMBERSHIP AND SUBSCRIPTIONS

Subscription price (including membership): $2.50 per year. Old Quarterlys available at 75¢ per copy or $2.50 per volume. Treasurer, Mrs. Orval Agee, 11112 S.E. Wood Avenue, Milwaukie 22, Oregon. (Free 44 page planting guide with new memberships.)

British subscription price (including membership): 1 pound per year

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The Editor is Mrs. Dale B. Worthington, 6016 Jennings Avenue, Portland 22, Oregon. It is published at the Ryder Printing Company, Portland (1) Oregon. 1,100-1,500 copies are distributed of each issue.

Entered as second-class matter at Portland, Oregon, under the Act of March 3, 1879, July 23, 1952.

PRESS OF THE RYDER PRINTING CO.
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A piece of screen 26x36 is curved to form a circle and is covered by a round of screen to fit. These are sewn together with a raveling from the wire to form a protective cover. The whole is nailed to a stake. (See cover.)
The Natural Location of the European Primulas

The Primulas with the widest distribution and the ones we admire and love best in our gardens are the European Primulas. Are they not the first plants our forefathers gathered in the wild to beautify the bare spots around their dwellings? Some Primulas are still to be found in large numbers today in various parts of our native land. In the north of Germany we find on fresh and rich soil in semi-shade under shrubs, in orchards and in light woods, also on meadows, but particularly along running waters, the beautiful acaulous Primula, P. acaulis* (P. vulgaris). Its main distribution territory however, centers in the Mediterranean countries, and this is the only Primula to reach North Africa. We also find P. vulgaris in the north, central Norway, Denmark, also all over England and Holland.

"(The word acaulis has been associated with this species earlier than vulgaris, but vulgaris was the first to be used as the specific epithet and has priority."—Smith and Fletcher. It is an accepted practice to call horticultural hybrids of vulgaris form Acaulis. P. vulgaris as a rule has no scape, and the flowers arise singly on long pedicels from the base of the plant. This character separates it readily from all the other members of the Vernales Section except P. juliae, which can be recognized at once by the small orbicular leaves."—Smith and Fletcher).

The taller Vernales Primula, P. elatior is a native of Germany, and is also at home in Central Europe. It likes fresh soil, damp shady meadows, is found among shrubs and in woods, reaching the alpine zone where it grows on the shady north slopes. With a similar distribution is the spring Primula, P. officinalis (P. veris), which contrary to P. elatior, likes drier and sunnier meadows, however, it will tolerate light woods.

A species of the low lands as of the alpine regions, the Primula with the widest distribution of this large family is the farinose Primula, P. farinosa. It is found in the entire moderate and sub-arctic territory of the Northern Hemisphere, continuing into the Arctic, in Asia to Japan, and in North America southward to Colorado. It is the only Primula in the Southern Hemisphere, ranging from the Andes in South America in Chile as far as the Falkland Islands. P. farinosa loves humus, tolerates some lime and grows on moist meadows, in moors and among grasses with overwashing springs. In the alpine region it is in association with the shorter, drier grasses.

A moisture loving pasture plant is the 'long-tubular' Primula, P. longiflora (P. Halleri) which is found particularly in the East Alps on calcareous soil in elevations from 3280 to 8300 feet, less in the West Alps. This Primula strays often into damp rock crevices, and is therefore a connecting link to the true rock Primulas, the jewels in our high alpine regions. They are all from the Auricula Section, and decorate the bare rocks with their pure colours right after the snow melts. They prefer crevices rich in humus, and most species are found in rock rubble (scree). Others are found on stony grass meadows, where they form dense mats of remarkable dimensions.

We can always discover these rock plants (from the Auricula Section) in their natural locations where constant and sufficient moisture is present and where the harsh direct sun cannot reach them. Our Rock Primulas grow where the melting snow water trickles over rocks to lose itself in the crevices and elevations of 6561 feet to 9842 feet where they never suffer for lack of water. They must have a typical moist location instead; where the stony subsoil always assures perfect drainage. Some of the characteristic crevice Primulas which grow here and there on talus are: Primulas auricula, Allioni, carniolica, villosa f. cottia, glaucescens, hisruta, (rubra), Kitabadelna, margarita, pedemontana, spectabilis and viscosa. The same holds true with the meadow Auricas, which grow preferably on stony, grassy places. The soil, rich in humus, is so well mixed with stones, that water drains quickly. On such grassy places grow Primulas Clarina, glutinosa, integrifolia, minima, oenensis (donatensis), tyroensis, villosa, Wulfeniana.

Primulas minima and integrifolia are typical snow-valley plants (also from the Auricula Section), both requiring plenty of moisture. Snow-valleys are formed at high altitudes of midday cannot reach them. Our Rock Primulas grow where the melting snow water trickles over rocks to lose itself in the crevices and elevations of 6561 feet to 9842 feet where they never suffer for lack of water. They must have a typical moist location instead; where the stony subsoil always assures perfect drainage. Some of the characteristic crevice Primulas which grow here and there on talus are: Primulas auricula, Allioni, carniolica, villosa f. cottia, glaucescens, hisruta, (rubra), Kitabadelna, margarita, pedemontana, spectabilis and viscosa. The same holds true with the meadow Auricas, which grow preferably on stony, grassy places. The soil, rich in humus, is so well mixed with stones, that water drains quickly. On such grassy places grow Primulas Clarina, glutinosa, integrifolia, minima, oenensis (donatensis), tyroensis, villosa, Wulfeniana.

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The Asian Primulas most are in evidence with us originate in the moderate zone, found in an average altitude of 11,975 feet. The climate in this zone in summertime is characterized by extraordinary heavy rainfalls with an absolute temperature maximum of 24° celsius (75° fahrenheit). Winter does not favor this zone with a constant snow coverage, but is cold enough to prevent the flowering of plants. Primula anisodora grows in this moderate zone in rough places in thickets of shrubs (Mockoranges, Honeysuckles and Willows, etc.) The formation is lime and slate. A typical meadow plant of this moderate zone in North-West Yunnan and the near Szechwan is P. Poisonii often in
company with P. Beesiana. The soil of these meadows is composed of a layer of black earth hardly one foot deep, having as a subsoil in most instances an alluvial gravel sand. Analyses of this black soil, originating from either limestone or slate, have shown both to be practically free of lime. This is due to the incessant action of the rains and snows, which have leached, by percolation, the lime from the upper crust.

Primula Bulleyana, the orange whorled Candelabra most often encountered in our gardens, requires more moisture. In its natural habitat, it grows in damp places, often among thickets, on sandstone as on lime, at elevations of 7874 to 8858 feet. We find P. aurantia on wet meadow patches and along creek banks, on limestone as on slate, the only whorled Primula growing at 10,965 feet. It is interesting to note that whorled (Candelabra) Primulas are found only as far as the moderate zone extends.

P. nutans is found growing in elevations of 9842 to 12,139 feet on very stony, but nevertheless humus slopes with a diabase soil which is granular and crystalline; a soil treated by fire, often becoming molten, often of the soda lime group, a silicate of calcium and magnesium and often iron and manganese. This is a dark coloured earth originating from igneous rock, containing iron, feldspar and augite. Another typical representative of the moderate zone is the wonderful "orchid-primula," P. Litonianna (P. Viali), often in company with P. Petsoi on damp meadows, but has been found also among various dense shrubs, or on stony and dry turf in elevations of 9186 to 11,482 feet. Therefore Primula Viali is a plant of wider distribution in varying climates. Thanks to these qualities it should be an easy plant to acclimatize in our gardens.

In relatively dry conifer forests on sandstone dwells P. cernua. Preferring damp and cold places are Primulas sikkimensis and yarngensia. P. sikkimensis has been found in crevices, which are filled with lime rubble and water-mosses; its main distribution is in the sub-alpine zone (14,107 feet) along creeks and near their springs. P. yarngensia is a typical marsh plant, growing on various kinds of stones, but these have little effect due to the depth of the moist top soil. We find P. Forrestii in dry crevices and along the edges of limestone boulders, the long woody rhizome trailing over the infertile rocks. P. vitata (P. scendentiflora) is found as is P. sikkimensis in both zones, and grows in wavy places over limestone. The near relative P. secundiflora is sub-alpine and alpine, growing either on limestone or clay-slate in deep humus in troughs, as along the edge of Rhododendron groups.

The cold-temperature or sub-alpine zone is the region of the conifers, their upper boundary being at 14,107 feet. Dr. Handel-Mazzetti discovered that the snow stays here only a short time, that by April 15th almost all had melted away and the first Primulas had started to flower.

Of particular interest to us are Primulas onchophila and simplanthina. Both are found in large numbers on steep hillsides, on distinctly dry soil, which is made up of semi-decomposed vegetable matter. The "Snow-white Primula," P. chionantha, found among tall weeds and along running water, is only at home in pure humus, very distinctly so, and loves to nestle between the roots of the rhubarb, Rheum officinale.

The high-alpines, growing to an elevation of 14,763 feet are: P. glacialis (brevicula) on humus patches between slate rocks; also P. pseudosikkimensis (sikkimensis), which makes its home as does P. brevicula in snow-troughs (snow-kettles as on limestone in even deeper soil). P. alpica grows in these lovely snow-valleys on lime which are identical with those found in the Alps, therefore the same factors are at work here. A very rich and deep soil with an abundance of nitrogen is present. This originates only in places where the snow remains for a long time. This high-alpine zone is characteristic in having little snow in winter time, and apparently less cold weather. According to the notes of the missionary Edgar there are mountain passes at 16,404 feet elevation which are passable for caravans in winter. He registered a temperature only once of plus 6 degrees F. after enjoying the warmth in the low sixties F.

Entirely different are the conditions along the Burmese-Tibetan border, among the mountain chains between the Mekong-Salween and Irrawady rivers, in the province of the Burmese monsoon climate. The snow is several feet deep here up to June, with heavy ice formations and avalanches, the latter breaking down large tracts of forests, permitting only low bushes to exist in company with certain herbs, among them a few Primulas. In the same territory on steep and not too moist pastures at an elevation of 13,943 feet grows P. chrysopas (gemmifera var. sambulensis). In light woods in grassy places at an altitude of 11,811 feet we may encounter as late as September P. sphaerocephala (capitata subsp. sphaerocephala) in its glory. Also in the same neighborhood a marsh plant makes its home, P. muscaroides, following creek banks at an elevation of 10,826 feet.

This should show us in a large measure the physical and chemical influences of the soil, and under what climatic conditions the Asiatic Primulas flourish.

THE CULTURAL REQUIREMENTS OF PRIMULAS

(1) The European Primulas

These Primulas have been in cultivation long enough to become acclimated and should not cause undue difficulties. The species from the low countries, in particular Ps. vulgaris, elatior and officinalis (veris) have been acclimatized in gardens through constant selection and crossing (hybridizing) with Caucasian species, such as Ps. amoena, Juhiae, aculis var. rubra, (now known as vulgaris subsp. Juhiae) etc. They do best in any ordinary garden soil getting the benefit of a little shade where the soil structure is of a water retentive nature. Wherever this is not the case, it is up to us to improve the growing medium. We do not possess at the present time one Primula growing on an extremely dry soil and in a full sunny exposure. If certain hybridizers' aims have been
along these lines, the results are far off yet. I think if *P. canescens* (*P. veris* subsp. *canescens*), would be used as a parent, with rigid selection of the offspring, much could be accomplished. (This has now, 1956, been accomplished for regions with high humidity such as Tacoma, Washington, and the Olympic Peninsula).

The Rock Primulas in our high alpine region demand more attention. We can assist them to a happy life and make them feel more at home if we plant most of them in large groups and relatively close together. Of first importance is stone-humus soil and perfect drainage. It does not make any difference if they are turf dwellers or crevice plants. All prosper in dappled shade with even moisture, particularly so in spring time. The addition of finely chopped sphagnum (peat moss) is very beneficial mixed with the soil. For the lime lovers (calciphiles) we have to add plenty of lime in the form of mortar rubble or small limestone chips.

All crevice Primulas placed in fissures among large rocks must have their roots well anchored, all empty spaces therein to be carefully filled with the specific earth they require and covered with small stone chips to prevent any possible erosion. The plants dry out in empty Auricula hollows and are washed out by heavy rains or sudden downpours. Many species in the Auricula section have a tendency to grow with their rhizomes out of the soil, particularly so *Primulas rubra*, *marginata*, *minima*; but a yearly addition of soil in the fall is most beneficial. In regard to the cultural requirements please refer to the various species.

(2) The Cultural Requirements of the Asiatic Primulas

Most of these plants grow in meadows, and many of them find their way into the woods. Therefore their locality is more or less a moist one. They enjoy summers with plentiful rainfall, also mild winters.* We give these Primulas semi-shade in our climate and place them where moisture is prevalent in water-retaining clay-loam or peat soil. If we follow these rules, we should be able to grow most Asiatic Primulas with good results, including *Primulas anisodora*, *arrantiaca*, *Bewiana*, *Bulleyana*, *burmanica*, *chionantha*

(P. japonica at Wisley)

(The Cultural Requirements of the Asiatic Primulas)

Summer-blooming *Primula capitata* subsp. *Mooreana* with its frosted, violet-tiled pagoda roof, heliotrope fragrance, and easy culture, withstood the 40 degree drop in temperature of November 1955, in a Portland, Oregon garden.

We seldom see *Primulas sinoplantaginea*, *oncifolia* and *szechuanica* in cultivation. They do best in leaf mould, or in a moor-sand-clay loam soil mixed well with partly decomposed leaves. Keep them rather damp during the summer but withhold water, or water only sparingly during the winter months.

Typical Stone Crevice Primulas are *Forrestii* and *rufa* (*bullata* var. *rufa*) (of the easiest of the Nivales Section), *japonica*, *Poissonii*, *pulverulenta*, *Smitbiana* and *Wilsonii*. We may observe that this first group contains mostly whorled Primulas from the Candelabra Section and we shall refer to them as meadow or turf Primulas. The next group likes a very damp, a deeper bog, peat, marsh soil in semi-shade and we shall call these plants the Marsh Primulas. If we treat them in our garden like the whorled Candelabras in the first group, the Meadow Primulas, then we shall never pride ourselves to cultivate them to their utmost perfection and beauty. It is a miracle they stay with us as long as they do, and this is for a short time only. Marsh Primulas are: *Primulas firmipes*, *pudibunda* (*sikkimensis* var. *pudibanda*), *secundiflora*, *sikkimensis*, *Florindea* and *secoundiflora* (from the Sikkimensis Section), *belodoxa* (from the Candelabra Section), *apollita* and *muscaroides* (from the Muscaroides Section), *nivalis* (from the Nivales Section), and *jargongensis* (of the Farinosae Section).

We denote as wood Primulas all those plants indigenous more or less to the forests, nevertheless they like a drier location than the damp meadows or pastures, including *P. Viali*, which in its native habitat may be found in all three plant formations. The wood Primulas are *Primulas capitata*, *cornua*, *Viali*, *Mooreana* (*capitata* subsp. *Mooreana*), *muliensis* (*borneo-calliantha*), *sphaerocephala* (*capitata* subsp. *sphaerocephala*). These Primulas grow best in a porous soil with perfect drainage in shade and a place which always stays sweet, fresh and non-acid.
Bullata e Section). Their culture is not difficult provided we give them a spot where they can remain dry all winter. We shall place them into crevices in our alpine garden with their faces looking North or East. NEVER toward the weather side, and place large flat rocks or rock slabs in such a manner as to divert heavy downpours away from the plants. We have to provide them with necessary moisture during spring and summer. As to soil we use a well decomposed leaf mould with some sand and coarse peat added, mixing all with mortar rubble or small limestones in order to enrich the soil with lime.

The most difficult for us so far has been P. nutans. Despite being a plant of the temperate zone, it seems to get acclimatized in our climate (Germany) rather slowly. P. nutans grows best in a very porous soil, "blended" with coarse stones, demanding perfect drainage and a culture analogous to our typical alpine plants growing in scree or talus, such as Geum reptans (the glacier "Peter's Whiskers"). Remember, good drainage!

The foregoing Asiatic Primulas are representatives from the moderate and the cold zones. We must never forget that the majority of these plants are from the sub-alpine and a few from the high-alpine zones in their native lands, but due to frequent rains the air around them is saturated with so much moisture that it is impossible here (Germany) to simulate identical conditions. To help our plants, we shall place them away from the harsh mid-day and afternoon sun. Small or larger bodies of water in the vicinity also help to increase the air moisture and tend to foster a happy growth. The more we understand about "equalizing" the climate in which we attempt to grow the Asiatic Primulas with the one of their native habitat, the more are our chances of success.

* (Well-mulched, adult plants of this group stood a 40° drop in twenty-four hours in 1955 in the Pacific Northwest and do not seem to mind being frozen if after they have. They are reset and covered with boughs, straw or coarse hay.)

III. THE POTENTIALITIES OF PRIMULAS IN LANDSCAPING

(1) The Garden Value of Primulas

It is obvious from the foregoing notes that the possibilities for the extensive use of Primulas in our gardens are quite good and tempting. We are studying the various natural locations in order to fully understand the chances for acclimatization in our gardens. We have classified the Primulas according to their cultural requirements, their respective plant formations in their native habitat, that is in meadow, marsh, wood (forest) and rock gardens. If we remember all this when planting in our gardens, gross mistakes may be avoided. In this way a certain measure of success may be assured. And we shall also remember this: that sand and sun are the most dangerous enemies of the Primulas (in a hot climate).

This does not necessarily mean that a sunny garden with a sandy soil cannot harbour Primulas. If such conditions do exist we must improve the soil first by adding coarse peat, to make it more water retentive, or by adding heavy loam with peat and well rotted manure. The primary condition is to alter the water porous structure of the soil into a contrary one. It is easiest to change the sun-exposed location if we plant the proper tall shrubs or perennials. The more moist the soil (and the greater the humidity) the more sun our Primulas can endure. We cannot classify all the Primulas as sufferers in open exposures, but it should be our aim rather to apply the foregoing observations to maintain a proper balance in the water consumption. If these conditions are provided there is no reason to believe that our gardens have to be deprived of the beauty of the more difficult Primulas.

(2) The Perennial Border and Garden

The possibilities of adaption are as different as are the exterior forms of the Primulas. The perennial garden has a character of its own, is a collection of plants composed accord-
for the border, or interspersed among low perennials.

The garden Polyanthus which looks like an improved P. elatior may be used in a similar way. Many varied strains have a twelve-inch tall flower stalk supporting a many-flowered umbel. Individual florets often measure two inches across. These Primulas are very floriferous and are found in all colours except blue, which so far has been scarce. (These are readily available commercially in the United States in 1956, coming 90% or better from hand-hybridized seed.) These are beautiful as cut flowers.

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We can also introduce whorled (Candelabra) Primulas into our perennial borders with good results, as they have been in cultivation for some time, and here we have Ps. Bulleyana, orange flowered; Beesiana, rose-purple flowered; and x Bullesiana the "Terracotta-Primula," a hybrid of the foregoing two which is most pleasant to us with its variety of brilliant colour. Assuredly we can always find a half-shady spot for these interesting and thankful Primulas. Their whorled flowers open in the lower tiers in the month of June (and continue blooming for weeks.) In very shady places P. japonica is best, producing carmine or purple flowers. Resembling the foregoing is P. pulverulenta with very farinose flower stalks. A hybrid of it with the biennial P. Cockburniana is P. x silvaroacuana, a Primula of very high cultural value with copper-red flowers. Very pretty is also the horticultural form "Red Hugh" with brilliant red flowers.

(These are readily available commercially in the United States in 1956, coming 90% or better from hand-hybridized seed.) These are beautiful as cut flowers.

The Regular Rock Garden

We allotted a place in the perennial border for the garden forms and shall reserve the rock garden for the most part for the typical species. Much depends on the size and shape of the Rock Garden and whether it is regular or irregular in shape.

The regular rock garden with its terraces and dry walls gives us the possibility to tuck away many of the more difficult Primulas. However, let us start first with the easiest ones, with the indestructible carpet-Primula, P. juniae. It will shortly form close mats, only 2 1/2 inches high, and in April it is completely covered with purple flowers. Of equal value and easy culture is the cushion Primula, P. x Pruhtoniciana (P. x Helenea) a hybrid of P. vulgaris and P. juliae. This plant (and other hybrids resulting from crosses of the off-spring) are known in commerce under many names. They are among our most valued Primulas because of their free-flowering habit and ease of culture. We can create wonderful color combinations in the rock garden with the foregoing garden forms. The flowering period may begin in February and extend into April. The Balkan farinose Primula frondosa, only 6 inches high, completely covered with farina, has wonderfully delicate rose corollas and flowers in May. The yellow P. lutetia is also easy to grow. The rose-violet P. saxatilis, grows rampantly without becoming a pest. These Primulas should be planted in the terrace beds of our rock gardens. They are not particularly exacting in their demands, but resent the harsh noon day sun which will shorten their flowering period by at least eight days.

Along the edge of the dry wall, either on top or along the base, we plant the wonderful garden Auriculas, P. x pubescens and its sister plants which give us so many pretty coloured hybrids. Near some dwarf conifer, protruding out from the wall, the true P. auricula is most happy. The white powdered leaf rosettes, the fragrant yellow flowers, create a pretty picture and contrast well against the dark green conifer needles. Primula auricula and the many hybrids between the species of the Auricula Section, are rock Primulas and as such demand to be associated with rocks. They like a soil somewhat rich in lime, and suffer less in direct sunlight than all other Primulas. This characteristic is due to their completely dissimilar leaf structure.

This does not imply that all the Primulas used in the regular rock garden are limited to that situation. Many species in the following chapter are adaptable in other positions.

(4.) The Irregular Rock Garden (The Nature or Wild Garden)

The irregular rock garden or the "nature garden" is a wonderful home for most Primulas. It is according to the various types of structure, the changing surface, troughs, hummocks, rock piles, patches of rock rubble (tufs), scree, small or larger bodies of water, creeks and the different compositions of soil therein, that we knowingly create the best growing conditions for our Primulas. Here we can plan for the needs of the true species in great numbers as the majority are better adapted to the conditions provided in a nature garden. We are enabled here to extend the flowering season from February until November without the use of garden forms which are better grown in other parts of the garden.

(courtesy Bill Steinhaus)

Primula denticulata and Tulip Clusiana

Primula denticulata, a hybrid of the foregoing two which is most pleasant to us with its variety of brilliant colour. Assuredly we can always find a half-shady spot for these interesting and thankful Primulas. Their whorled flowers open in the lower tiers in the month of June (and continue blooming for weeks.) In very shady places P. japonica is
In very wet, somewhat marshy places, easily made along bodies of water or running creeks we shall plant the marsh Primulas, P. belodoxa, Floridana, sikkimensis, secundiflora, rosea, etc. The whorled Candelabra Primulas such as Primulas anansoda, Beesiana, burmanica, Bulleyana, changgensis, japonica, pulvulenta, Smithiana and others of their kind, are contained in smaller or larger groups among loosely planted Rhododendrons. The late summer flowering "Head-Primulas" with their lilac flower heads bloom till fall beneath not too densely grouped conifers. The following are to our sorrow, only biennials: Primulas capitata, capitata subsp. cristata, capitata subsp. Mooreana, capitata subsp. spheerocephala, but they can be easily be resown annually, and if started early enough may surprise and please us with some scattered flowers the first season. A similar situation is preferred also by P. chrysogena and the beautiful orchid-Primula, Viola. We shall place P. chionantha with Primulas Cockburniana, involucrata, longiflora (Halleri), microdonia (possibly alpicola, with its variations), and reitziata, in a more open spot with semi-shade (and dampness).

At the base of the rocks and ledges, their crevices and fissures filled with special prepared soil, we shall plant our rock Primulas in association with Saxifraga, Draba, Androsace and similar rock plants. In regard to soil mixture, please refer to the list of the species.

All the species and garden forms growing in the perennial border and the irregular rock garden, can be used to advantage in the natural garden. It is better for beginners to try these first and to acquire the others for their collections later. With the practical experience gained, later failures will change the more demanding sorts less likely to occur.

(5) Primulas for Parks and Gardens

We shall not forget the Primulas best suited for the larger gardens, and it is impossible to tend to each plant with the required attention in such large plantations. Therefore we shall employ only such Primulas which, if neglected, do not disappear after two or three years. These plants must assimilate themselves unobtrusively into the character of the landscape. A not too dense planting of trees (to provide high shade) is naturally of primary importance.

Here we can plant to our heart's contentment in large masses, the Primulas acaulis and vulgaris variety Sibthorpi, elatior, and officinalis (viri) (as well as other Vermales hybrids) in a rather loose way. It is best if these groups are not too near each other. They are lovely planted along walks after carefully digging the soil deeply and removing all old roots from it. In most instances a sufficient layer of humus is present, otherwise we must add peat or humus. These Primulas will enjoy their new home and self-seed near and far.

We do not always have to adhere to the character of the native flora and set rules. Many whorled or Candelabra Primulas can be used here to great advantage, particularly japonica and Bulleyana, which, if the opportunity and favorable conditions do exist, will self-seed ad infinitum. Most other whorled Primulas are prolific in the same way if given the chance. It is for us to select the best forms and colour variations for propagation and to DISCARD THE OTHERS.

If we have moist places along creek banks near foot paths, we shall plant the beautiful and distinguished P. rosea, which self-seeds itself very freely indeed under kind conditions.

(6.) The Primula Garden

The experienced gardener and amateur can seldom resist, as time goes on, to accumulate an ever-increasing and complete Primula collection. The thought arises to put specimens from all his Primulas in a separate garden, space permitting, because all factors in the creation of such a Primula garden are most obvious and assured, and he may enjoy the flowers from earliest springtime until autumn. How does such a garden look?

For this purpose an uneven terrain is best. Here we have the opportunity of incorporating a natural body of water or a murmuring creek. The position of this garden should be so arranged that the noon and afternoon sun cannot influence it with its full force. We shall give our garden shape and form only after the soil has been properly prepared and cleaned of every weed root. Foot paths, ponds and creeks are staked out. The creek shall follow natural soil depressions, except when on level ground where we may construct a freeway when excavating the ponds. We must build the proper rock formations to accommodate the rock Primulas on ledges, and place here and there a solitary boulder.

When we have finished the initial work very carefully, the soil structure usually demands a modest thorough soil improvement programme during the following years. We know that Primulas grow best in a water retentive soil. If our soil is of an average quality, the incorporation of coarse peat will be very beneficial, particularly so in heavy loam or clay. Remember that the typical wood-Primulas love a more porous humus, the marsh-Primulas a more retentive and a denser soil structure.

We shall plant first some shrubs such as the various Rhododendron hybrids, x praecox, x Arendsii, x dahuricum, and the Kaempferi group. The true species follow: Rhododendrons caucasicus, mucronulatum, nudiflorum, racemosum, rhombicum (reticulatum, Vas-
ey, viscousum, impeditum, etc. After the foregoing are planted Barberries (Berberis species) and cotonearer varieties, dwarf conifers and similar plant material is placed, according to the size of the garden. These evergreens can provide our colourful Primulas with fitting backgrounds and frames. We shall always remember to place the Primulas in small, loose little groups. Strong and fast-growing trees and shrubs should never find a place in a true Primula garden.

Let us examine now the calendar when our Primulas show us their pretty faces, so we may arrange the planting to give best results. The high summer flowering, whorled Candelabra and the taller Sikkimensis types, in their various mus types, should be placed in groups of three or five in the background. The tallest of all, P. belodoxa is grouped around the pond with Primulas Floridana, sikkimensis and secundiflora, which produce their flowers during the summer months, Floridana often blooming until fall.

The more dwarf marsh-Primulas shall be grouped along the creek in great numbers, so they can make the required impression. We have here Primulas rosea, lepta, muscarioides, and the type of var. balfourii which Balfour named Wardii, flowering from spring into summer. All the spring bloomers, P. acaulis and vulgaris, vulgaris subsp. heterochroma, x Helenea, Juliae, and others of dwarf stature demand a similar front placement near paths. The same applies to the fall flowering kinds, Primulas capitata and its sub-species crispata, Mooreana and sphaerocephala, whose small violet flower heads must be brought to the proper setting. Interpersed shall be the medium tall species and subspecies which will surprise us with a bountiful harvest of flowers in springtime and may blossom again later in summer. These are Primulas denticulata, involucrata, longiflora (Halleri), saxatilis, Sieboldii, chionantha, Cockburniana, luteola, Littoniana (Vialli), microdonia (probably alpicola) etc. To remember the specific wants and likes of each of the various forms shall always be of prime importance.

Now we shall turn our thoughts towards the typical Rock-Primulas, to be tucked away in crevices, at the base of rock ledges or in crev. Special consideration to their demands as to the physical structure of the soil is imperative, and an ample supply of lime should be provided for the calciphiles.

The creation of a most pleasant Primula garden necessitates the incorporation of other plant material also, be it the Lilies croceum, carniolicum, regale, auratum, or the fragrant flowers of the Himalayan poppies, which are listed under the various species of meconopsis. We shall devote special attention to shrubs which flower during August, September and October when the garden is almost devoid of Primula blooms. We have most grateful fall bloomers in the Japanese species, Meconopsis rhombicus, and the dwarf species, Thalictrum, Cimicifuga, many fall crocuses and colchicum species can be fit companions. The Primulas should be always placed to the fore. We shall not hesitate to support the Rock Primulas with the color of the inflorescences of Saxifraga, Draba, and Edraianthus. By carefully selecting suitable plant material according to texture and shrubs in harmony with the Primula garden as a whole, non-flowering periods will not entirely rob the garden of interest.
Recollections Of A Recent Holiday In Britain

As I write these requested notes on my recent summer visit to Britain I look out of my window on a rather early winter's scene and my mind is flooded with many pleasant memories. 1955 was one of the best summers for sunshine which Britain has experienced for a number of years and the peace and beauty of rural England, especially South Wales, were inescapable.

I shall never forget the great kindness and help which I received during my quest to obtain as much helpful information as I could regarding the growing and care of double primroses and Show and Alpine Auriculas and to locate sources of supplies of rarer named varieties. It was my privilege to meet most interesting people who took endless trouble to assist me by correspondence and otherwise. With all this cooperation I can record that my journeys were successful beyond my expectations. I hope, in humility, I may be able to benefit from all I have experienced and absorbed and that the gems that I have been able to collect will safely weather this winter and become acclimatized under the care which I will endeavour to give them. When the springtime comes it is my hope that some of these will gladden the heart, not only of myself, but the hearts of all my garden friends.

I enjoyed my meeting with Mr. Dan Barnford in Manchester, a gentleman who is well known to all plant lovers in Britain, U.S.A. and Canada. His knowledge of plants, and especially Show Auriculas, was, to me, astonishing. He took endless trouble to assist me, verbally and by correspondence. This will never be forgotten and I hope that he will long be spared to give the same inspiration to others. He is much interested in the A.P.S. and the newly formed Canadian society and desired me to convey to one and all his most kind greetings.

And now what can I say that, as the result of my visit, might be helpful to other amateurs like myself who are lovers of single and double primroses and auriculas?

Great Britain and Ireland are the home and source of supply of most of the rare single and double Primroses and Auriculas, but there are only a few commercial growers of these, and one has mostly to rely on private or small growers and collectors for old and rare plants. These parties will not be troubled by conforming to all the formalities of inspection, certification, packing, shipping, and all the other necessary details of exporting. I have done the same beforehand and would experience that some of the commercial growers have much to learn in the way of packing and shipping plants overseas. At one time while in Britain I nearly gave up trying to overcome endless difficulties, but, by perseverance, I was finally able to find a method to get my plants into British Columbia.

For the past few years I have successfully used "Blue Whale" organic compost in my garden. Fortunately, as an emergency measure, I took some of this material to Britain, to a beautiful English garden where I had been able to secure a number of rare plants. After the plants had been washed and examined by the inspector, they were un- packed them with the dampened Blue Whale and shipped them by air mail. Ten days later I received advice which promised me to pay another tribute to the efficacy of "Blue Whale." I received some Alpine Auriculas by sealed post office air mail in a shocking condition and looked for 100% loss. However, after stripping and washing the plants I planted them with added Blue Whale and I have been rewarded by healthy plant growth.

In addition to a number of the better known Show and Alpine Auriculas I was able to get two plants of "Duke of Edinburgh" over 100 years old (Irish), two plants of "Stories Black," two "Old Irish Blue," two "Old Irish Green Glencormac," two "Green-finch" and one "The General" — all stated to be more or less rare and very good.

Regarding Double Primroses, I am afraid I walked "where angels fear to tread" because I secured two "Rose du Barri" and two "Madam Pompadour" — two of the most beautiful doubles ever developed — old and very rare — the one rose and the other crimson. These are said to be of French extraction and very temperamental — in fact, one well known grower in the A.P.S. has stated that he had given up trying to grow "Madam Pompadour." Whether I may have an amateur's luck remains to be seen but it would be interesting to see how they may enjoy our climate in British Columbia.

The uplift I received while in Britain was, in these materialistic days, very refreshing and it was impressed on me, what I have always believed, that one's home and garden would take on the atmosphere of the thoughts of its owner. I experienced this to a very marked degree in one particularly beautiful garden which brought to memory a quotation I have never forgotten "To see the beauty of the butterfly's wings one must tread softly." Alone in this garden I indeed "trod softly" and with heart atoned, absorbed something which was very wondrous.

There are many other matters I might speak of but this has developed into an Epistle already "out of bounds" — suffice to say that in Britain many are looking to the Far West to follow the best traditions of Auricula culture and this tradition, believe me, is worth upholding.

What can the A.P.S. do to encourage the younger generation in larger numbers to appreciate a wonderful heritage and to take up the cultivation of these lovely plants so that they, too, may thereby be spiritually benefited?

— J. Haydn Young

The Primula Photography Contest

Winners are: ORVAL AGEE, Sweepstakes winner, (two volume edition of the English Rock Garden, by Reginald Farrer.) Mr Aggee also won the Hannon Acres Trophy, the Burnhaven Trophy and the Candelabra. The prize of a sack of Blue Whale will go to Mr. and Mrs. Lyman A. Noyes of FERNBRIER GARDENS, Issaquah, Washington, for the best grown specimen plant, a Candelabra. They submitted several pictures taken with a small camera which showed that their gardens are of great beauty. Many lovely pictures were submitted which were unsuitable for the Quarterly in that they did not show enough of the details of the flowers and plants, which cost several hundred dollars to reproduce, or they did not have the required designation on the back as specified on page 56. The Editor Emeritus, the Editor, and Mr. Maddux wish to thank all those who submitted pictures. It is hoped that all Primula fanciers will make a habit of taking pictures of their Primula plants and gardens for the Quarterly.
Mr. and Mrs. Cyrus Happy III and the Green Edge Show Auricula
Seedling which won the Bamford Trophy for 1956.

Mr. Happy has been interested in alpines and primroses of all types for many years. He was President of the Tacoma Primrose Society and District Vice President of the A.P.S. in 1955. He is also a photographer of note. It was he who took the colored picture of Peter Klein's red double, the "City of Tacoma" for the 1955 Year Book. He has written several articles, for different publications, on the Auricula. He has raised many Auriculas: seedlings from his own hybridizing, seedlings from seeds garnered by exchange and purchase from all over the world, and named English Shows. When the Nominating Committee was hunting for someone who was not only capable and responsible but well-liked, it interviewed groups and individuals. Everyone who knew Mr. Happy suggested that the A.P.S. would be fortunate indeed if it could secure him for this office. There will be many people in this country and abroad who will be happy that it is Mr. Happy who has won the Bamford Trophy and who has accepted the nomination for A.P.S. President. He is young, his prime interests outside of his work in the Exchange Department of the National Bank of Washington in Tacoma, are his family and his primulas.

News of the Shows is traditionally kept for the January issue because the interest is keener at that time. A picture of the winning Candelabra from the Jefferson High School Show is on page 117. A picture of the Bamford Trophy winner and highest rating plant is shown above. The shows were remarkable this year because of their beauty following a cruel winter which destroyed many choice primulas.

Introducing
Mr. Charles Gilman

Mrs. Worthington has for some time been anxious to retire as Editor. Mrs. Levy, a close friend of the Editor, because of an always active interest in the Quarterly was anxious to find a responsible person to carry on the tradition of the Quarterly. Mr. Charles Gilman is a past president of the Washington State Society, but it was through the monthly Bulletin of this affiliated Society that Mrs. Levy's attention was drawn to his obvious qualifications for editorship. His style is friendly, his sense of humor very keen, and his knowledge sound. This last is not only technical but practical, as he has been the proprietor of Primrose Corners in Redmond, Washington, for several years. While lecturing and judging in Washington, Mrs. Levy interviewed the Gilmans. She was pleased to learn that Mr. Gilman's wife, Alice Gilman, had formerly been associated with the Carnegie Foundation for the Advancement of Teaching and had experience in format compilation. This was especially important when Mrs. Levy found that Mr. Gilman would consider the editorship of the Quarterly, if Mrs. Gilman would act as his Secretary.

It is true that the compensations for the editing of the Quarterly have never been material. However, both the Editor and the Editor Emeritus know that the experiences in friendship, and the knowledge gained, have a recompense which could never be equalled in any monetary way. Mr. Gilman has been appraised of the great amount of work, which is so seldom realized by those who do not know that the Editor must raise the money, through advertising, for all the pages over the sixteen which are subsidized by the Society. Mr. Gilman has accepted the responsibility of the Quarterly and his contract has been signed by eight members of the Board. Mr. Gilman will now be a member of the Board according to the Constitution of the Society. It is hoped that he will inherit all of the loyalty which has been rendered to the Quarterly by the Regional Editors, the Board of Directors, and the members, through the eventful years since 1942 when the Quarterly was published as a mimeographed pamphlet.

The President's Message

Donations To The American Primrose Society

may be deducted from business or personal income taxes for 1956 and from then on, according to a statement from P. Henry Needham, Chief, Pensions and Organizations Branch of the U.S. Treasury Department, Washington, D.C. I am very proud to make this announcement at this time as I have been working on this from the time I took office.

Almost every great institution has to be subsidized and ours is no exception. The Portland group has worked long and tirelessly to support not only the local meetings but much of the business attendant upon an international society. The time has come for a shift of the responsibility and the nominating committee has reported to me that they are nominating members from Washington to fill many of
the offices vacated this year. My first reaction was bitter at the thought that our Society headquarters might be shifted to the North, for all the Society belonged to Portland, it was started here! I respect my wife's intelligence so much that I listen to her even when I am angry. She pointed out the now obvious fact that the members in Portland were so tired of their responsibility that not one would accept the nomination for President for 1957, that the same hard workers had been putting on the Portland shows for many years and they were too tired to raise the money and put on a National Show each year; that it was impossible to find workers to fill the important posts of Membership Chairman, Publicity Chairman, and Treasurer. The local office of Portland being that this was an international Society and its headquarters should be where the greatest strength in membership was shown; and that the Society headquarters, Secretary, and Treasurer: are too exhaustive when the needs of a local group and a national Society force them to carry a double load. Real interest has been shown among some of our Portland members in organizing a local group.

The Membership Committee is composed of Florence Levy, Louise Gee and Susan Worthington. They have asked me as an ex-officio member (please see Article IV, Section V, of the Constitution, page 79, 1955 Year Book), to announce that the nominees for the different officers for 1957 are as follows: III. T. W. Wilson, President; Herbert Dickson, Seattle, Vice President; Mrs. John (Anne) Siepmann, Kirkland, Recording Secretary; Mrs. P. B. Charles, Seattle, Corresponding Secretary; and Mrs. Orval (Ivan) Agee, Milwaukee, Oregon, Treasurer. Each person on this list has proved his loyalty to, and enthusiasm for, the A.P.S. Thus far, the sponsors have been final in number. It will be my pleasure to announce the nominations for Directors at the next meeting. All nominations can be made at any meeting of the Society. Absentee ballots will be sent on request.

I feel that Portland has long done its part and now Washington is willing to assume the great deal of responsibility. May I beg you to consider the responsibilities of your membership in the light of all the contributions in time and energy which have been made to the Society? The people who have given the greatest contributions of this kind regard that they are unable to give financial aid to the extent that it is needed to meet the immediate needs of the Society. In many cases the first among you who could give amounts, large or small, they would be very acceptable. For many years the October Quarterly has been paid for by the memberships for the following year. It would be much more sound to have this taken care of currently. If the proposed amendment for a raise in membership fees goes through during the September meeting, it would help to pay our bills in a current way next year. (See page 82).

Our expenses have been increased by the increase of union wages in the printing and engraving trades and this has not been compensated for in a raise in dues. Our dues are the smallest of any Society publishing a printed Quarterly.

The telling blow however, was the freeze which cut the Society's expected income considerably, at least by $750.00. Barnhaven's donation in plants, to be sold at the annual Gresham Show, would have amounted to $500. These plants were distributed among the members and were for the most part lost in the untimely freeze and consequent thaw. They were planted later than usual but were in a very good growing condition, encouraged by the warmth of Portland; but the October Quarterly has been alone in picking them up, the plants were not destroyed but were placed in the most protected positions and planted earlier. These were used as a background for the Jefferson Show. The Gresham Show, which commanded a crowd of 500,000, put on by all the nurserymen of the area, was voted down this year because of the general disaster. If I may venture a remark which would be funny if it were not so serious: I, the President of the A.P.S., announce that this has been a disaster year, and that we have need of help from our far-flung membership. Wayne Arnold

Captain Comley Hawkes

Grace M. Eddolls

I have been asked to write a few notes on the activities of Captain Hawkes, but this is not altogether an easy matter as he has so many. He was born at Newbury, Berkshire, of an old military family. His great uncle fought in the battle of Waterloo. His military career began at the outbreak of the 1914-1918 war. He was one of the first to land in Gallipoli and was one of the last to leave in the final evacuation at Cape Helles in 1916. After the German advance in 1918 he was awarded the Military Cross and in 1919 was given the M.B.E. in the King's Birthday Honours. At the outbreak of war in 1939 he was called back to the Army and served until 1944 in the Anti-Aircraft command. He still gives a good bit of his time to work for the British Legion of which he was made a life member in 1948.

He is descended also from a long line of Cowes Yeomen from whom, probably, he inherits his love of the sea. As a young boy and a teenager he cultivated a small flower garden. His great joy now is in the old flowers of bygone days. Many of these date from Tudor times. He travels all over Britain to search for and to collect old forms lest they be lost. He grows the Primroses which our ancestors knew, notably the double Primrose. He hybridizes Jacks-in-the-Green and Hose-in-Hose to perpetuate and renew the old forms. He grows pinks, especially the Painted Lady, and herbs from which the ladies of mediaeval times made their wonderful concoctions and perfumery.

It is an inspiration to visit Captain Hawkes' garden, Brown Roof, Nantwich, and see his wonderful collection of these old world flowers. Step by step one becomes almost breathless in admiration as one moves from one enchanting plant to see another equally enchanting. The snowflouris, these fascinating little plants, hold one spellbound with their many forms. (Captain Hawkes is arranging these in the accompanying illustration.) One can only compare his garden to a museum or picture gallery with priceless antiques and pictures. However these are intimate, whereas Captain Hawkes' treasures are alive and increasing. One hopes he will be able to pass on to others his interest in and knowledge of the care of these old world flowers so that they will never be lost.

Captain Hawkes is the British Research Editor for the Quarterly. His articles have been featured for several years and in spite of his limited time he has helped many members to grow and understand doubles and antique forms in the Vernal Section. He has never failed to provide articles or information for the Quarterly, upon request. Editors often contribute without benefit of signature.

An excerpt from the Nantwich Guardian states: Among the names of the learned contributors to the "Cheeshire Historian" is that of Captain C. Hawkes, of Stapely, whose wide knowledge of plants, herbs and flowers has earned him the title of "John Gerard's successor."

(Courtesy of the News Chronical, Manchester, Eng.)

Captain Hawkes
There are days, like today, that are really too beautiful to spoil by thinking about anything practical. It would be so easy to write on what causes fragrance in flowers, or the adventures of the Scottish plant hunter, Robert Fortune, or those fancy phrases of Reginald Farrer, the man who could keep it up, volume after volume. But, if we are the season for building more carefully toward another spring, so, instead of playing, in an attempt to outwit another winter like the last one will be outlined. There is a double indemnity in this. Besides being prepared to think, there is a point, one, perhaps, in taking the time to think about the flowers of the year that have faced the latitudinal data that are coming. Peter Klein, of Tacoma, the primrose grower of the lovelies to of double the Vernales Section. This spring-flowing group is the first of all evergreen perennials to bloom. Because they retain their beauty throughout the year, they are the first of all evergreen perennials to bloom. Because they remain through the years of selection, both natural and man's hand, they are the first of all evergreen perennials to bloom.

In fertilizing the soil before planting this summer, the usual well-balanced organic plant food mixture for humus, goes to all plants. We do not fertilize in the fall, but if such is your program, withhold the nitrogen which stimulates leaf growth and is a frequent ingredient in the open invitation to trouble in a sudden, sharp freeze. In areas subject to spring freeze, nitrogenous fertilizers are just as dangerous when applied in the spring as they are in the fall. Liquinox 0-10-10 (no nitrogen, 10 phosphorus and 10 potassium) is excellent for both fall and spring applications and is a good substitute for the usual winter fertilizer. This is a high nitrogen fertilizer and should not be used in top condition while the untreated mature plants were killed.

A hemiculch, two to four inches deep, will be put around all our plants as until late in the fall to protect these plants. This is not only necessary to protect the young plants, but is also a good precaution against future problems. The danger of leaf blight and rust is much greater than in the spring, and consequently running less danger of getting nipped in the bud.
Polyanthus and Acaulis, asks the druggist for old plastic medicine bottles. (Customers bring these in because they have the prescription number on them. It is illegal to use them again and they are ordinarily thrown away.) A drug label is pasted on them or inserted on the inside to identify the cross or species name of the seed.

II. Seeding
1. Every amateur will evolve his own method of seeding. The large commercial growers such as BARNHAVEN sow seed in carefully prepared beds which are long and very deep and built to counter level. They are sub-irrigated and are covered with a wire mesh to protect from birds and rodents.

A: Components of the seed and seedling planting mixture.
(1) Many growers sterilize their soil. Here at Hannon Acres we are lucky in having an almost inexhaustible supply of virgin soil, some of it from a centuries-old bog and much leaf mold from the forest which surrounds it. We have a great deal of blacken and it helps to make a wonderful compost. Most amateurs who are keen enough, can go to some woods and bring home leaf mold and forest soil which is clean. I do not like to sterilize soil because the good bacteria is destroyed with which are said to have no residue. I have tried baking small amounts of soil in the oven and have restored life to it with new soil and Blue Whale, which seems to be alive with bacteria culture of the finest sort. This takes time, as the mixture must be stored in a well dampened condition for at least six weeks before it is just been baked to death and soil which is teeming with beneficial organisms.

(2) Hybridizers are being more and more careful of the soil in which they grow their plants as the vigor of a strain is partially set by the vigor of the parents.
B: I use a good clean sharp sand and keep quantities of it on hand in the potting sheds and in the back garden.
(1) Mrs. A.C.U. Berry always washes the sand she uses for her alpines, but Candelabras do not seem to require this careful attention. They are essentially very rugged plants which give little trouble if they are not allowed to dry out.
C: We are very fortunate indeed, we of the West Coast of the United States and Canada, in having the impregnated Peat Moss product, BLUE WHALE, for the third element for our seeding and planting mixtures. It is now available in almost every garden store in our area. In spite of the fact that I have virgin bog soil of a black color and peaty texture, I buy and use Blue Whale in wholesale quantities.

Mrs. Hannon in her potting shed with the winter stores of leaf mold and sand. She sifts equal portions of Blue Whale impregnated Peat Moss, sand and the best loam obtainable into the wheelbarrow, through a quarter inch screen mesh.
I have no stake in Blue Whale. I have always paid for all I have and am happy to do so. I am simply grateful for a great product.

3. I save cans of all shapes and sizes for my seed pans. I am lucky to have an old refrigerator in the basement. I enjoy seedling and transplanting and do most of it myself. I often sow smaller quantities at a time so that I am not overwhelmed by too big a job of transplanting at one time. I usually sow about two hundred thin layer of sand or finely shredded sphagnum moss, and soak them. After the refrigerator if I want them to germinate in a hurry, I take them out after 12-24 hours and let them thaw. I repeat this process two or three times in an attempt to make the seeds react as if they had gone through the winter. I then put place to germinate. It is not unusual, after this process, for seeds to germinate in the freezing compartment for several years. I thaw and freeze them a couple of times more.

III. Pricking out and transplanting into flats

1. I prick out much later than they do so successfully at BARNHAVEN. I wait until the plant has two or three very sturdy leaves. The roots are easily disentangled as the seeding mixture is very loose and very wet. I use a rubber finger protector on my index finger to dable and plant so that the roots are not bent. If the roots are too long it does not harm them to be cut with a sharp scissors, but it is asking for rot to bend a root back and thus stop the circulation.

2. I try to plant about 90 seedlings to a flat and to keep those seedlings of later as much of a size as possible. I put back the tiniest seedlings for transplanting germinators are likely to be the choicest of all.

3. Be sure that the mixture in the flats is thoroughly moistened and firmly tamped. It is very important that the earth be formed tightly against each root.

*When the Editor remonstrated that this was a good bit of advertising for a lead article, Mrs. Hannon said, “If you don’t put what I write about Blue Whale you is the truth.”*

### Planting in Bog and Bog

1. When the plants in the flat start to get crowded, it is time to transplant into the garden. Mr. Ward W. Wood, the caretaker, and I plant Candelabra plants from the time the ground warms until October. However, the later planting was disastrous in the early freeze, and consequent thawing which followed, in November last year.

2. Planting in the bog is very simple: Ample holes are made, about 15 inches apart, which will accommodate the roots of the plants without bending them. The bog itself is firm, well-drained, and the roots are set in the bog. The watering is taken care of by nature and the plants come on very quickly to bloom a good two weeks before the plants in the border. Weeds are the only difficulty, and some of those which grow in the bog are quite beautiful. We have tried to keep the garden natural as possible and have hundreds of native wild flowers and ferns both indigenous and brought in from other localities.

3. The South border, which delighted us all spring from the breakfast room window is about thirty-five feet long and very wide running irregularly back under the mountain ash and apple trees which provide dappled shade. The soil is basically clay and has been recropped several times a year for twenty-five years. The garden is dug early in the year the bed is made, and left to the elements for a week or two. Blue Whale is then spread over the surface and well watered in. This seems to enhance the good texture of the soil and it is easy to break and turn into a beautiful loam. After the bed has settled, the Candelabra Seedlings are set in much the same way as in the bog. The plant is watered in very well and is kept in a dampened condition from then on. The border across the path is much larger and much of it gets the full sun. It was all planted with seedlings last September and resultant blooming a summer past. I use Candelabras in every part of the garden for our main color in May and June. Zinnias and other annuals may be planted between them and thus hold color for the rest of the season.

V. Propagation by Division

1. This type of propagation is called "vegetative." The severed parts share the same characteristics as the parents. This is important when one wants to plan a bed according to color and size. Certain Candelabras are coming true to color from hand pollinated seed at the present time, and new colors are becoming evident for the future. However, one hundred plants from one hundred seed of the "same kind" will yield outstanding plants which deserve to be propagated vegetatively. When Candelabras are planted in a garden there are sure to be guests who have that "light in the eye" which means that they are in favor of taking a bit of a plant home. How wonderful it is to have an interest in something which increases almost in ratio with the desire to share!

2. In July, Mr. Wood and I have begun to dig and divide and replant those plants not used for seed parents. We stake the plants firmly and cover the roots. The dirt from the bog shakes away, the dirt from the clay borders is hosed from the roots), divide them by pulling apart with the hands, and cut the tops and roots as shown in the accompanying picture. A sharp knife may be used if the plants have grown together; however, if the division is done at exactly the right time, the plants will pull apart quite easily. Douse the roots in sulphur in a bucket—this "sweetens them up for the winter" by discouraging fungus and seals the cuts as well.

3. The beds are prepared again and the planting is done much the same as for
the transplants. Although it is quite possible to move a blooming plant into a pot and win a blue ribbon, or to transplant it in full bloom to a more prominent place in the garden, if proper care is used, I agree with Dalrymple that it is best to plant out transplants and divisions by September or earlier.

4. Root pruning is important at the time of division, as is the leaf pruning. The plant should be replanted where it has enough sun and shade so that it may get its share of mineral salts and nitrates to increase the number of crows and yet be able to manufacture the sugar needed for bud production. Blue Whale seems to be the only assistant to nature that we need at Hannon Acres.

Mr. Wood and I begin to divide the Candelabras not saved for seed the last week in June, and continue through the thousands of plants until the task is completed about the second week in August. This is our time for homely philosophy and we often wish that "life in the big wide world" were as easy as it is in the garden. Last week we talked of wars and the way they must have started. He mentioned that he saw a big black beetle under the same plank which had been set to catch slugs. He wondered if this beetle was a predator or a vegetarian, a friend or a foe. Doubt entered his mind and off went the beetle's head, a psychology of fear not too different than that of war. There is no analogy, however, in the division of plants such as primulas where only the most outstanding are saved and divided. If man could be propagated vegetatively we would have ever-growing groups of Burhens, Pastors, Einsteins, Brahms and the other beneficial geniuses who must leave us all too soon.

Gone are the days when we had to lace the soil with potash and phosphorus and put a bit of bone meal in each hole, and give the Candelabras a drink of "fish" before the show.

5. Remember, that Candelabras bloom in the spring so most of the flower crop must be made the preceding summer and fall. This means early setting in enriched soil, preferably after planting and kept well watered. Their cycle is ended at this time and the whole division uses resources at its disposal, to grow into an independent plant or plants before it starts into dormancy in the fall. It is wise to fertilize at this time with a nitrogenous fertilizer.

VI. Hybridizing for pleasure and profit

1. When I had been growing Asiatic Primulas for several years, I became extremely interested in hybridizing. I purchased Smith and Fletcher*, Blasdale**, and other books on Candelabras which would give some hints as to which species would cross. I bought two sets of the Quarterlies and a friend gave me several sets of old English Garden magazines. I made scrapbooks and typed articles from periodicals I could not keep. I studied every winter and tried my new-found knowledge at each spring. I am particularly indebted to Florence Levy who has been so generous with her knowledge which has been gained from many years of hybridizing experience. I suggest that everyone interested in this subject read the April 1896 "Barnhaven Notes."

2. The work to be done between the species and the many wonderful hybrids which are appearing is limitless. There is not room here to list the species which are compatible for crossing. This subject has not been thoroughly studied. Sometimes, when the year is right, plants thought to be 'sterile' suddenly bear a few pods of seed as evidenced by the Garryards "Guinevere" which has born seed pods for Peter Klein and for a neighbor of mine, for the first time this year. Most amateurs will want to try their hands according to their taste in colors, but the subject goes much deeper than that. Dalrymple wrote in the New Flora and Silva in 1937 that, "Much work still remains to be done in various directions. One line of approach is in P. Wilsonii as a seed parent. (Perhaps with helodoxa or Poisonii which are also evergreen.) Of itself it is not in the first rank with flowers small and poor of form, but the colour is a rich dark velvety-crimson, and it tends to flower several weeks later than others of the Section. Its progeny might tend to prolong the flowering period far into July." I share Dalrymple's opinion that many of the hybrids' habit and constitution are deucedly better than that of the parents.

3. Candelabras are prolific seed bearers and the hybridizers' work has only begun when he finds a good plant or two which are better than the parents. The selection and intensive hybridization then begins. If seed is to reproduce the color, or even the series of colors (for instance, pastel shades), it has to be crossed back on itself (self-pollination).
When pollinating helodoxa one must stand as the blossoms are almost at eye level in the top umbel. The procedure is the same as described on page 50.

selected second-year hybrids. The yellow seed parent resembled a japonica. Many botanists claim that japonicas and pulverulentas do not mix. However, Dailymple, the famous originator of the Bartley strain of pulverulentas, wrote, "Among the few hybrids of this species was one I raised between japonica and P. pulverulenta. It was a very vigorous plant of a rich glowing crimson, named after a famous racing man with a countenance said to be of the same color as the plant. This plant was given an Award of Merit under the name of Sir George Thursby, but the dry summer following killed the whole stock." Mrs. Levy in a lecture on color had mentioned light yellow as a seed parent, which would, when crossed with another selected color, have the most potentiality for new and brighter shades. The resulting offspring of this powderless yellow were the most rewarding I had ever hybridized up to that time: beautiful new and exciting reds, the direct parents of Imperial Red; opalescent shades, Burmese Opal, beyond the ones considered glorious the year before; subtle burnt orange shades; clear light pink and rose, and most unusual of all, two plants with pure white flowers of heavy texture, with light lemon yellow eyes and light green wavy long foot-stalked leaves. I feel that Fujiyama is a direct result of 'manna from heaven' and if some bee or ant assisted me, in spite of my extremely careful precautions at that time. I am grateful nonetheless. I only regret that the parent yellow has disappeared. I knew its extremely light pure yellow color was unusual, but I had no idea how valuable it would prove to be as a parent. I was especially inspired by a passage from Walter Blasdale's book, CULTIVATED SPECIES OF PRIMULA: "Every grower of primulas should aspire to add some feature of value to some of the many species which it is his privilege to grow. Many desirable innovations originated in amateur gardens. In spite of all that science has added to our knowledge of plant breeding, pure chance must be credited with an important share in our achievements. Every amateur should keep his eyes open for unlooked-for variations in such varieties as he grows and be prepared to take full advantage of an opportunity to achieve a high percentage of one color or sometimes more beautiful than the one which is the goal.

4. In saving seed of white Primulas, whether Vernales or Candelabras, in order that they should reproduce themselves, it is imperative that they be protected from accidental cross pollination. In the palette of primula coloring white is seldom a good color. In the case of my beautiful new hybrid, Candelabra "Fujiyama" I used a light yellow Pagoda for a seed parent, which was extremely unusual in that it had no powder. Where it came from is anyone's guess, and it was one of a group of plants which were the result of hand-pollination between selected parents of pulverulentas, Bulleyana, Beesiana, aurantiaca, chungensis, Cockburniana and a plant with twice the number of chromosomes normal for the species to which it belongs.
There is much I haven't told you—for instance, the new Florinda Hybrid selected from plants from Mr. Jack Drake's seeds are so exquisite that Mrs. Levy, long used to beauty in Primulas, stood still before them. Their bells are crimson coated and within is a lively cream. They have huge yet refined umbels held erect above leaves which are an ornament in themselves.

I am very grateful to Orval Agée for taking the illustrations for this article. He spent many hours and many rolls of film in order to reproduce the elusive quality of the Candelabras, so that those who do not have them can see with their own eyes that I have not magnified their beauty.

Leaves showing the differences between some of the members of the Candelabra section, reading from left to right: aurantiaca; Hartley, a pink strain of pulverulenta; burmanica; Fujiyama, a new form of Candelabra, white with light lemon-yellow-centered flowers; japonica, from small plant; Postford White, a form of japonica; and pulverulenta.

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(See pages 36, 37 and 90 for additional information and importing instructions.)

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ANDELABRAS: Seeds and Plants

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Bartley Strain pulvulentas: Pink with silvered stalks and yellow eyes, 2-3 ft.

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We are very proud to offer these lovely PAGODA Candelabra Hybrids. They are not only beautiful but very rugged. They require moisture and clean crowns and are at home in the border or the bog. In return they give a show of color unequalled in any other spring blooming perennial.

P. burmanica: Purple with yellow eye, 2-3 ft. May and June blooming.

P. chungensis: Closely related to Cockburniana but hardier and larger. Orange or lemon center, 30 inches.

P. helodoxa: Tallest of the Candelabras; Rich yellow, 5 ft. yellow molested stems, July blooming.

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Burmese Opa: Indescribably, two-toned pastel.
Celestial Rose: Two tones of rose, lovely in texture.
Clissoni Pink: Opalescent shades of pink with underlay of canary yellow.

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Mandarin Orange: A triumph in color, nearly burnt orange. These plants in a vase by themselves would brighten a drab room.

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Dear Friends: Summer, 1956

Gardeners will be the first ones to reaffirm that "Nature is Wonderful." Like every well-known saying, this one needs analyzation, and perhaps qualification. Below is a picture of the true Blue Whale, as he looks in Nature, pictured as it were, before his breakfast and turn at the mirror. A blue whale may weigh as much as 300,000 pounds, which is more than that estimated for any prehistoric mammal! As he swims in the ocean, what good can he do, except to give a lift to a Jonah, now and then? I have learned to respect the inventiveness and resourcefulness of man, for he has turned my vast bulk into forms which have proven to be of inestimable service to human beings and even to animals. Many spirits have been uplifted, indeed, lives have been raised by the well-known vitamins made from parts of my body. It was great news to gardeners when scientists discovered that I was adaptable for making a fine fertilizer which was organic and full of nitrogen. A great improvement became news when the ACME PEAT COMPANY, under the Brand name of BLUE WHALE, combined their High Grade Sundried Sphagnum Peat Moss with nutrient taken from the entire body of the Whale, including the Baleen and Bone, thus providing a well balanced source of nutrient for plant life. It was also good news when Acme discovered a method of incorporating these whale nutrients into the High Grade Moss so that no leaching takes place as is the case with all liquids applied to the soil. Only the hungry roots have the power to take these Whale nutrients from the earth which has been fortified with a good portion of well dampened BLUE WHALE IMPREGNATED PEAT MOSS.

In January 1954, my product was further improved and I was so happy about the whole thing that a smile appeared and I showed a little gain in weight in the picture which appeared in my advertising. Some folks have written in that I am losing the character of the true blue whale whose picture is so faithfully drawn on this page. Let me reassure you that in spite of the fact that I am enjoying civilization and the resultant glorification which is taking place in my portraits, that my Beauty is MORE than Skin Deep. I have all that I had when in the briny deep — and much, much more. I am now your servant and wish to look as attractive as the product which proudly bears the label, BLUE WHALE IMPREGNATED PEAT MOSS.

If the advice of my friends and nurserymen and private gardeners who send me stacks of fan mail is followed, you can plant your seedlings into flats in 1/6 Blue Whale, 1/6 Acme Peat Moss, 1/3 coarse sand, and 1/3 good garden loam and later transplant them into ground which has been well-laced with BLUE WHALE IMPREGNATED PEAT MOSS. These plants will have enough nourishment to do them for their growing season and the heavy mulching of BLUE WHALE, which is advised for winter protection as well as a means of hoarding summer’s water, holds its nutrient until it is dug into the ground after the spring frosts are over. The results will insure your friendship for my product.

YOURS FOR SERVICE, The Blue Whale.