



**Almanac:
Society for
Pacific Coast
Native Iris**

**FALL, 1996
Volume XXV, Number 1**

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PUBLICATIONS AVAILABLE FROM THE SPCNI TREASURER

Check List of Named PCI Cultivars

Lewis Lawyer, Editor: 48 pages. Lists and describes Pacific Coast native iris and named hybrids through 1990. \$5.00 postage paid.

Diseases of the Pacific Coast Iris

Lewis & Adele Lawyer: ALMANAC, Fall 1986. 22 pages, 9 photographs. \$3.50 postage paid.

A Guide to the Pacific Coast Irises

Victor A. Cohen: The British Iris Society 1967. Booklet, 5.5 x 8.5, 40 pages, 16 line drawings, 8 color and 6 black-and-white photographs. Brief description of species and sub-species including their distribution. \$4.00 postpaid

A Revision of the Pacific Coast Irises

Lee W. Lenz: Photocopy of *Aliso* original. Booklet 5.5 x 8.5, 72 pages, 9 line drawings, 14 photographs, and 12 maps. Definitive work on the taxonomic status of the *Californicae*, with a key to the species and sub-species. Detailed maps and accounts of distribution. \$6.00 postage paid.

Hybridization and Speciation in the Pacific Coast Iris

Lee W. Lenz: Photocopy of *Aliso* original. Companion booklet to the above, 5.5 x 8.5, 72 pages, 30 figures, graphs, drawings, and photographs. Definitive work on naturally occurring inter-specific crosses of PCI, including detailed account of distribution. \$6.00 postage paid. If ordered together, both Lenz booklets may be obtained for \$10.00 postage paid.

SEED AVAILABLE

Seed of species and garden hybrids is available for \$1.00 for the first packet and \$.50 for each additional packet from the Seed Distribution Chairmen listed in the column to the right.

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MEMBERSHIP & SUBSCRIPTIONS

The Society for Pacific Coast Native Iris is a section of the American Iris Society; membership in AIS is a prerequisite for membership in the SPCNI. If you wish only to receive the ALMANAC (two issues per year), the annual subscription rate is \$4.00.

Membership	Individual	Family
Annual	\$ 4.00	\$ 5.00
Triennial	10.00	12.00
Supporting Annual	6.00	
Life	50.00	65.00

Please send membership-subscription monies to the SPCNI Treasurer.

ALMANAC

DEADLINES: March 1 and September 1. Back issues are available for \$3.50 each, postpaid. Complete chronological index \$2.00, postpaid. Index by subject matter, or by author, \$4.00 each, postpaid. Please address the Editor.

PRESIDENT'S MESSAGE

So much has happened here in my Little Rock garden since attending the Sacramento convention. 1996 was the first time since growing the PCI's that I experienced poor flowering, the worst flowering ever, of these irises. Most of the hybrids did well, but the species, *Ii. douglasiana*, *tenax*, and *innominata* produced only 2-3 flower stalks per clump, I usually have from 9-12 stalks on all the species.

After doing the fall clean-up, I noticed all were producing new growth. After the recent 5 inches of rain, even more growth was seen, and they are all showing 5-6 inches of new growth. Come the end of February, 1997, I'll hose them down with liquid fertilizer.

I received 2 divisions of a *tenax-douglasiana* from Jean Witt which was labeled

"non burn"; so I'll see in April if they can take our hot and humid weather, and give a final check in the July-August period.

A report from the Lawyers that our iris book has two chapters completed and others on the way.

I'd like to take this opportunity to encourage the members to please contribute articles for the Almanac. This is your society, so send in your successes and your failures.

I'll see you all the next time,



Bob Ward

FROM THE EDITOR

I have just hung up after a friendly telephone chat with Joe Ghio, in which we concluded that there were still a lot of things we don't understand about growing Pacificas.

In the last issue of the ALMANAC I noted the poor bloom of our Pacificas this season which had correlated with the poor bloom in the Nerines the previous fall. This fall the Nerines are blooming in profusion, so maybe the Pacificas will be back to normal next year.

As would be expected with the poor bloom, the number of plants producing seed was reduced, but for some reason, with some notable exceptions, seeds per plant were also reduced. Whereas in 1995, 59 varieties produced sufficient seeds (20 or more) to be kept separate for the seed exchange, this year only 12 varieties did so. Colin Rigby, our seed exchange Chairman, writes that his seed production was also very poor this year ("only one or two varieties even bloomed") and that the same must be true for others, since new seed acquisitions this year are way down from previous years.

As has been our experience in previous years, however, there are always a

few varieties which produce a phenomenal amount of seed. It does not seem to be the same varieties each year, although there must be genetic differences for seed production.

This year a 4-year-old clump of HARLAND HAND produced over 500 seeds, and a clump of AMIGUITA the same age produced over 300. The real winners, however were the late-maturing group. "Late Doug", a single plant in 1992 and now in two clumps, produced over 1100 seeds. Four different one-year-old plants of XP235 and XP236, crosses between Late Doug and our munzii-derived lates produced over 200 seeds each in this, their first year of bloom.

How do you explain that of the other 116 named clones in our garden, most of which have been planted for more than 4 years, only 10 were able to produce 20 or more seeds?

Joe was right! We don't yet know all the answers!



EXPEDITION 1997 OREGON

Adele Lawyer

This year's Expedition is slated for May 10th and 11th, with headquarters at the Windmill Inn at Roseburg, Oregon.

Trip Chairman, Colin Rigby and his wife, Teresa, surveyed the area around Roseburg on the last weekend in April this spring, and are enthusiastic about the many areas where stands of PCIs grow in profusion.

Plans are to go east of Roseburg on Saturday and see some of the unusual dark-purple *I. tenax* which can be seen here. We will also have an opportunity to see *Iris chrysophylla* and hybrids between the two species. We have been invited to tramp through 20 acres of a private property near Glide, where many wild iris are involved in the natural flora.

Another treat for Saturday will be a visit to the beautiful garden of Bud and Carol Cruger. Bud is a plant breeder and was associated with Lewis and Adele Lawyer in breeding vegetables for Del Monte Corporation. Like the Lawyers, Bud transferred from vegetables to flowers after retirement. In the western

suburbs of Roseburg, he is breeding dahlias and sweet peas, and is growing many other flowers on a beautiful property, fittingly named *Dahlpeaqua*. Their garden slopes down to the banks of the broad Umpqua River. Although they grow a few Pacificas, their garden has an expansive collection of plants, attractively arranged and well labeled.

Dinner will be on your own that evening and Colin has reserved a meeting room at the Windmill for later in the evening so that we can have a minimal meeting. There will be a projector and screen so that any of you who have pictures of your gardens or trips to the wild are encouraged to bring them along.

On Sunday, we will go west or south of Roseburg. Our plans are fluid, since it is difficult to plan exact routes until we see whether the 1997 season decides to be early, average, or late. The good thing about the areas where wild iris grow is that there are hills and valleys within short distances of one another; and we can travel up or down depending on what elevation the elements decide to favor.



View of the Cruger garden and home

There are many alternative possibilities which Colin explored last spring, and we will survey the prime locations just in advance of the scheduled date.

Please make your room reservations directly with the Windmill Inn. Their telephone number is (800) 547-4747 and their FAX is (541) 673-0901. The rates are \$53. single, and \$58. double. Please mention SPCNI when reserving.

A deposit of \$60 per person should be sent to Adele Lawyer, Secretary-Treasurer. This will cover the cost of bus rental, lunches, soft drinks, correspon-

dence, and a small profit for SPCNI, based on 40 participants or more.

For those not driving their cars to Roseburg, flying to Eugene and renting a car is an alternative. If you wish to share a car rental with someone, please notify me and I will try to put you in contact with one another. There must also be Greyhound or other bus lines that travel Highway 5 routinely. An additional possibility is that some of those driving from areas north of Eugene could pick you up on their way to Roseburg. It is 70 miles to Roseburg from Eugene.

IDYLWILD WINS MITCHELL MEDAL

Joe Ghio's IDYLWILD has been awarded the Mitchell Medal for 1996.

Idylwild has proved to be a good grower with excellent substance. This, when combined with its spectacular flower pattern and shape, made it an easy choice for the judges. It has also proved to be an excellent parent, being in the

background of 14 fine modern named cultivars, 8 by Joe himself, 3 by Lois Belardi, 2 by Vernon Wood, and 1 by Terry Aitken. This accomplishment places it in a tie with OJAI (Walker '59) for being the sixth most popular Pacifica parent of record. The picture below is photographed from an Ektachrome slide.



Idylwild (Ghio '88)

MORE ON EXTENDING THE BLOOM SEASON

Lewis Lawyer

The table in the next column shows the origin and evolution of our late-blooming PCI lines, starting in 1975 with open pollinated seed from a clone we call ABELL 1, believed to be Thornton Abell's 66-44-30. Abell 1 is quite early, with an average bloom date of March 16 during the 15 years we have grown it. From those seedlings we selected XP1C which bloomed mid season. In 1978 we crossed XP1C by Joe Ghio's Soquel Cove which is quite late, having an average bloom date of April 11 during the 20 years we have grown it.

The cross between XP1C and Soquel Cove was made for a different purpose, but Soquel Cove is obviously the source of our late genes. Soquel Cove, as did Del Rey and Mayor, probably inherited its late maturity from the *Iris munzii* pollen Ghio got from Richard Richards, and which is in the parentage of all three.

From that cross we selected XP3L which our records show bloomed as late as any clone we have ever grown. But in 1981 we were not interested in its maturity and discarded it after crossing it to Luihn 10 because both had very blue flowers. That cross, however, gave us XP50B, which inherited the lateness of XP3L, and which was the first clone we recognized for its maturity value alone.

As stated in the last ALMANAC, XP50B, while its bloom date is late, has only 1 or 2 flowers per stem. This flower count and lack of branching, although typical of most species and hybrids, results in a short duration of bloom and thus adds little to the bloom season, maybe 10 or 15 days at the most.

Del Rey is about 5 days earlier than XP50B, has only 1 or 2 flowers and a short bloom span, but in 1989 we crossed the two, hoping to combine the genes of the two lates and get something even later. From this cross we selected XP251A which is about the same maturity as XP50B, has only 2 flowers per stalk, but a slightly improved flower. That same year we also crossed Sierra Dell to XP50B, hoping to combine its branching and long bloom season with late maturity. Selections from that cross were late enough, but none were branched.

Then, in 1993, Duane Meek's Late Douglasiana bloomed in our garden and

proved to be the first clone we had grown which was as late as XP50B. Furthermore, it was branched. Crosses made that year were unsuccessful, but in 1994 we obtained seed from crosses between it and both of our late selections, XP251A and XP252A.

The above sequence of events is summarized by year in the following table. The maturity data for each clone, the number of years of data and, in **type and underlined**, the average date of first bloom, are given after the name of the clone. Under the lines delineating the cross that was made, is the pedigree of the line or lines selected from that cross and used in further crossing.

1975

Abell 1, grown 15 years, bloom **Mar 16**

Abell 1, open pollinated, yielded XP1C.

1978

XP1C: grown 3 years, bloom **Apr 7**

X Soquel Cove, 20 years, bloom, **Apr 11**

Yielded XP3L

1981

XP3L, grown 2 years, bloom **Apr 21**

X Luihn 10, grown 7 yrs, bloom, **Apr 6**

Yielded XP50B

1989

XP50B, grown 14 years, bloom **Apr 21**

X Del Rey, grown 15 yrs, bloom **Apr 16**

Yielded XP251A

X Sierra Dell, grown 13 yrs, bl **Mar20**

Yielded XP252A

1994

Late Doug, grown 4 years, bloom **Apr21**

X XP251A, grown 5 yrs, bloom **Apr 19**

Yielded XP325A through J

XP252A, grown 5 yrs, bloom **Apr17**

X Late Doug, grown 4 yrs, bloom **Apr 21**

yielded XP326 A

1996

XP325 A through J, 1st year bloom **Apr 26**

XP326A. 1st year bloom, **Apr 26**

Selections from XP325 and XP326 have proved to be the best lines for the purpose of extending the season that we have grown to date. As stated in the spring 1996 ALMANAC, their flower is not up to present day standards, but they remained in

bloom through July 5, 45 days after the last flower on the named Pacificas faded. "Late Doug" was just as good for duration of bloom, but the quality of the bloom is not as good, especially the petal width and substance.

Additional crosses were made, but not with any of the better named Pacificas. Unfortunately, by the time we recognized the qualities of the new late crosses, every flower on the named varieties was gone.

While it appears that the late genes in my original selections came from *I. munzii*, not all *munzii* clones are late. Sierra Sapphire, a selected clone of *Iris munzii* was not particularly late during the seven years we grew it, averaging a first bloom date of April 5, just about mid season.

My notes show four other clones with a first day of bloom date later than April 10. These are: Mayor, grown 18 years, bloom April 13; XP270C, grown 2 years, bloom April 15; Gingerbread House, grown 5 years, bloom April 16; and XP 264C grown 2 years, bloom April 19.

I was at a loss how to present the data so the reader would picture what the development of a collection of late maturing varieties could do to the bloom season of the PCI. In the table opposite I have shown data which we have been routinely collecting ever since we started growing PCI, and which I hope will do just that.

Every five days we note each clone which has started to bloom during that 5-day period. Those are the data used in the discussion of bloom dates above. But also each five days we count all the fully-opened blossoms in the garden. We use these data when we tell people that peak bloom should be around April 15.

The data for the past 15 years, that is, the total number of open flowers in our garden on the dates indicated, are shown in the first column of the table (labeled "Past"). As has been done for each column, the actual number for each day has been multiplied by a factor which will make the count equal 500 on the day of maximum bloom. This makes it easier to compare years. For your information the actual average figure for that date is 484.3 and the maximum was 875 in 1989.

The second column contains the data for this year, excluding the lates, also corrected to 500 maximum. The actual maximum was 594.

The third column, labeled "1996 Lates" gives the data collected from the 15 late

clones. This includes XP50B, XP251A, XP252A, 9 selections from XP325, 1 from XP326, and 1 each of Late Doug, and one clump of *Iris purdyi* which contributed a total of 6 blossoms to the count. The actual maximum count was 49. This is not bad for 15 clones, 10 of which were only one year old, when you consider that the data for the rest of 1996 came from 203 clones plus all the hybrid material in the garden.

The last column combines the previous two columns and shows what a PCI season we could have enjoyed this year if we had planted approximately equal numbers of early, mid, and late clones.

FLOWERS OPEN ON GIVEN DATE

Dates	Past	1996	1996 Lates	1996 Total
January	3	0		0
Feb 1-15	5	1		1
Feb 16-29	11	2		2
March 1-5	17	6		6
March 6-10	26	12		12
March 11-15	40	39		39
March 16-20	85	124		124
March 21-25	158	170		170
March 26-31	278	305		305
April 1-5	400	483		483
April 6-10	479	500		500
April 11-15	500	468		468
April 16-20	443	433		433
April 21-25	336	312		312
April 26-30	224	98	31	129
May 1-5	122	38	122	160
May 6-10	76	15	276	291
May 11-15	48	3	480	482
May 16-20	10		500	500
May 21-25	5		429	429
May 26-31			459	459
June 1-5			245	245
June 6-10			245	245
June 11-15			122	122
June 16-20			92	92
June 21-25			82	82
June 26-30			31	31
July 1-5			6	6
July 5-10			1	1

ENGLAND LIKES THEM TOO

An article by Bob Wise in *The Garden*, a publication of the Royal Horticulture Society, England, does our esteemed flower proud. It features a full color page of Pacificas, principally varieties by British hybridizers, and a map depicting the location of *Californicae* species along the Pacific Coast.

The article acknowledges the many

hybrids produced by the Broadleigh Gardens in Britain, and Wise's 4 Pinewood introductions are receiving high commendation. His hybrids combine the Pacificas of Marjorie Brummit and Joe Ghio. and are lined out for trial and selection at Wisley.

My only criticism is the omission of SPCNI among the resource listings.

The two notes following were excerpted from the Newsletter of the Siberian Spuria and Japanese Group (Including Pacificas and Water Iris) British Iris Society March 1996.

Mrs. Julia Haywood, 6 Sunninghill Close, West Hallam, Ilkeston, Derbyshire DE7 6LS

I have been a member of BIS for about four years and have become extremely interested in growing Pacific Coast, sibericas, spurias, and Japanese irises as well as the odd species, e. g. *graminea*. I love these iris types much more than the bearded.

Just over a year ago we moved house at the end of September and this necessitated moving all my beloved irises. These were duly lifted and potted with the sibericas dying down fairly rapidly but looking quite healthy. The plants that really surprised me most (and always have) were the Pacific Coasts. I have always read that this particular group resent division and disturbance, and so it was with much trepidation that I moved them. They seemed relatively at home in their pots and I was hoping that I could soon put them in their permanent positions. However, I soon discovered that my new garden consisted of 1/2 inch of topsoil over the thickest, stickiest yellow clay. The builders had obviously dumped the subsoil on top of the soil and it had remained there for 15 years! I set about making new beds by removing the filthy stuff and improving the drainage in the now compacted topsoil. This was then finished off with new topsoil mixed with mushroom compost and other organic matter. The plants were not transferred to these new homes until May and I did not expect any flowers. However, the plants had other ideas, all of them flowering beautifully, especially a pale cream-white flowered plant that I do not have a name for, although I think it may have been CANYON SNOW. This had about 20 flowers, which all had two buds. An in-

nominata type had 3 separate flowerings about three weeks apart; and my three lilac-purple plants had two flowerings. I don't know if this is usual for PCI's but I have found them quite easy being able to split and transplant them any time between spring and late summer.

Shirley Ryder, Toadshole Cottage, Old Road Feering, Colchester, Essex, CO5 9RN

We have certainly had some extreme weather conditions this last year. Firstly we had several months of rain which is very unusual for us, and I began to get very excited about the prospect about having plants which reached their normal proportions.

Our garden was open for the village open gardens day. Then I received a most welcome visit from Robyn and John Brader from Australia. Robyn has one of the National Collections of iris species, but I'm afraid that it was too early in the season to see anything of great interest here. All I could muster were a few early Pacificas. I'm sorry that her visit to me was short because if she had come a couple of weeks later I could have shown her Pacificas in abundance, - in fact it was my best season ever. A lot of my new seedlings flowered and they were quite different from anything that I'd grown before. They had rounded petals and tended to have very soft colours of old gold, palest tangerine, and white. I acquired the seed in Australia in 1988, and I find that I would like to know more about it, especially whence the rounded petal comes. I do have the BIS book on Pacific Coast Iris, but if anybody can recommend any other literature on the subject of the development of the hybrids, I'd be very pleased to know.

LETTERS

John White, Minot, ME

SEED GERMINATION Enclosed are charts of my Seed Temperature experiment which seems to support Gene Loop's better-controlled work. Temperatures in the fifty-degree range seem to give the best germination rates.

DATA

- 1-11-96: Planted 449 seeds in plastic flats
Temperature: 52-53 degrees
Time at this temperature: 21 days
- 2-01-96: Flats moved to 66-73 degrees
Time at this temperature: 20 days
- 2-15-96: Four plants emerged after 35 days
- 2-21-96: Flats moved back to cool room
Time in cool room 10 days
One more plant emerged, 45th day
- 3-03-96: Moved plants back to warm room
Time in warm room 24 days
- 3-27-96: Flats moved back to cold room but temperatures are warming to 56 to 58 degrees on warmer days.
- 4-14-96: Flats moved back to warm room.

Total emergence 79 seeds, 17.6 percent

I am wondering if I left my seed flats in the cool for 60 to 90 days, might I not have better germination and emergence results. I will try that next winter.

Last fall I had 213 Pacificas as we went into the winter. Only 13 survived, and as of this date there are only 7 left. A seedling of Night Editor O.P. did bloom this spring, slide enclosed, but not much of a flower to look at.

At present I have 8 tenax seedlings and 50 others from open pollinated seed of *innominata-tenax*, Age of Chivalry, Different Drummer, and mixed garden varieties. We will see how many of these survive the winter.

Colin Rigby, Rochester, WA

I think my situation here at Rochester, Washington, approximately halfway between Chehalis and Olympia, is somewhat more severe than areas closer to Puget Sound. I think I am one USDA Zone colder, (7) as well. You have seen the area, you know that the plants are unprotected by fence, trees, etc. and are exposed to the open elements, - including

the wind which is formidable and constant. It is from the north in winter, from the west in summer, and from the south when a storm is coming in. It is not an understatement to say that a moderate wind blows all the time!

This past winter, the north wind was right off the Arctic iceberg, but surprisingly I lost very few plants. Those lost were mostly transplanted or disturbed last fall. Although some individual plants were lost in the established clumps, from 25 to 95 percent of the plants in each clump survived. Three or four named varieties were lost, obviously due to a weather factor; but I consider this a genetic weakness, as these plants were all normally difficult to transplant, poor growers, etc. I lost Harland Hand completely, although the other *I. douglasiana* clones survived well. Leaves on Mini Ma remained green.

Leaves on all the plants turned brown, with the exception of those varieties that have a large amount of *I. tenax* or *I. innominata* in their background, or actually are these two iris species. *I. bracteata* and *I. purdyi* go dormant here in winter, but nothing else does, including *I. tenax*. I've been told by the Aitkens that the leaves of PCIs are damaged when temperatures go into the 20's, and the plants are killed when it drops into the teens. Damage this year, however, has been amplified by water. Those bloom stalks that survived and tried to bloom have been killed by one late frost and continuous rainfall. A late frost down to 26° last April damaged the stem just below the bud on those iris that normally bloom early. And with the constant rains, buds on these stalks are rotting after opening.

So far, we've had two near normal flowers (Quintana) on a 3-4" stem. Plants are putting on wonderful leaf growth, but have stopped trying to flower.

The iris show at Tacoma was last weekend [mid-May], and there was a good display of PCI's there. I clerked, and although the judges did not seem to think so, I thought the flowers just a tad small for what they should be; but that could be because of my experience with them in my previous garden under different climate conditions

ORIGN OF "LATE DOUG"

In our original article on the new late-maturing Pacificas in the last issue of the *Almanac*, we surmised that the late-maturing *I. douglasiana* found by Duane Meek on a road bank near Sandy, Oregon, was possibly planted there by the late Walter Marx. A letter received from Willard E. Hoffman of Oregon City, Oregon, puts a new light on this topic.

"The *Iris douglasiana* you mention seeing on the roadsides near Sandy, Oregon, is one of many small and scattered populations occurring on roadsides throughout the Willamette Valley and the Coast Range north of the native range of the plant.

"In the 1950s and '60s, the Oregon State Highway Department landscape crew pioneered and developed hydro-seeding and mulching of newly constructed slopes. They used hay from highway rights of way containing flower seed heads. In addition, they collected seed of desirable plants, including *I. douglasiana* to mix with the grass seed.

"The Mount Hood Highway, near Sandy, underwent considerable reconstruction and widening during those years, and I think the plants in question were probably introduced in connection with this work."

SEED HARVESTING AND PLANTING

Compiled by Adele Lawyer

Since autumn is the season when SPCNI produces it's seed list, it is an appropriate time for a summary of the practices used by some of our members to grow PCIs from seed. A portion of those whose experiences are cited, were included in an earlier summary. *Almanac*, Fall 1987 pp16-20.

SEED PREPARATION

Californicae seed can be purchased through catalogs or society seed lists, or can be harvested personally from wild sources or garden plantings. Purchased seed is dry and ready to plant when received. In the case of self-harvested seed, drying is necessary.

Harvesting: If you plan to harvest seed from the garden, recovery and quality of seed will benefit if the spathes have been pulled down so that they do not grasp the pods. This should be done early in the pod's development in order to prevent damage to the pod and seeds by aphids, earwigs, and molds, sheltered between the spathes and pod.

Pods should be harvested when they turn tan and dry. This is generally in July or August in northern California and the Northwest. Even if partially green, they should be harvested when splits, however small, occur along the sutures or at the tip of the pods. Partial

splits were especially common in the Lawyer garden this year. It would be ideal if the pods could be harvested the day before they spring open and dump their contents; but this is impossible to judge. Pods can split open whether they are still green, or tan and dry. Hopefully in such cases, some of the seed can be recovered from the ground.

There are times when you must be elsewhere during a portion of the harvest season. In that circumstance, cheesecloth can be tried around the desired pods to insure against loss of seed. Alternatively, pods can be harvested without loss of viability, even when green, providing that the pods are plump and fully mature.

Drying: We, Lewis and Adele Lawyer, San Francisco Bay area, CA, harvest our garden pods directly into open-flapped coin envelopes. Small seed quantities are dried indoors in these same envelopes. If there are many seeds available and there is a chance that they would be too crowded to dry well, seeds are put into appropriately sized open containers. We have saved tuna and/or pet food cans through the years and find them adequate for most larger seed lots. Sometimes we use our household containers, too, (a step larger in size). When

amounts are very large, as from the Late Douglasiana listed this year, we use baking pans. We dry our seed at room temperature for a month, (or more if we don't get around to it earlier). Most lots, especially the small quantities, are dry in a much shorter time, but no damage results from a longer drying time.

Steve Taniguchi, Santa Clara, CA, uses small paper trays which he makes out of computer paper. The paper helps draw out the moisture quickly. His seeds dry in no longer than a week.

Shelling, Cleaning, Storing: Shelling and cleaning are the most time-consuming operations. The pods of some varieties are less prone to spring open on their own than are those of other varieties. We made a visual comparison of the quality of seed removed from pods which had to be forced open, compared to those which had opened and released their seed naturally. This year's results in which the quality of 12 different varieties was recorded, show a higher percentage of good seed in the open pods than in the closed pods. No valid conclusions can be made on the observations of a single year; but a more thorough study will be conducted in future years. If you were in the seed production business, however, you would hope that hybridizers would concentrate on varieties that would pop open readily. Much time and energy was spent trying to open pods which were stiff, tough, and tightly obstinate.

We shell most seed lots from single plants into small china bowls. The smooth texture of the china bowls releases chaff easily. The pods are then discarded, and the dust and small debris are blown out. [We have had years of experience with the "saucered and blown" technique, mostly with hot soup, however.] The larger lots are sieved from a colander-sized sieve into a large bowl to remove the bigger fragments, and then blown in batches of no more than 50 to 100 seeds. Our personal selections are then put back into the original harvest envelopes until planting time. This saves the time of re-labeling.

Terry Aitken, Vancouver, WA, stores his dry seed in nylon stocking bags to keep them aerated and to prevent premature germination.

According to several sources including Roy Davidson, Seattle, WA, seed can be stored 10 years without substantial deterioration, although most lots are

planted the same year. Roy, Steve Taniguchi, and others advise putting them in covered jars to insure dry conditions when long-term storage is desired. They should be protected from hot conditions in storage.

PLANTING MEDIUM

In the Wild: An analysis of the soils where PCI grow naturally was conducted by Eugene Loop, Walnut Creek, CA, and reported in the Fall 1990 *Almanac*. In Lake County, California, where large populations of *I. macrosiphon* colonize, he found the pH to range between 5.2 to 6.7. Good drainage was a constant as measured by his analysis of the proportion of gravel to soil. Proportion of gravel 1/8-inch or larger in size to soil, ranged from 6.9 percent to 79.8 percent, averaging 40 percent. On the other hand, with samples collected on the high coast mountain ranges where both *macrosiphon* and *purdyi* abound, the proportion of gravel to soil was only 10 percent. The pH here averaged 5.2 to 5.8.

Elsewhere on the Pacific Coast, the species are observed to do well in rocky, somewhat acid soils and along road cuts, where good drainage is provided as well as ample sunlight. Needless to say, in all these wild areas, seeds drop to the ground when they are in the mood, and leaves, soil, acorns, and pine cones, aided by wind, rain and scratching birds, cover them randomly. This natural blanketing results in thriving colonies. Unfortunately, an unnatural seed covering such as a home or other urban encroachment increasingly discourages germination.

Planting: Most gardeners have planted PCI seeds in the fall, knowing that they would be ready to transplant in the spring when they would be provided with a long period of growth in their first season. This technique worked well, but it was not until Eugene Loop's research was conducted that we now understand the factors involved. His research established that *Californicae* seed germinates best at between 40 and 65° F., with 50° being optimum. It will not germinate at 35° or lower, nor at 70° or higher. It is therefore necessary that the seeds reach the neighborhood of 50° in order to germinate and break through their seed coat. They will grow very slowly at these low temperatures during the late fall and winter months. As warmer temperatures develop, however,

and the germinated plants emerge, their growth is accelerated by temperatures which initially would have prevented them from germinating. During the long winter period, in all but the most severe winter climates, if the seed is left out doors, it will have been subjected, almost nightly, to a period when the temperature reached 50 degrees.

Although there are many variations in the planting medium preferred by growers, in general it is on the acid side, sterile, moist, and porous. Planting techniques are less variable.

We plant seed in November in 5-inch plastic pots filled with self-screened peat and oak leaf compost with a little complete fertilizer mixed in. We gently tamp down the mix and level the surface before planting up to 20 seeds. The seed is covered with 1/4 inch of the same mix, and again tamped, using a clean empty pot of the same size. It is then watered to holding capacity. Pots are placed out of doors and kept moist until emergence in approximately 2 months.

Phil Edinger, Cloverdale, CA, pots his seed in October in 6.7 to 7 pH, moisture-retentive potting soil, which includes 1/3 sand for drainage.

Vernon Wood, Pinole, CA, plants PCI seed around November 15 in a raised bed, using a high quality commercial potting mix. Seeds are scattered in the bed and covered with about 1/2-inch of mix. They are transplanted when they are 3 to 4 inches tall, which is usually before the middle of May.

Robert Kraus, Palo Alto, CA, soaks his seed for 24 hours before he plants them 1/2 to 3/4 inches deep in Super Soil. They are then put into a refrigerator at 35 to 40 degrees F. for 3 weeks, after which they are moved outdoors into a lathhouse. In addition to Bob Kraus, Dr. Lee Lenz, Dora Sparrow, and many others have planted in moist media and placed the pots in a refrigerator for 1 to 3 months. When they set the pots outdoors, a common comment is that "the iris emerge like grass!"

Ed. Note: In view of Loop's information (above) it is probable that all the viable seed had germinated in the refrigerator and the seed was waiting anxiously for temperatures more conducive to growth. When favorable conditions arrived, they popped up all at once. From all the reliable data reviewed to date, refrigerator time may well be wasted time

if outdoor temperatures fall within the desirable range.

Mae Lauer, of the Mendocino Coast Botanic Garden, Fort Bragg, CA, has found that most potting mixes which were tested were satisfactory. She prefers equal parts of their local acid soil, peat, and perlite since this loose mix makes it easier to separate seedlings when setting them out.

At the Santa Barbara Botanic Garden, it was the practice of Dara Emery (deceased Horticulturist of the Santa Barbara Botanic Garden), to plant in late October using a potting mix of 2 parts each of washed sand and Canadian peat moss, plus 1 part of medium grade Sponge Rok, and a complete organic fertilizer containing blood, bone, cotton seed and kelp meal, with decomposed granite and oyster shell for drainage. After planting, they were covered with sand or ground peat moss, and watered-in with a solution of non-pathogenic micro organisms to compete with any pathogens which might be present. Pots were placed in a lath house and kept moist. First emergence was in November, but average emergence was 60 days after planting.

Colin Rigby plants in 4-inch pots using Super Soil, (a sterilized commercial potting mix), and covers with about a quarter inch of the soil. Although the most prevalent season for planting Pacific Coast iris seed is in the autumn, Colin Rigby, who recently moved to Washington from northern California, tells us that in northern Washington State, planting seed in the spring has worked better for him to date. When he planted his seed in the fall 1994-1995 season, the weather was warm in late January and part of February and the seeds started to germinate. In March, along came six weeks of cold, snow, and rain, which finished them off. Colin lost all the seed pots! In 1996, he planted seed in late January-February. Even with constant rain, germination and growth has been very good in all his pots.

Terry Aitken, in southern Washington, across the Columbia River from Portland, plants in pots in December, using approximately 50% sand, and 50% either peat or compost. This loose mix facilitates easy transplanting with minimum damage to the roots. He sets them outdoors. After the rain and snow of the winter months, they start to germinate in March. They are then moved into a

greenhouse where warmer temperatures accelerate their growth..

Roy Davidson, Carolyn Spiller, and Dorothy Hujsak have planted seed in Zip-Lock plastic bags containing a moist medium. They placed the bags in a cool area, such as under a bench in a lath house, and reported very good results.

Dorothy Hujsak, Tulsa, OK, ran an experiment some years ago in which she planted three batches of seed from Joe Ghio 1/2-inch deep in moist Michigan peat. Some batches were frozen for a month, others were refrigerated for a month, and the third group was not pre-treated, but placed on a window sill.. The latter treatment emerged in less than a month, the others much later, demonstrating to her that there was no need for chilling. Dorothy has planted successfully in African Violet mix and also in a mix of 3 parts milled sphagnum, 2 parts vermiculite, and 1 part perlite.

Elaine Hulbert, Floyd, VA, sows seed in pots without chilling. They emerge in a few weeks. (Earlier than any other species of iris with which she has experience).

Bob Ward, Littlerock, AR, uses a mix of peat and sand. Both he and Garland Bare use styrofoam cups for containers.

Garland Bare, Lincoln, NE, soaks his seed overnight and plants 10 seeds each 1/4 inch deep in 6-ounce styrofoam cups with multiple drainage and ventilation holes, using a commercial peat and vermiculite planting mix. The cups are placed in trays, where they stand in distilled water. [Distilled water is used because of the high calcium content of the local water.] The trays are placed in plastic-covered window wells or in cold frames in October. The temperature ranges between 30 and 50° F. They are never watered from above. Germination occurs from December through January. When emerged, the cups are brought indoors to a cool window sill with no more than 4 to 5 hours of sunlight per day. They are transplanted when they reach the 4 or 5-leaf stage by slitting out the sides and carefully separating the individual plants, disturbing the soil as little as possible.

Nora Scopes, New Barnet, England, plants in the fall in an acid mix containing vermiculite or sand. They are left outdoors except in severe winters when they are brought indoors.

Ray Wilson, Chorley, Lancs., England, plants his seed in a 40° greenhouse over winter and plants them out in the spring.

Trevor Nottle, Adelaide, S. Australia, uses a mix of peat, coarse sand, pine bark, and slow release fertilizer for seeding.

Dora Sparrow, Christchurch, New Zealand, received her seed from SPCNI in January, (summer season) this year. She planted them immediately in seeding mix put into 3-inch seed trays. Trays were placed on the shady side of a building, and emergence occurred 4 weeks later. At the end of March, they were moved to a warmer area. She started potting them in May. By July they were 5 inches tall.

We would like to make an editorial comment about germination of PCI seed. We have countless letters from members who say that their seed failed to germinate, that germination was "good" or "poor" or even "excellent". As noted above, for some it even comes up "like grass". Of all the above amounts, only "failed to germinate" means the same thing to everyone.

We have valid germination records from only 4 sources, Gene Loop's carefully controlled germination studies, Dara Emery's notes, John White (see "Letters" in this issue), and our own data.

Gene Loop averaged 74 percent germination at 50°, his optimum temperature for germination.

Dara Emery's notes on his routine plantings to obtain stock plants for the Botanic Garden from 1955 through 1987, contained numerous notations giving actual germination counts. From these we obtained the following data.

- I. douglasiana, 8 trials, 58.7 percent.
- I. innominata, 11 trials, 56.1 percent.
- I. tenax, 3 trials, 57 percent.
- I. macrosiphon, 2 trials, 55 percent.

He also recorded "days to first emergence" for all his plantings. For your information, we have summarized these data as follows:

- I. douglasiana, 60-94 days, average 69.8.
- I. innominata, 37-131 days, average 75.1.
- I. tenax, 42-124 days, average 77.5.
- I. macrosiphon, 43-73 days, average 54.2.

John White averaged only 17.6 percent germination, but in a regime which probably did not include sufficient cooling. (See *Letters*, page 9)

In our plantings, dating back to 1978, we have averaged 51 percent. This was discussed in the fall, 1995 issue.

1996-1997 SEED EXCHANGE LIST

Seeds are available on a first-come, first-served basis. All seeds are priced at \$1.00 for the first packet, and \$.50 for each additional packet. Please order by number. Make checks payable to SPCNI, and address orders to Colin & Teresa Rigby, 18341 Paulson SW, Rochester, WA 98579

Unless otherwise specified, all seeds are open-pollinated
 Lot numbers of all Garden Hybrids begin with "960", all Species with "961"
 Lot numbers are followed by the donor-symbol, and the item.

SEED FROM NAMED GARDEN HYBRIDS

LOT#	DONOR	VARIETY	LOT#	DONOR	VARIETY	LOT#	DONOR	VARIETY
96001	F	Ami Royale	96018	A	Foothill Banner	96035	H	Munras
96002	A	Amiguita	96019	A	Garden Delight	96036	H	Napa Valley
96003	A	Augie	96020	A	Gold Dusted	96037	H	Ojai
96004	H	Augie	96021	A	Harland Hand	96038	H	Pacific Dazzler
96005	A	Banbury	96022	H	Idylwild	96039	A	Pacific High
		Gnome	96023	A	Imp. Valley-	96040	A	Pacific Rim
96006	A	Battle Alert			Banner Type	96041	H	Pescadero
96007	A	Big Money	96024	A	Jean Erickson	96042	V	Rincon
96008	H	Big Wheel	96025	H	Joey	96043	A	Roaring Camp
96009	F	Boomtown	96026	A	Las Olas	96044	F	Ruth Hardy
96010	A	Califia	96027	A	Little Jester			(Valley Banner
96011	A	Candy Banner	96028	A	Little Toby			type)
96012	H	Canyon Snow	96029	A	Lompico	96045	A	School Boy
96013	A	Carrot Top	96030	A	Mayor	96046	A	Sierra Stars
96014	F	Clarice	96031	A	Mendocino	96047	A	Sugar Candy
		Richards			Banner	96048	J	Valley Banner
96015	A	Coastal Glow	96032	F	Mini Ma	96049	A	Western Queen
96016	F	Dr. Pauline	96033	H	Mission Santa	96050	A	Wilder Than
		Thompson			Cruz			Ever
96017	A	Endless	96034	F	Moonlad			

SEED FROM MIXED GARDEN HYBRIDS

LOT#	DONOR	VARIETY	LOT#	DONOR	VARIETY
96051	A	Mixed Garden Hybrids	96051	M	Mixed Garden Hybrids
96051	F	Mixed Garden Hybrids	96051	O	Mixed Garden Hybrids
96051	K	Mixed Garden Hybrids	96051	V	Mixed Garden Hybrids

SEED FROM UNNAMED GARDEN SEEDLINGS

LOT#	DONOR	VARIETY	LOT	DONOR	VARIETY
		MUNZII-DERIVED HYBRIDS			
96070	A	XP143: Sierra Dell X a Lenz-Lawyer seedling	96075	A	Lenz-Lawyer hybrids
96071	A	XP210: selections bulked			LATE MATURING
96072	A	XP211D: spidery form	96080	A	XP325: "Late Doug" X XP251A
96073	A	Abell 66-44-30	96081	A	XP326B: XP252A X "Late Doug"
96074	A	Lawyer blue-violet blends	96082	A	XP326C: XP252A X "Late Doug"

HAND POLLINATED CROSSES

LOT	DONOR	VARIETY	LOT	DONOR	VARIETY
96090	H	Canyon Snow X Idylwild	96093	H	In The Money X Munras
96091	H	Idylwild X Big Wheel	96094	H	Pacific High X Idylwild
96092	H	In The Money X Simply Wild			

SEED FROM PCI SPECIES

LOT	DONOR	SPECIES	LOT	DONOR	SPECIES
96101	E	<i>I. bracteata</i>	96116	L	<i>I. purdyi</i> Mendocino County, CA
96102	J	<i>I. Chrysophylla</i> X <i>I. douglasiana</i> Garden origin	96117	V	<i>I. tenax</i> : various shades
96103	A	<i>I. douglasiana</i> From the Univ. of CA Botanical Garden	96118	B	<i>I. tenax</i> Benton County, OR
96104	A	<i>I. douglasiana</i> "Late Doug"	96119	B	<i>I. tenax</i> Botkin Creek, Benton Co., OR
96105	A	<i>I. douglasiana</i> : white, nice, late maturing	96120	E	<i>I. tenax</i>
96106	A	<i>I. douglasiana</i> Garden grown	96121	E	<i>I. tenax</i> : marked for substance Eden Valley, OR
96107	D	<i>I. douglasiana</i> Derr Garden	96122	E	<i>I. tenax</i> : pale forms, Eden Valley, OR
96108	G	<i>I. hartwegii</i> Shake Ridge Road, Amador County, CA	96123	F	<i>I. tenax</i> : light shades, near Napavine, WA
96109	G	<i>I. hartwegii</i> Hale Road, Amador County, CA	96124	Q	<i>I. tenax</i> Valley Banner types collected Lane & Douglas Counties, OR
96110	C	<i>I. innominata</i> China Flat, Coos County, OR	96125	E	<i>I. tenax</i> X <i>I. innominata</i> hybrids
96111	E	<i>I. innominata</i> Coquille Falls	96126	P	<i>I. tenax</i> var. <i>gormanii</i> Collected Hagg Lake, OR, at site of 1995 Expedition
96112	E	<i>I. innominata</i>	96127	E	<i>I. tenax</i> sbsp. <i>klamathensis</i>
96113	E	<i>I. innominata</i> Cow Creek, OR	96128	E	<i>I. thompsonii</i>
96114	E	<i>I. innominata</i> Mt. Ruben Rd, above Rogue River, OR			
96115	C	<i>I. munzii</i> Bear Creek area, Tulare County, CA			

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