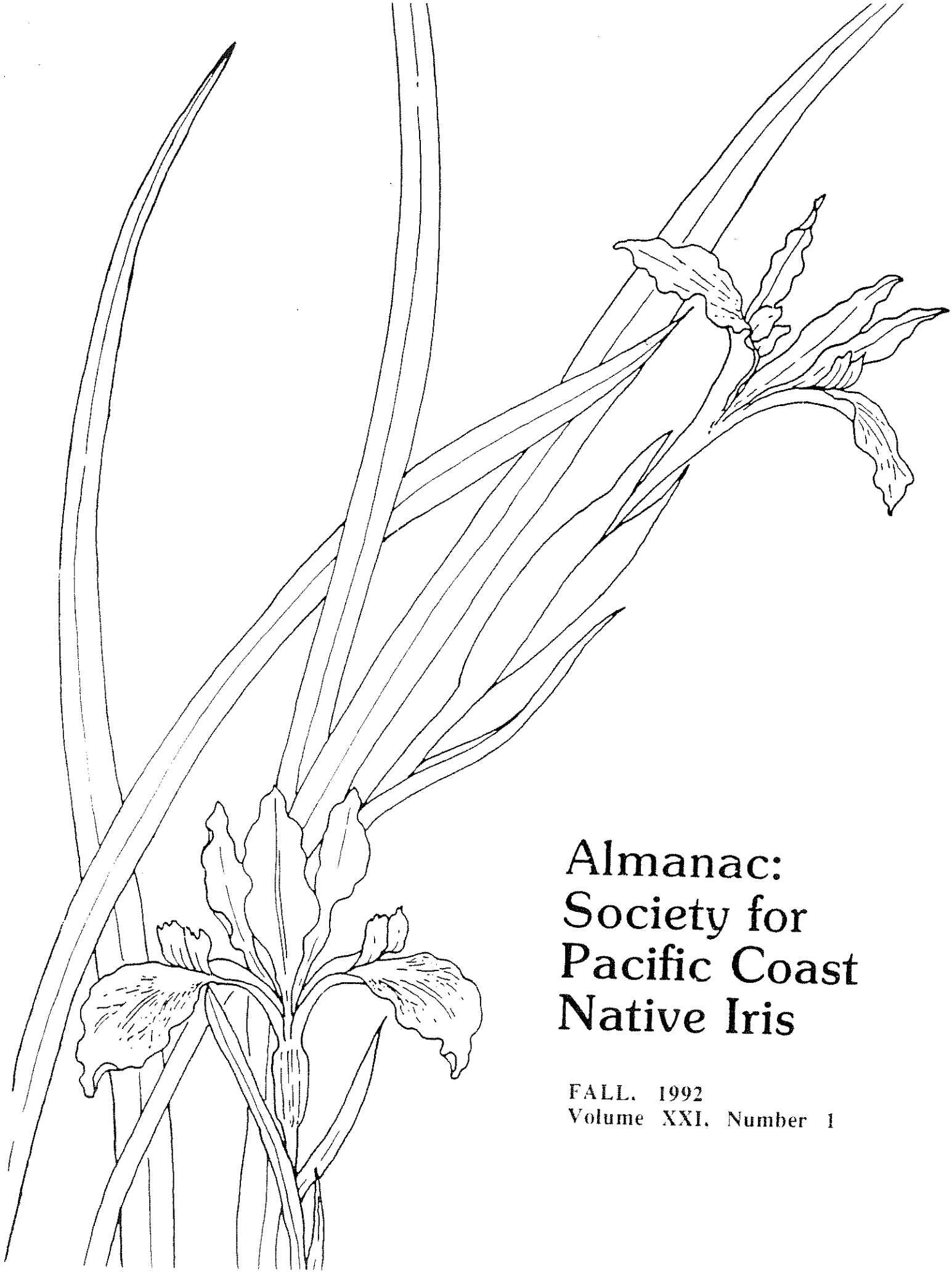

Almanac: Society for Pacific Coast Native Iris

FALL, 1992
Volume XXI, 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 interspecific 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 collumn to the right.

EXECUTIVE COMMITTEE

COMMITTEE CHAIRMEN

ALMANAC REPRESENTATIVES

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

ALMANAC deadlines are March 1 and September 1. Back issues are available for $3.50 each, postpaid . Complete index arranged either chronologically, by subject matter, or by author. $1.00, each or all 3 for $2.00, postpaid. Please address the Editor.

PRESIDENT'S MESSAGE

It has been a most unusual year. An early spring brought our favorite flower into bloom almost a month earlier than usual. Now even Oregon has joined California in an unusually dry year. It seems mother nature is determined to see to the survival of the fittest. Any PCI's on the West Coast have been tested twice with very cold winters and some hot and dry summers in the past three or four years. And yet there are some beautiful PCI's being introduced each year.

Our PCI clumps have been increasing in size. It is so nice to be able to pick a bouquet and still have a garden full of bouquets! We have taken some down to our city library, where they have been enjoyed by many.

I am wondering if those who have climates too harsh for PCI's are able to grow Cal-Sibes. It would seem that they might withstand the cold better than PCI's. It should be an area of wide open possibilities for anyone who wants to try it. We have harvested a few seeds from Cal-Sibes this year. There was just one seed per pod! Has anyone out there had any luck growing seeds from Cal Sibes? If so, what did the flowers look like? Were they unusual?

We have met many wonderful people through our interest in iris. One such couple invited us to a huge dahlia field with them recently. I was sniffing away, hoping to find a dahlia that smelled good. I found some that had no fragrance. Then, much to my amazement, we found one that smelled like a rose! It was a light fragrance, but definitely that of a rose. This has renewed my hopes that someone may yet find and report a PCI with a fragrance. And how about rebloom? I'm sure that there are some rebloomers around we'd all be glad to hear about.

Happy gardening,

Joanne

After four years of freezes, seed failure, dry spells, weeds, and whatnot, all the effort was worth while. There was so much beauty in the PCI garden this year it was hard to absorb it all at one time! I marked 61 different plants as exceptional, and still missed some that should have been selected. I just had time to number the flags with tape, which you can see if you visit the garden next year. Please call ahead to make sure someone is here. When you come you can tell me which ones are worth introducing.

I hope by next year to have my permit to sell some plants, and have an open garden. I hope, also, that I'll be able to spend more time in the field so that I can get a trip set up again. I know there are all kinds of possible areas to visit. It's just having the time to ferret them out.

Glen

FROM THE EDITOR

The request above from Joanne Derr for help in finding a Pacific Coast Iris with fragrance, reminded me that we should always be alert for characteristics that would improve or augment some aspect of the PCI.

Many of our readers have expressed their desire for fragrance in the PCI, including two in this issue. Cohen wrote that a deep violet-blue form of *Iris macrosiphon* in Lake County was "deliciously scented", but I have sniffed a lot of Lake County macrosiphons, and have yet to find one that is fragrant. Lenz, in his "Revision of the Pacific Coast Iris", however, also notes that Alice Eastwood reported a clone of macrosiphon collected at Clear Lake Park, Lake County, with a "delicate fragrance". Lee Lenz himself, told us several years ago that he had found "delightful fragrance" in *I. macrosiphon* near Boonville with some of the bluest flowers he had ever seen. Although we have noble intentions and hope to do so each spring, we never seem to get to that area during bloom time. Maybe someone who lives closer to Boonville could go there and smell the flowers for us. Anyway, *Iris macrosiphon* seems to be the best hope for a source of fragrance.

We also need a smaller, compact plant which would be useful in rock gardens. I found such a plant back in 1984 in a sec-

ond generation cross involving Valley Banner and Sugar Candy. It had leaves and flower stems only 4 inches high. Unfortunately it was planted in an area that developed crown rot, and, like several plants around it, XP41P gave up its life for our study of this pathological problem. Colin Rigby catalogs two dwarf plants. One, MINI-MA is listed as being from 3 to 4 inches tall, but largely because its leaves are prostrate. The other is his own LAGUNA SECA which is taller, but of better plant type. The Check List also shows SANTA PAULA as 4", and BLACKEYED SUSAN, CALIFIA, and PASADENA INDIAN as 5" tall. Califia, in our garden, however, has stems as tall as 15 inches.

At the other extreme, the incorporation of *Iris munzii* in our breeding has given us height, with flower stems as tall as 36 inches. These plants also fit into the scheme of things in our gardens and should be exploited.

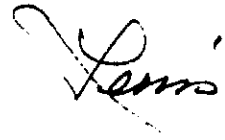
Richard Kiyomoto in Connecticut, John White in Maine, and others are working to achieve winter hardiness for the eastern and northern states.

Bob Ward in Arkansas and Susan Lambiris in North Carolina are working toward summer rainfall tolerance. This could tie in with our work on crown rot for which we need genetic resistance. In this regard, those of you who visit the coastal stands of PCI should be on the lookout for plants surviving in soil which remains moist or soggy during the summer months.

In the Fall, 1991 issue of the ALMANAC, Joe Ghio revealed his interest in flower substance, an important factor in outdoor plantings. Many have noted the importance of stalk branching and multiple blooms in prolonging the bloom period of a cultivar.

We have heard many complaints of flower stalks that grow out sideways instead of up and down. One member has even written us suggesting that we publish a list of cultivars with upright flower stems! There is a discussion of this problem in the article about judging PCI's elsewhere in this issue.

The thrust of all this is that we should constantly be alert for traits that might improve or make an interesting addition in the gene pool of the PCI. I'll have to admit that they are pretty nice just the way they are, but we only go backward with complacency.



EXPEDITION 1993

Adele Lawyer

When J. T. Lawrence of Woodland, Washington told us that she would be able to visit us on October 8, we took advantage of the opportunity and invited some other local SPCNI members to view her slides of the 1992 trip and show some of their own. Present were Glenn and Nell Corlew, Gigi Hall, David and Evelyne Lennette, Gene and Joanne Loop, Ed and Mary Ralston, George and Olive Waters, Lewis, and myself. After the slides, Lawrence, who surveyed the southern Oregon PCI area before and after this year's Expedition, told us about some exciting, iris-populated roads which she explored. A decision was made to try to arrange for the 1993 Expedition to be in that area, the general area of the first Expedition, (1989), i.e. Southern Oregon - Northern California.

The date will be mid-May, as it was last year, prime bloom time on the average for this area. Our route will follow portions of the trip described by Lawrence elsewhere in this issue. [See *Chronicles of Post Expedition Travels*] We are considering overnights at Grants Pass, Roseburg, or other towns in the vicinity. Among the areas we may visit are Bear Basin and the Shelly Creek area in California, and Whiskey Creek in Oregon. Then, in Siskiyou National Forest, we will want to travel Road 3353 out of China Flat, where Lawrence saw the *I. tenax* X *I. innominata* swarms, and Road 3348, which branches east a short distance south of China Flat. This leads along the South Fork of the Coquille River to Eden Valley and Mt. Bolivar. Along this route we will see *I. chrysophylla*, *I. innominata*, "sheets" of *I. tenax*, and *I. tenax* X *I. chrysophylla* hybrids. This road splits off onto the Cow Creek Loop Road where *I. chrysophylla* and *I. tenax*, (individual and hybridized), and *I. innominata* can be seen. There is a chance that we will cross east of I-5 to see the hybrids with *I. chrysophylla* near

Glide, where the *I. tenax* are an especially dark purple.

The route is not yet fixed, and there is a possibility that we may want to consider, as we did this year, spending three days instead of two. The third day could be optional for those who can only spare the weekend.

FUTURE EXPEDITIONS

It may be a disappointment to some of our readers that the Rogue River trip will not be scheduled for 1993. Investigation by the Derrs and consultation with others indicated that the Lodge accommodations were not adequate for the size of our group nor suitable for couples requiring privacy. In addition, if we missed the bloom date, which varies from year to year, we would be confined here without access to an alternate elevation or latitude where the iris would be blooming.

At a gathering of local SPCNI members, some expressed an interest in taking the Rogue trip regardless of the minor inconveniences of the accommodations. They would like to hike the trails and experience the scenery and the plants and flowers regardless of whether wild iris were in bloom. If you are one of these, please let us know. This could happen in 1995.

In 1994 we hope to have the Expedition in the San Francisco Bay area sometime in late March or early April when *I. douglasiana, macrosiphon*, and *fernaldii* are in bloom, as are the hybrids in Ghio's garden, and in other special gardens where the PCI are featured.

UPDATE ON INCORPORATION

Adele Lawyer Secretary, SPCNI

Our Articles of Incorporation have been accepted by the State of California, and we are now awaiting acceptance of the new Corporation as a non-profit organization by the Internal Revenue Service.

The Articles of Incorporation, the new Bylaws, and all the necessary accompanying letters and documents were prepared at no cost to us by Abe Feuerstein, attorney with Feldman, Walderman, & Klein of San Francisco, and his assistant, Mardi Becker. We are certainly appreciative of these two for their invaluable services and also for their helpful suggestions relative to the organization of our group.

The papers for incorporation were sent to the State of California in April and approval received in July, 1992. Then, although we were previously classified as an exempt organization by the Internal Revenue Service, we had to reapply as a corporation. The application was sent to the IRS on August 28, and we are waiting to hear from them.

After everything is completed and accepted by the proper government agencies, we will publish the new Bylaws.

PCIs IN THE MENDOCINO BOTANICAL GARDENS

Gene Loop, Walnut Creek, CA

Anyone who may travel the California Coast Highway 1 in Mendocino County should note that the Mendocino Coast Botanical Gardens, just south of Fort Bragg, have recently added Pacifica iris to their plant collections.

Mae Lauer, a resident of Fort Bragg, and a member of the garden's board of directors, is in charge of the plantings. She is the daughter of Leila Romer of Ukiah, a longtime and still active member of the American Iris Society, and Mae is now a member of SPCNI. She reported that over 200 PCIs were set out in the fall of 1990, more were added last fall, and if all goes well, another planting will be made this year. The plantings are mostly hybrids, both new and old. There are a few species in the planted collection in addition to *I. douglasiana* which is native through most of the garden.

The Mendocino Coast Botanical Gardens consist of 47 acres between Highway 1 and the ocean. Following is a quote from their brochure:

> "The mild rainy winters and cool foggy summers of this area provide ideal growing conditions for our more than 20 sizeable collections of plants. These include camelias, dahlias, ivies,

fuchsias, heathers, heritage roses, Pacific iris, perennials, and rhododendron hybrids and species. The property is sheltered by a native coastal pine forest and includes the fern-covered canyon of Digger Creek, coastal bluffs, and a rocky intertidal habitat."

The PCNs are planted along the canyon rim trail in a shady area. Quite a few were in bloom when Joanne and I were there on April 7. The native *Iris douglasiana* elsewhere through the garden were in full bloom. They are purple and lavender.

The land is owned by the Mendocino Coast Recreation and Parks District and is leased to the Garden for a small annual fee. The gardens are managed by a non-profit organization, entirely supported by admissions, memberships, sales from the nursery, and volunteers. Admission this April was $5 per person, $4 for seniors.

MIMSEY WINS MITCHELL AWARD

Vernon Wood's MIMSEY (Wood '88) has been voted the 1992 recipient of the Mitchell Award. Mimsey received 22 votes. Runners up were Sierra Dell with 19 votes and Fort Point with 9.

Mimsey, pictured below, is a ruffled gold self with mid brown veining and a small deeper yellow gold signal area. It is from a cross of Three Cornered Hat by a Wood seedling.

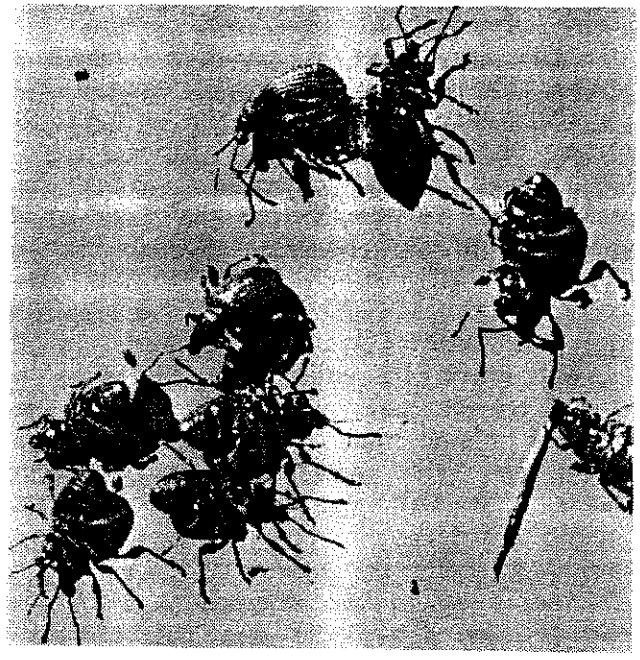
Mimsey

BUGS! (Specifically, Root Weevils)

Vernon Wood, Pinole, CA

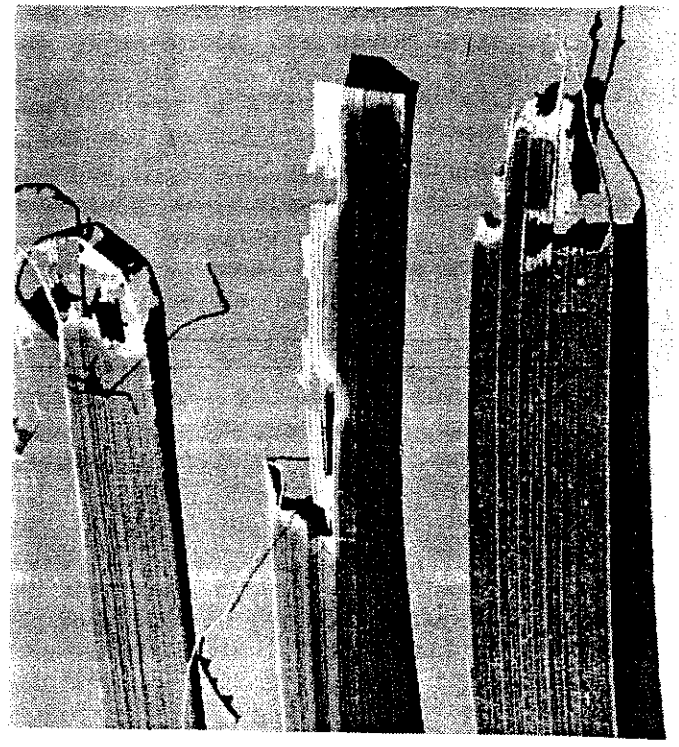
From late May to early September my irises, (PCI, tall bearded, and medians), have been chewed on by some hungry bugs in my garden. Some of the bugs were collected at night and have been identified both by a local nursery and the County Agricultural Inspector as a root weevil, which is in the beetle family.

They overwinter as small, tan larvae the size of rice grains which will feed on the roots and rhizome. In June and July they emerge as adult weevils and continue chewing, but on the leaves at this stage. They are about 1/4 inch in size, are a deep reddish brown in color, and have a quilted pattern on their backs. They are shown below about 3 times life size.



Adult root weevils, 3x

By late summer or early fall they lay 200 to 300 eggs in the soil around the rhizomes or in the rhizome itself. These hatch out and start the cycle all over again. In my garden, the problem started in late May, when I checked at the base of the foliage of a tall bearded plant and found about 20 to 30 larvae. They appeared to be newly hatched and had done no visible damage. Although there was no chewing damage showing, out of curiosity, I dug the plant. The entire center of the rhizome was eaten away, but no bugs were found. There was one channel about 1/2 inch wide and 2 inches long where the rhizome had been eaten. Soft rot had not set in. At the same time, the severe leaf-chewing damage was showing up in about 10 to 15 percent of my garden. Damage to PCI leaves is shown below.



PCI leaves chewed by adult root weevils
Photos by the author

There was no pattern to the areas of the garden effected, and I could not trace their source to soil additives, new plants from outside areas, or any other options.

The weevils feed only at night, and can be spotted with a flashlight. I use a test tube to put over them, and knock them into the tube. This has to be done carefully, as they startle easily and will just drop onto the ground and play dead. I have gathered as many as 30 each night when the infestation was at its peak.

They can be controlled with *Orthene*, used according to the label. The foliage and base of the plant should be thoroughly wetted. This should be done monthly from May through September, or as needed to stop the infestation. This will also get most of the other iris bugs.

The root weevil is not an uncommon pest in the Bay area. These weevils feed on many plant genera, especially woody perennials.

A SEED-EATING BORER EXPANDS ITS DIET

Adele Lawyer

In the Fall '91 issue of the ALMANAC, we reported that the larva of a Lepidopterous moth, *Amphipoea americana* var. *pacifica*, was becoming an increasing problem on PCIs. This borer has previously been recognized as invading pods and eating the seed, but attacking the leaves and rhizomes was a new characteristic. And indeed, evidence of this has increased in the ensuing year. Damage has been principally confined to garden situations, but we have found evidence of its presence in one wild stand of *I. douglasiana* where it is doing substantial damage. This was at an often-visited site where douglasiana grows on a rocky, sheep-grazing hill bordering the Coleman Valley Road overlooking the Pacific ocean in California. Here damage was severe, affecting one in every ten plants.

We have looked for but found no other evidence of borer damage to native Pacifica plants or foliage wherever we have seen them growing wild during the last year and a half. We methodically searched for damage in *Iris munzii* near Visalia, in *Iris hartwegii* in the Sierras above Sonora, in *Iris tenax* subsp. *klamathensis* near Orleans, and in *Ii. innominata, chrysophylla, tenax, bracteata, tenuissima, purdyii, thompsonii*, and *I. macrosiphon* in both California and Oregon.

Now, however, it has been reported from gardeners, not only from Alameda, Contra Costa, and Marin County, but in the Sebastopol-Santa Rosa area of California in at least three gardens. Phil Edinger, of Cloverdale, reported that he first noted the borer in his garden six years ago. He has been spraying and drenching the soil with Cygon each spring, and finally this year he appears to be rid of them.

The lifecycle of the borer starts with the adult moth. It is a night flier and is not attracted by light. It is a very attractive moth with slim wings and body. Its front wings are a burnt sienna color and have a golden iridescence. It measures one to one and a half inches from wing tip to wing tip. Most of the adults lay their eggs in the spring, although some have been seen flying in the summer. From what has been observed to date, it appears that this borer has only one generation a year, although some individuals may have a different timing. They lay their eggs on the flowers or leaf tips in the spring, but although some of the moths may lay eggs in the summer, it is probable that these will emerge as larva at the same time as the spring-deposited eggs.

The larva emerge while the PCI's are in bloom. They may be seen as tiny larva (worms) at the top of the bloom stalk and leaves. They start feeding, and put on weight as they progress downward. They are cannibalistic, and although many larva may originate on an individual stalk, by the time the rhizome is reached, only one well-fed larva will remain.

The next stage is pupation. Both the pupa, and the older larval stage where webbing occurs can last for a very long time, the larva virtually hibernating in this stage before pupating. This stage takes place in the soil at the base of the plant or in the rhizome. Details are not known.

Control of the adult necessitates spraying with Cygon or Orthene in the spring every 10 days from the time the new leaves are about 6 inches tall through bloom time. This systemic treatment will also control the newly hatched larva. It will <u>not</u> control larger larva within the leaves. You can squeeze them by hand within the leaves or stalks. Once the borer enters the rhizome and kills it, the rhizome should be dug out, put in a plastic bag and put in the garbage or burned.

This borer which has now, unhappily for us, changed or expanded its diet, was first described in the literature in 1918. It was first reported as occurring in *I. douglasiana* at Inverness in 1962, but only as a seed feeder. We have evidence that it can be spread to new areas in potted, and perhaps in bare-root plants.

It does not appear that hybrid PCIs are any more susceptible to damage than the species. Native species in botanic gardens were as severely damaged as hybrids in private gardens. We have heard reports that some varieties appeared to be more resistant than others, but further observations will be necessary to collaborate this.

We obtained the preceeding information on a visit to the Entomology Department of the University of California at Berkeley where we spoke with Dr. Gerald Powell, their Lepidoptera specialist, to learn more about the borer's lifecycle.

We also showed Dr. Powell some infested pods of yellow *I. macrosiphon*, which we had collected in its Lake County habitat. About half of the pods we had gathered for seed were infested with small pink larva with red heads, many accompanied with sparse webbing. In many cases these caterpillars had eaten all of the seed. Some of the collected pods were dry, hard, and so tightly closed that they could scarcely be pried open. Pods of this kind always contained the small, pink larva. They were unlike the larger, cream-colored larva with dark segment markings and brown heads that are associated with our new borer problem. Dr. Powell told us that these pink larva were *Endothenia ruby punctana*, and that they are seed eaters. This smaller larva does no damage to plant parts other than consumption of the seed.

JUDGING PACIFIC COAST IRIS

Compiled by Lewis Lawyer

In mid April, Vernon Wood led a judges training session on PCI, which was held in our garden. We taped the session, and thought it would be interesting to write down some of the comments.

It turned out to be a very warm day, and the greater part of the session was held under the shade of a large oak tree where we had a hundred or more potted plants in bloom. To get things started, Vernon quoted from the Judges Handbook (Book), gave his personal ideas about the subject under discussion, and then asked for comments.

Vernon Wood discusses judging in Lawyer garden

Book: "The plant should be vigorous and hardy in the limited areas where Pacific Coast native iris will thrive".

Wood: The plant should be vigorous but also should transplant with no more than the usual difficulty. Some PCIs are very difficult to transplant.

Book: "Stems should always hold the flower away from the ground and above the foliage"

Wood: If you look carefully, there are few PCIs that have their blooms above the foliage, most of them are right in the top of the foliage.

Book: "Each stem should bear a minimum of two buds"

Wood: Most cultivars will have two to three buds. When you include munzii and douglasiana you can get more. Lewis had one with 17 or 18 buds on a single stalk, or was it 19?

Lewis: 18.

Wood: Did it blow over?

Lewis: Not quite, but we probably staked that one. The stalk had five branches, and with that type of branching you can have three open flowers at the same time. This makes the flower stalk pretty heavy in a rain.

Wood: Yes, or in a wind. Did the flowers crowd each other?

Lewis: No, because the three flowers which are open at the same time are usually on separate branches.

Wood: Remember, though, that if you were to go out in the garden right now and find one with a flower stalk like that,

the only thing that really matters in judging that plant is "Do you like it, or don't you".

The book says "Two or more flowers". Now what are you going to do about the ones that have one bud per socket, beautiful form, and lots of flower stems? In three years you could have a clump 6 to 10 inches across with masses of blooms. I think the book should include single blooms for the PCI.

Rigby: I agree with that, because if you are hybridizing with innominata, which only has one flower per stem, you will often get plants with only one flower. One flower is normal for that species. I usually agree with the manual, but those plants certainly have merit.

Lewis: Yes, and so does Fairy Chimes. It doesn't have innominata, but it only has one bloom per stalk, in spite of which it can look like a field of snow with all its white blossoms. It increases over ten fold a year. It, like all clones with single flowers, however, has one distinct disadvantage. It is beautiful for a few days, but the bloom season doesn't last nearly as long as that of plants with multiple branching bloom stalks. A large clump of Sierra Butterflies will have continuous blooms for over a month.

[Ed note: In 1987, one clump of Sierra Butterflies was in bloom from March 27 to May 28.]

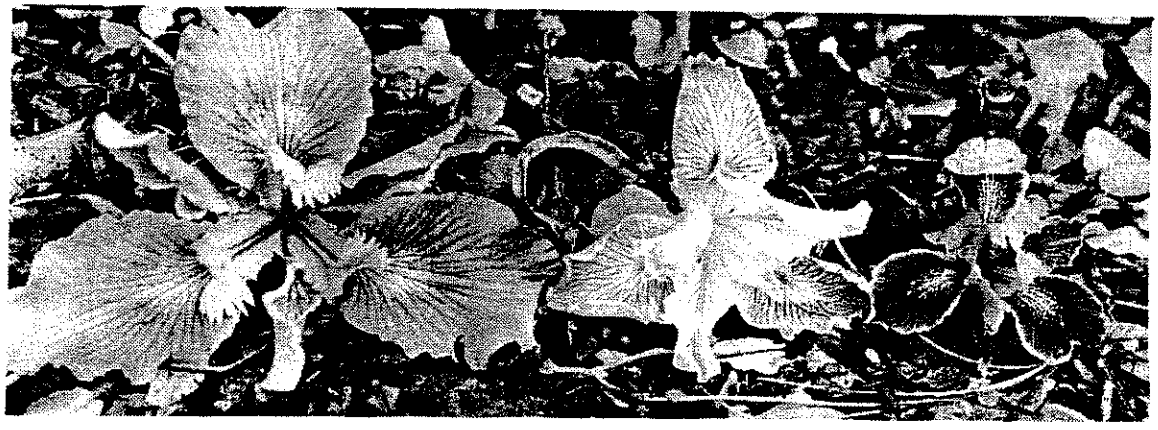
Book: "The size of the flower should be in proportion to the foliage and stem".

Wood: That is probably mostly correct, but I remember a little 8 or 10 inch innominata - douglasiana hybrid up in Collin's garden with flowers only yea big (holding his fingers to indicate a circle about the size of a half dollar). Now you would say that those flowers were way too small, but it was beautiful.

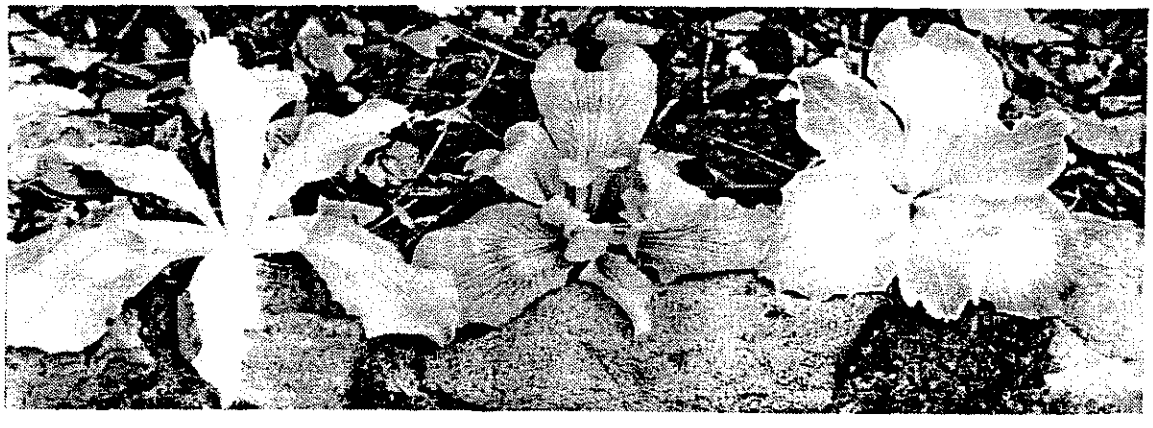
Book: "Twisted or distorted flowers are to be faulted".

Wood: I don't like them when the falls tuck under. Quite often you find standards that twist sideways, and whether that is good or not is your own personal opinion. I personally like flowers that are symmetrical or uniform.

Our goal is to get people to like irises, not to please the judges so we get a lot of awards. Now here (picking up a potted plant) is a little species cross, tenax by



Flower sizes from large to small



Flower shapes from skinny to fat

chrysophylla, and the flower certainly isn't up to our present standards, but what is wrong with it? Anybody find that objectionable?

Iris tenuissima. Too skinny?

Rigby: I don't think any one could find it objectionable but it certainly isn't a finished hybrid.

Lewis: I think it would be fine if you found it in nature, especially if you had been hiking around for a long time on a hot day without finding many flowers, and there it was!

Plant with open center

Someone: It doesn't have enough flowers to show off its color.

Someone: It's a species cross, and species never have many flowers.

Rigby: I'll disagree with you on that statement. But it is a species hybrid and species are so far removed from our modern hybrids that you can't compare the two. If you were to introduce that plant, they'd think you belonged in Napa (State hospital for the insane).

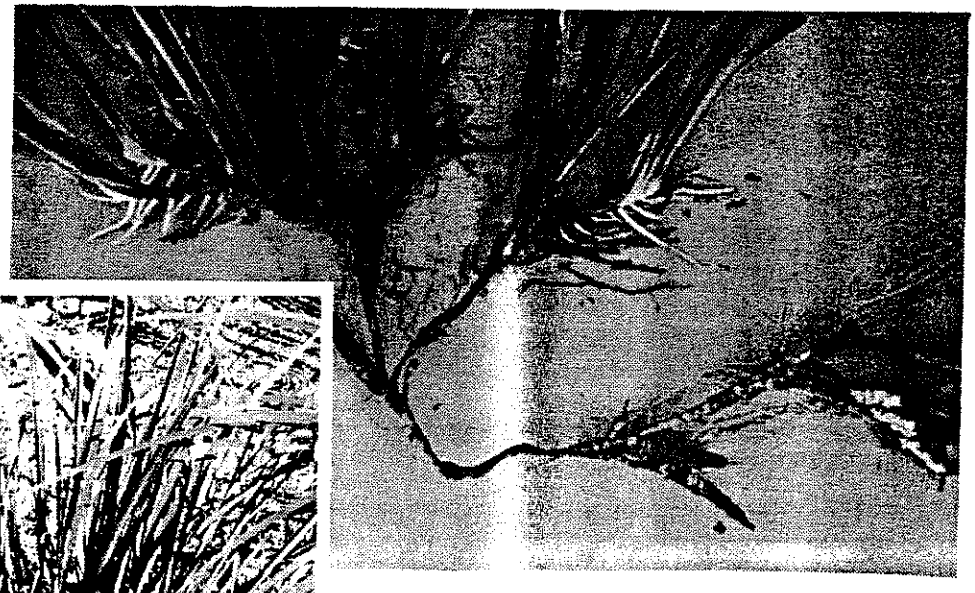
Wood: Is this any reason why, if you saw a good clump of it in a garden.....

Rigby: It hasn't much merit to me.

Wood: Well, I'll have to agree with you, - it wouldn't sell. The ones that sell are the ones like Joe Ghio is putting on the market. You can see (looking down into the Lawyer Garden) plants of all description down there in the garden, but I'll have to agree (holding up the potted species seedling) that this poor little thing doesn't have a chance. I'll agree that some of the seedlings down there in the garden are much.....

Someone: Improved?

Wood: Yes, in my opinion.



Plant of Aromas which grows outward like a Louisiana and develops an open center

Brown: Some of those modern ones go to extremes, and all the flowers look like is big blobs. The falls are so overlapping that you don't see the individual parts of the flower, and all you see is a big blob of color. To me they look messy.

Wood: Yes, but some people might like that and we can't say that they are wrong.

Here's a variety that is snaking. (flower stems horizontal and crooked) It's a variety that doesn't ordinarily do that.

Robbins: I find that all varieties snake more if they are planted in the shade.

Wood: Yes, but here's a nice plant of Sierra Dell right next to it, and it has nice upright foliage and flower stalks. This Sierra Dell is also a good example of green foliage color. There are plants with yellow foliage, green, and blue green. We probably each have a preference, and foliage color becomes one of the minor factors you consider whenever you are judging.

Someone: One thing we must remember, we are only looking at the flower for a short season of the year. All the rest of the time we are looking at the foliage. With some plants the foliage stays nice and green all the year, and others look pretty ratty.

Plant with horizontal bloom stalks

Wood: Another minor defect which we can't see here in the pots, is when a clump spreads out in all directions and leaves the center of the clump bare.

How much are we going to stand for foliage that is not upright?

Someone: Personal preference again.

Wood: Yes, if it's pleasing it's all right, same as with flower size and shape. Now let's get back to branching. (There was a long discussion on the merits of branching. Merits: longer bloom period, more flowers open at the same time. Faults: Flowers too close together, lowest flower down in the foliage, top-heavy stalk falls over.)

Ed comment: Most of our selections are branched, and I don't think we have to stake them any more than we do the unbranched stalks. In fact I don't think any of the faults mentioned above are more applicable to branched stalks than to unbranched.

Wood: Joe Ghio says that one of his breeding objectives is toward heavier foliage and good substance in the flower parts. Substance helps the flower survive more days and stand up in a wind. You can see it in some of the flowers here, as the wind gusts blow across them. Also the flowers should have substance enough to survive a light rain.

Wood: What about height?

Discussion: Breeders seem to be working at both ends of the scale, to get flowers and plants that are bigger and bigger, or to get flowers and plants that are smaller and smaller. Maybe someday we will have to divide them into sections like the dwarf and median bearded sections are separated from the tall.

Lewis: I'd like to get a true blue flower about the size of a silver dollar on a plant 4 to 6 inches tall. The rock-garden people would go crazy!

Plant with snaking bloom stalks

Someone: There's a huge increase in the use of native iris in landscaping, in highway landscaping, in park landscaping. As landscaping subjects, they can be great, but you have to have a plant that grows well and looks good all year.

There was a discussion later in the garden about fading. Although fading is prevalent in the PCI, it is generally thought of as a fault. There were several examples, however, especially in older, larger clumps, where the two-tone effect of flowers with various degrees of color seemed to enhance the over-all beauty of the clone.

THE 1992 EXPEDITION

Adele Lawyer

All three days of this year's Expedition were enjoyable to us, but each for different reasons. The first day, (called "an optional supplement" in our announcement in the Spring Almanac), turned out to be well attended, with 18 people enjoying the day along with Max Creasy, a Ranger at the Orleans Six Rivers National Forest Station.

Those of us who stayed overnight at Hoopa on Thursday enjoyed the accommodations. From our motel balcony we could see the Klamath River rushing by a few yards away, and we enjoyed visiting with the Hoopa hosts who found our mission in the area very entertaining.

On Friday morning we met at the Ranger Station and started out caravaning on Ishi Pishi Road. Our search for *Iris tenax* subs. *klamethensis* was disappointing at first. We spent a good deal of time on the first three stops piling out of our cars and taking turns photographing the few specimens we could locate on the bank along the road. A local couple driving by was attracted by the strange phenomenon of a crowd of people and cars all stopped along the road and clustered around some small object of interest. They stopped and asked us what it was all about. When they found it was the wild iris, the husband said, "You mean you are interested in <u>that</u> flower! I am mowing out a whole field of them on my property a piece down the road!" "You are!" was our astonished reaction; and we asked if we could stop and see them. We followed him, and it was true! He had mowed out about an acre of the grassy field within which the iris were comfortably snuggled, but there was about twice that much acreage yet to mow before the area was in shape for the wedding celebration to take place there in the near future. We found klamethensis in abundance. They were growing in the midst of the tall grass in the meadow, under the trees, and in a marshy seepage area on a hill! No waiting in line here, we spread out and took our time photographing the iris. And it was comforting to know that most of the mowed iris would be up and growing again by the following spring.

Although we had brought snacks of fruit, candy bars, and water, we were hungry for lunch by then. There were no restaurants or stores in the area, so Larry Moss and Max Creasy led us farther up hill to "soul food". The population density of *I. tenax* subs. *klamethensis* increased with the altitude as we progressed up the hill on GO Road. In many areas the beauty of the creamy flowers was enhanced by the brick-red background color of the soil on the road cuts.

Adele in a field of *I. tenax* sbsp *klamathensis* above Orleans

At one stop, Larry Moss pointed out that we were in the midst of a mile square area which contained 17 species of conifers, more different kinds of evergreen trees than have been identified within a comparable space anywhere in the world! The diversity was apparent, even to eyes without expertise in this field.

The climax was reached at Flint Valley where a trail descended alongside a gurgling brook to a small lake in a peaceful meadow studded with wildflowers, especially at its periphery. Here we found violets, phlox, trillium, wild rose, Lewisia, and shooting stars, among others. We hated to leave but after a few more hurried stops to photograph the plentiful iris,

mostly *I. tenax* subs. *klamathensis,* but also *I. tenuissima* and hybrids between the two, we had to proceed to Crescent City to greet other arrivals.

Group in the clearing on High Divide Road

A negative aspect of this trip was our shock at the type of bus which arrived to pick us up the next morning. It had no storage capacity overhead nor in its belly, no proper speaker system, and no toilet facilities! There was nothing we could do at that point. With some tape, Karen Moss positioned the speaker to make do. The box lunches and cameras flitted across the floor in tune to the road direction, and the toilet situation was not solved, but there is hope for future such emergencies.*

The day, itself was wonderful throughout. At Smith River we turned east on Rowdy Creek Road where we stopped at the first large group of *Iris innominata*, growing in rocky soil on a steep bank cut for the road. Bob Ward, never having seen them in their natural habitat before, couldn't believe that they could exist there on that rocky slope, - much less thrive!

We proceeded on to the High and Low Divide Roads and were overwhelmed to see hundreds of rhododendrons in full bloom, both *R. occidentale* and *macrophyllum.* As we emerged from the bus at the first stop, we were greeted by a multitude of flowers in addition to beautiful forms of lavender *I. innominata*, (or perhaps *I. thompsonii,* according to Carol Wilson who was present on our trip). *Vancouveria chrysantha,* (golden inside out flower), and a nice species of violet were among those which bordered a forest of rhododendrons perfuming the air. Larry Moss had previewed the area and, on the whole, chose stops where iris were particularly profuse. But, on one occasion, we stopped by a stream and seepage area which had encouraged the growth of orchids and darlingtonia, which fascinated even the bus driver. He was among those fearless souls who braved the steep, slippery bank to get a closer look or photograph them. One of the prime stops was a flat clearing, which must have been a parking area for heavy road-building equipment at one time. Here the iris were vigorous clumps, varying in color from white to red-violet. At the side of the road here a magnificent specimen of *Silene californica* attracted much attention.

We had lunch on a gentle slope where castillejas and allium were among the iris' companion plants, and then went on to see many more variations in habitats, and in flower color, form, and plant type of *Iris innominata.*

There were many color, size, and shape variants among the rhododendrons. Many were superior enough to warrant collecting cuttings for propagation. One of the most fascinating shrubs present on the High Divide Road, however, was a sinuous trailing juniper, each specimen

* Subsequent to the Expedition, one of our members gave me a book which should be required reading for such an eventuality. It is entitled, "How to S--- in the Woods. An environmentally sound approach to a lost art." by Kathleen Meyer. Published by Ten Speed Press, P.O. Box 7123, Berkeley, CA 94707. To prepare for any excursions into the wild, this should be your homework assignment. It is at once amusing and practical, and recommended for those of you who like to wander in wilderness or near-wilderness areas.

of which snaked along for several feet, hugging the ground. Also pressing flat against the ground were the handsome, dark green mats of *Ceanothus pumilus* with their red-brown seed capsules,

George Waters, like the juniper noted above, hugs the ground. This time for the sake of a better picture

On the way back to Crescent City we attempted to find a stand of iris hybrids east of Gasquet, only to find that this area, which we had explored on our first Expedition, was now a home construction site. Returning to Crescent City after a wonderful day, we had dinner together at a fish food restaurant.

We caravaned on our final day, which was less spectacular than planned because the bloom season along the coast was earlier than normal this year and there were few iris or spring flowers still in bloom. Larry Moss had pinpointed many sites to stop for views of area highlights. We saw native water lilies, a herd of elk, and at the approach to a spectacular fern grotto, we saw a few enormous clumps of douglasiana along the beach. We also visited the Moss garden, which was beautiful. We would have liked to have been there when the *Californicae* were blooming, but the Japanese iris, Matilija poppies, meconopsis, penstemons, and numerous other flowers, together with the pleasure of relaxing in these surroundings were compensation for that loss.

In past reviews of our Expedition I have neglected to describe a very positive portion of this and our other trips: our mutual pleasure in sharing the experience with others in our group. It doesn't seem possible, but instant friendships are formed. Our enthusiasm over viewing something beautiful is augmented in the company of those with like interests.

When we see something special, we have to call attention to it so that others can share the elation with us. We learn to know who is most likely to be interested in the balance between the position of a rock in relation to a flower clump, which person is particularly interested in an off-sized length of perianth tube, who is knowledgeable enough to identify a flower unknown to us, and which of us is interested in some other facet of the environment.

Kim Blaxland is an example of the latter category. She has accompanied us on the last two trips, and we all know of her interest in violets. When she finds a new species she photographs it and takes careful notes and measurements; and perhaps some day there will be a book summarizing her research. But whenever anyone sees a violet they call, "Kim, Kim, come see what I've found here!"

Ted Kipping is another who has been on all our trips. He is an outstanding photographer of plants, flowers, and their habitats, and his work is included in many publications. He is the one with whom we presume to share our vision of what we think would appeal to the eye of a camera.

But mostly, it is, "Hey, look at this!" Doesn't it have the darkest color in this group, the widest petals, the best foliage, and on and on, i.e. the soil type, the bug and butterfly identification, and the "What is this flower?"

Lewis and I enjoy being alone in each other's company while viewing plants in the wild better than any other vacation refreshment. And that remains a special experience. But the Expedition, where we are contained in, and spill out of, the same capsule (the bus) along with kindred souls, results in an exhilaration different from our private visitations.

The final attribute of this sort of trip which I feel is an advantage over, for instance, American Iris Society bus trips to see iris cultivars, is that there are no limits on the length of time allotted to each stop. In general, we stay at any given location long enough for everyone to exhaust their inspection of everything at the site before we move on. If we return to headquarters a little later than we had planned, we just pay a little more for the bus. We have enough schedules to meet at home.

COMMENTS ON THE EXPEDITION AND CHRONICLES OF POST EXPEDITION TRAVELS

Kim Blaxland, Radnor, PA

This year's trip lived up to all my expectations and more! I was welcomed by Californian irises blooming en masse in the grass alongside the runway at the Arcata airport, and again in a vase at the car rental desk. I knew I had come to the right place!

It was so exciting to meet again with such enthusiastic, friendly people with a common interest, and with the most helpful and interesting local experts, Max Creasy and Larry Moss, all very willing to share their knowledge - all wonderfully organized by Adele and Lewis.

I have so many memories: I was struck by the variation between flowers of different plants of *I. thompsonii*, by the profusion of *I. tenax* subs. *klamethensis* in such diverse locations as the middle of a stream and the hot, dry, red roadside dirt, and by a natural *I. bracteata* hybrid with beautiful lilac bracts which I saw west of Whiskey Creek. I was challenged by Carol Wilson's statistical evidence for the separation of *I. thompsonii* as a distinct species, and reconfirmed in my belief in the importance of continued SPCNI support of her work in this area. But far the most memorable was to be shown the secluded beauty of Flint Valley,- a place that was hard to leave.

Thanks to everyone for all the help and encouragement with my viola collecting.

J. V. Lawrence, Woodland, WA

I had a wonderful trip back home from the 1992 SPCNI Expedition, back up through *I. thompsonii* country to spend more time on photos and marking nice plants for seed collection, then north to Gold Beach and up the Rogue south bank. There were wonderful innominatas, - bright gold clumps showing just 22 miles from Gold Beach. From China Flat I drove west on 3353 to see if I could locate the tenax-innominata swarm mentioned by George Gessert in his opus on southern tenax limits. (Almanac, Spring 1987) He had placed it between Barklow Mountain and China Flat, and there it was, starting 6 miles in on 3353, and stretching 1 1/2 miles at least to Jones Creek. Some looked an awful lot like *I. thompsonii*.

I turned around there. Heading back south, I turned east on 3348 up the Coquille, - gorgeous! Here there were mostly smaller, paler innominata, then small chrysophylla. At Eden Valley I found SHEETS of tenax on logged-over land! Around Mt. Bolivar there was a tenax-chrysophylla swarm opposite the trailhead up the mountain; then mostly small chrysophylla. This is BLM land, just off the Siskiyou Forest maps. At 12 miles from the pavement's end, (which is just west of Eden Valley), the northern road (paved), splits off and goes down to the west fork of Cow Creek. The center road, (gravel) goes to Glendale, and the south, (also gravel), goes to Tucker Flat and Mariel. I took the northern fork. Lovely tenax were frequent on the upper part, and I found small chrysophylla on the west fork of Cow Creek. This split joins with the Cow Creek Loop in 15 miles, and is an easy way in to China Flat, only 44 miles from the loop road, and only 12 of these unpaved. It is much more interesting than the Powers-Roseburg road.

In mid-July, timing pod break by my plants at home, (Woodland, Washington), I made a two-day swing to collect seeds. Marked plants of *I. thompsonii* at High Divide and *I. innominata* at China Flat were just right; but tenax and chrysophylla were a little green. At Cow Creek, tall chrysophylla and innominata were mostly split and scarce, as was French Hill thompsonii. And all my carefully marked and anticipated bracteata (and bracteata-chrysophylla) plants had already split open and dropped their seed. Searching for hours, it seemed, in 100 degree heat, I salvaged a few forlorn seeds.

I did not make the swing over to the Klamath, assuming that *I. tenax* subsp. *klamathensis* would be collected by others. Next year for that and some nice *I. tennuissima* I marked. And next year THREE collecting trips!

Phyllis Gustafson, Central Point, OR

I was so pleased to be included in the Expedition this year. I thought I would soon know which iris was what, but instead found it a very complicated matter. As with other confusing genera it seems,

the more you study iris, the more confused you get.

I traveled home by way of Little Jones Creek Road and found iris in full bloom and most interesting. The road in, #17N05, leads 10 miles to Bear Basin. Doe Flat is in 15 miles, and I have gone there many times and then hiked to Devil's Punch Bowl to see hybrid Lewisias and other flowers. (It is the hardest hike I know of.)

The iris along Smith River and at the bottom of the road were cream to almost white. As I progressed up the hill they became yellow, and then at about five miles they became pinkish, and I thought the form changed to shorter, wider petals. At about six miles you come to the top of the grade where there is a logging helicopter site. All around the edge of it are iris of every color and form. I am not smart enough to tell you what is hybridized, or if it is just *Iris innominata*, just that it is interesting. They were at the peak of bloom and I took pictures all the way up so that I have a record of the changes (more or less). I did not record any data.

It was great getting to know the group and I hope to participate again.

Marge Edgren, Woodside, CA

On the way home Sunday we stopped at beautiful Fern Canyon, its vertical walls carpeted with masses of ferns. Following the trail through the surrounding woods, we came upon a damp meadow with 2 huge clones of iris, each perhaps 6 to 8 feet across. A final treat was finding little *Moneses uniflora* with its waxy petals on the forest floor as we followed the woodland trail back to our car.

Christine (Kim) Blaxland, Radnor, PA

It was quite lonely going off on my own on Sunday, but I did accomplish what I planned, - to find *Viola lauceolata* ssp. *occidentalis*, which I found at the O'Brien, Oregon, turnoff growing very happily in the swamp beside Whiskey Creek at the bridge. It's on the list of endangered species. The darlingtonias were amazing. The following day I drove east, then southeast from Orick past the redwood forests and into an area of small oak trees with wide open grass spaces between. Eventually I found what I was looking for, *Viola quercetorum*, another yellow flowered viola; but it had finished flowering which was disappointing.

I. bracteata at Whiskey Creek
Photo by Kim Blaxland

I had a very successful weekend (Friday through Sunday) with respect to the violets. I found 10 species in all. *Viola ocellata*, with heart-shaped leaves, was the first one. And then there was *I. cuneata*, with leaves more wedge shaped where we stopped for lunch on Saturday. Also, there were two separate subspecies of *I. lobata* in the High Divide area. I didn't realize until I got home and thoroughly examined my collection, that the specimens that I had collected on two different occasions, (the little white violets with two purple eyes on their cheeks), which I thought were different forms of one species, turned out to be two completely different species, obviously similar and related. This brings my total of species photographed and described to 52; but as there are about 500 in the world, I still have a way to go!

Incidentally, I spent the last two nights in a small hotel in Trinidad with a pretty garden and nice furnishings which I would recommend highly. It is The Trinidad Inn, (707) 677-3349.

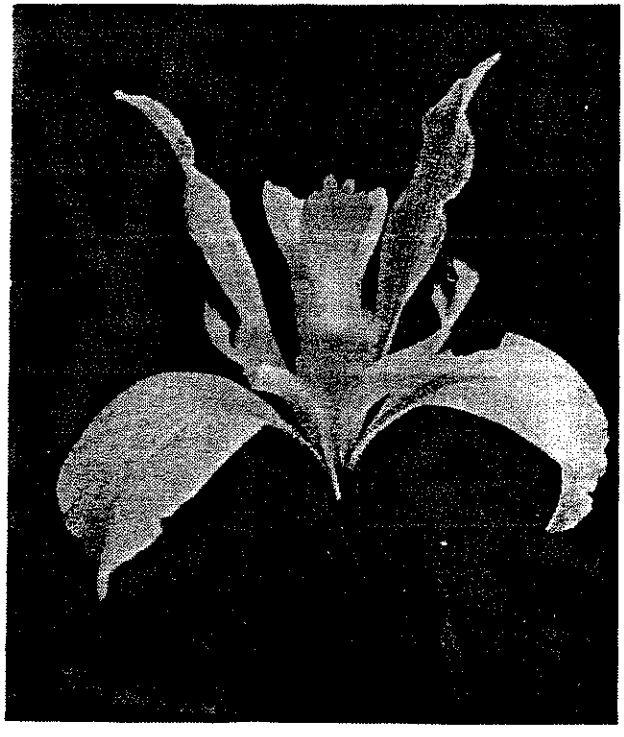
Bob Ward, Littlerock, AK

I have been accustomed to exploring for native iris; but in my part of the country it is *Iris tridentata* and other swamp plants in Mississippi and Alabama

where one is up to the knees in water, whereas there is nothing but bone dry locations in California. In the swamps one must contend with mosquitoes and baseball bat sized water snakes, and boat motors that might fail among waterways. In the hills of northern California one contends with dusty roads and bugs.

Janice and Bob Ward at Whiskey Creek

On the way back from the Expedition we drove to a magnificent spot where *Iris macrosiphon lutea* is growing in Lake County. It covers possibly 6 to 10 acres and a lot more, as we didn't examine both sides of the Harrington Flat Road in Lake County. There were several flower types with narrow to wide standards and pale to dark yellow colors.



Yellow *Iris macrosiphon* on Haringtion Flat Road

We took pictures of three intermediate colors, as there were some blue forms nearby.

There are hundreds of seedling populations from seeds which have dropped over the years. They seem to flow downhill and get caught in the grass under the large oaks. I counted up to 30 seedlings in several clumps. I am impressed as to how well these and all the native PCIs grow so well in such a dry environment! I dug up a clump of 20 young seedlings about 3 inches tall and they are now growing happily in my Arkansas garden.

ON IRIS THOMPSONII

George Waters, Berkeley, CA.

I am intrigued by Carol Wilson's investigation into features that could point to the existence, long denied, of *Iris thompsonii.* Lawrence and Randolph, in *Garden Irises* (1959), give some credence to *I. thompsonii*, but Lenz, in the same work, says that hybrids between *I. douglasiana* and *I. innominata* have been mistakenly called *I. thompsonii.* In *The World of Irises* (1978), Lenz, speaking of himself in the third person, explains the earlier confusion and refers to the hybrids as *I.* X *thompsonii.* The use of the "X" in the name, although explained as referring to "a group of hybrids rather than a species," is misleading, and when now used, the "X" confers legitimacy on the idea of a stable species-hybrid. But if such exists among the *Californicae*, Matthew, in *The Iris* (1989), ignores it entirely.

Those earlier plant explorers placed undue importance on flower color in identifying *Iris thompsonii.* Flower color is a notoriously variable character, too often resorted to by gardeners in identifying plants. They asked to be confounded. But Carol Wilson appears to have identified morphological features, such as tube length, that may indicate the existence of another species among the *Californicae.* I therefore eagerly await the outcome of Carol's studies hoping, I confess, for the reinstatement of *Iris thompsonii.* We need another species to hunt for and photograph, juggle with in our literature, and nurture in our gardens. We deserve it!

CHALLENGES TO BIG FREEZE ARTICLE IN SPRING 1992 ALMANAC
(A letter to the Editor)

Kenneth Hixzon, Eugene, Oregon

Lewis, your treatment of the "big freeze" of December 1990 has so upset me that I have decided to give you a piece of my mind - and as anyone who knows me will tell you, that won't leave me with much mind to spare.

First, the term "big freeze". In December 1990 our local weather station recorded a low of +5°F., with a wind velocity of 30 mph. In Zone 7, +5°F. is a low that can be expected once every 10 years. Furthermore, the low temperatures only persisted a couple of days. Compare that with December 1972, when the same weather station recorded -12°F., with nighttime lows below zero every night. If December 1990 is the "big freeze", then presumably December 1972 is the "huge freeze".

A low temperature of +5°F. is not unusual for Eugene, Oregon. What is unusual was the damage done by the December 1990 freeze. I lost several hundred plants - possibly more than a thousand, at least some of which had withstood previous +5°F. freezes. Most of the plants I lost were rhododendrons, not iris, but the information should still be relevant. For the record, the iris lost here included *Iris douglasiana* AGNES JAMES, MINI-MA, and DEEPENING SHADOWS, LA MADRONA, PACIFIC HIGH, PEANUT GALLERY, SIMPLY WILD, and VILLA BRANCIFORTE. I also lost a plant labeled CHIFFON DANCE, but it had bloomed light blue. *Iris tenax,* COLBURG CREST, didn't survive, but may have expired before the freeze. LONG SHOT may or may not have survived. There are leaves near where it was planted.

Survivors included the local native *Iris tenax,* CANYON SNOW, ESPERANTO, FOREIGN EXCHANGE, GARDEN DELIGHT, RED BLUFF, RIO DORADO, SAN GREGORIO, THREE CORNERED HAT, WESTERN QUEEN. These named varieties had all been planted two years before. Note that this is almost the reverse of Bill Ferrell's list, from about sixty miles away.

Seedlings included about 150 plants raised from Bayview seed just over a year before, and about 75 plants raised from seed from Laurie's Garden, which had been transplanted in late September, three month before the freeze.

About ten plants from the Bayview Garden seed showed damage in the form of burned leaftips. The damaged plants were large plants with broad, tall, glossy, evergreen leaves. For what it is worth, the observed damage to the seedlings from Bayview seed is, in my opinion, windburn, caused by a dry wind blowing across leaves while the ground is frozen and the plant is unable to takeup or transport moisture. As such, this is not so much a problem of hardiness as of proper location in the garden.

Having been transplanted so recently, I fully expected to lose the plants from Laurie's, but to my knowledge, none were hurt in any way. The plants from Laurie's tend to be smaller, and many are completely deciduous. There may not have been anything above ground to freeze or be burned.

I am unhappy about two things about the use of statistics. First, why try to prove something which I believe could have been observed. Use of primary data (observations) is usually regarded as preferable to the use of secondary data (statistics based on the primary data).

Use of derived data also masks real differences, and there were observable differences between this freeze and previous +5° freezes. Plants were killed outright which had survived two or three previous +5° freezes without damage. There were also observable differences in the effect of the freeze on various cultivars. Rather than try to prove the differences were meaningful, why not simply present the observed differences? Deepening Shadows was killed in 2 of 3 plants reported, Peanut Gallery: 2 untouched, 1 damaged, 1 killed. Statistics aren't needed to tell that an iris which is dead varies from one which is alive,-simple observation is sufficient.

Second, I'm having trouble following your logic, and/or disagree with the conclusion when you go from the coefficient of correlation to the conclusion that genetic make-up is a factor. I can't seem to understand how the conclusion is justified. The C of C doesn't really say anything about the data, or the real world. The C of C actually measures whether the

questions put to the data were precise enough to obtain meaningful answers without glossing over information. In this instance, a high degree of correlation would mean that several varieties appeared on both/all three lists. The statistician must then decide whether that meant that the results were random, or should the question be restated more exactly. Instead of "Was Deepening Shadows unaffected/damaged/killed?" the question might be, "Was Deepening Shadows visibly affected yes/no?" I don't want to deny that genetic make-up is one factor, I just don't understand why you believe that data indicates genetics instead of wind tunnels, frost pockets, poor drainage, the hole in the ozone layer, solar sunspot activity, or other variables.

Proving by statistics or otherwise that a dead iris is different from a live iris is not sufficient reason to assume that the difference is genetic. The mere fact that one plant, (DEEPENING SHADOWS), survived in one part of the garden, and died in another part of the same garden is the exception which disproves the assumption. The genetic constitution of the plant is probably one of the factors, but the C of C does nothing to isolate that variable, and variations in the observed results implies it is not the only one.

If genetic constitution is at most partly responsible, what other factors were there, and how did December 1990 differ from previous +5° F. freezes which did less damage? In my garden the plants which had been previously moved were unhurt, while the plants which had been down for two years, and were near a walkway where the soil was possibly compacted, were hurt most. Soil compaction is if anything, a negative factor here.

What else? In my opinion, two things: 1) a long mild fall with almost no frost until the temperature abruptly dropped to the fatal low. It has often been observed that plants not exposed to frost are less hardy than plants exposed to a mild freeze and "hardened up".

2) In Eugene, the temperature of +5° F. was accompanied by a wind of 30 mph. Adjusting for the wind chill factor gives an apparent temperature of about -10° F. Here in the maritime northwest, we almost never get cold weather accompanied by wind. In the more continental parts of the United States, temperature is unimportant--it's the apparent or wind chill temperature they watch.

Could these two different effects have resulted in the variation which was observed? Unquestionably it could have. Wind speed can vary radically in only a foot or two, and a dense shrub, large rock, slight rise in the ground, walls, buildings all can create a pocket of still air where the temperature is accurately reported by a thermometer, while the other side of the shrub etc. is radically different. In this garden, the temperature might have varied as much as 15 degrees, from +5 to -10° F. Hardiness appears to be an additive effect, with each addition of a positive effect making the plant more hardy, and the subtraction of a limiting factor making the plant more tender than it might be. Wind chill and inadequate hardening off are two factors which must be considered before there can be any real understanding of the freeze of December 1990. Statistical analysis of multiple unknown variables with a small sample (at most four reports per plant) is not going to give a very high degree of certainty.

Ed Comment: I moved to the bay area from Southern California in 1934, and have experienced what were to me three "big freezes". The first was at Berkeley in 1936 when the eucalyptus trees in the hills were frozen, and several water pipes at the University burst and formed beautiful ice fountains. The other two were here at our Oakland hills home where we have maintained an outdoor recording thermometer which is checked for accuracy at 32 degrees Fahrenheit. In December, 1972, the temperature dropped to 22 degrees, and in 1990 to 18 degrees. Other than that, we have experienced only 13 days below 32 degrees, and only three of those were cold enough to damage the leaves of the most tender Echeverias in our rock garden. In 1972 we lost 220 of the 527 species in that bed.

I'll have to admit that both of our "big freezes" would seem like mild winter nights to our members in Illinois and northeastern Canada, but to our citrus trees, our Fuchsias, and our 6-foot tall *Crassula portulaceas*, which melted to the ground it was a disaster..

The irony of all this is that editors often have a difficult time wording appropriate titles, and "Big Freeze" wasn't chosen with any of the above in mind. I just thought it would be a good title.

Kenneth has valid points about the use of statistics and I won't argue with him.

There are almost as many opinions about statistics as there are statisticians.

Kenneth's observations on the vagaries of freezes, and all the microclimatic influences are, of course, well taken and have been noted in the ALMANAC on many occasions. The study of genetic frost resistance in plants is difficult. We spent several years searching for frost resistance in garden peas, *Pisum sativum*, for Del Monte. Del Monte fieldmen had observed differences in varieties in the past, and although frost resistance would be lucrative to the Corporation and its growers, there wasn't enough consistency in the observations to start a breeding program. We planted replicated trials of 300 cultivars at Morgan, Utah, where spring freezes had occurred every year as long as the natives could remember. For three years there were no spring frosts at all. On the fourth year a satisfactory freeze occurred and gave some interesting results, but it was obvious that we needed more accuracy and reliability.

We built two walk-in refrigerators, both of which were especially engineered to follow a 24 hour period of fluctuating temperature to within 1/4 degree Fahrenheit. Unlike the usual off-on controls which turn on when the temperature gets too high, send in a blast of cold air, and turn off when the temperature gets cold enough, we designed controllers which let the refrigerating unit run all the time and varied the back pressure on the refrigerator coil to maintain the outcoming air at exactly the desired temperature all the time.

We would place containers of pea plants at some chosen stage of growth in the first of the two rooms, and for one week would maintain a desired fluctuating temperature, say from 50 degrees to 75 degrees, and a day length comparable to that of early spring. This was absolutely necessary, because, as Kenneth states, conditions prior to the freeze are as influential as the freeze itself.

Following this preconditioning, the peas were moved to the freeze room where the temperature started exactly where it had left off in the preconditioning room. Then the temperature was gradually dropped, following the pattern of a devastating freeze which had occurred at Toppenish, Washington, some years previously. After the temperature reached a desired low, it would gradually rise, again following a definite pattern, and the "morning lights" in the room would turn on at precisely the correct time.

With this precision, we were able to exactly duplicate results time after time, and this precision enabled us to prove genetic resistance of about 5 degrees Fahrenheit which could be transmitted to our standard pea varieties through a backcross breeding program . But it required a lot of specially designed equipment, and it wasn't simple!

MORE LETTERS TO THE EDITOR

Andrew D. Peat, Ganges, B. C., Canada

I grow approximately 50 clumps of PCIs, all from seed obtained from the Hardy Plant Society, (England). I would expect in the future to try my hand at some amateur hybridization. I am very interested in the species and subspecies as I have concerns about adaptability of many cultivars to the colder climate here. Our weather is similar to Seattle though a little colder.

I have known of and grown PCIs for three years now because of my general love of flowers but also because, as a "native" plant, it should survive our dry summers and fit into my plans for mass plantings and low maintenance.

In answer to your question on topics readers would like to see discussed: In addition to the Seed Exchange, you might give some thought to form a **PCI Pollen Bank** of cultivars and species. I am not a botanist and would not know the feasibility of such an idea. With some hundreds of cultivars a pollen exchange would be useful for members to expand their breeding programs (especially non-USA residents).

[Ed. comment] Andrew proposes a very interesting program. I think, however, that we may always be confronted with a fact of nature, that is that pollen does not store as well as seed. Kenneth Hixson claims that he has had pollen remain viable for a year, and Dr. Lee Lenz told us that he has kept pollen for as long as a year. Both emphasize, however, that fresh pollen is best.

We need a study on viability and preferred storage conditions before we try to establish a pollen bank. We need some exact information on percent viability of PCI pollen over a period of time. The methods have been developed. Are any of our members familiar enough with them to instigate a program and give us some facts?

In the mean time, I think most of us are willing to send fresh pollen, if available, of any cultivar growing in our garden to someone requesting it.

Jean Witt, Seattle, WA

I have just returned from visiting my daughter who farms in the foothills near Forest Grove, west of Portland, Oregon. While walking across the cut-over slopes where *Iris tenax* blooms in May, we found several scattered clumps in full bloom the end of March. Admittedly we're having an extra early spring following a mild winter, but 4-6 weeks difference in bloom date is considerable. Could it be that certain plants are genetically early blooming? They were surrounded by the May bloomers, not even budded. We will try to determine whether the early bloomers are consistent. They could be useful to extend bloom season in PCIs.

I've been enjoying the latest Almanac, [Fall '91}. Reading through, I was struck by the contrast between the freeze damaged PCIs and those that were in the fire. PCIs have developed in an area which has been subject to repeated burning in the past, and they are obviously geared to survive fire. They may even benefit from it, as burning probably destroys fungus spores and the ash adds a little fertilizer. Freezing, on the other hand, opens the plant tissues to whatever invaders are around, and our gardens harbor things with which they would not have to contend in the wild.

Last fall I gambled and was still transplanting PCIs the first of November. Because the winter was mild, I got away with it. Had the winter been as severe as the last two I would have lost things, even though I mulch heavily with pine needles. I do feel that the length of time a plant has been established is a factor in winter kill.

[Ed comment] Information obtained in our garden indicates a definite difference in bloom time of various cultivars. We have been recording the date of the first open bloom of all our cultivars and selections for the past 17 years, and have proved beyond doubt that real differences exist. I hesitate to mention statistics, but an analysis of variance of the bloom dates of several clones indicate less than one chance in a hundred that real genetic differences don't exist.

There were definite differences in years (or weather), that is, as you would expect, the bloom dates of all cultivars were earlier some years than others. (This was also statistically significant).

In the following table I have arranged the data for 5 cultivars, listed in order of their average bloom date from earliest to latest. The columns under "earliest" and "latest" are the earliest and latest dates that each cultivar started blooming in our garden during the last 17 years.

	Date of First Bloom		
Cultivar Name	Average	Earliest	Latest
Councilman	Feb 22	Feb 16	Mar 02
Susie Knapp	Mar 24	Mar 03	Apr 15
Ojai	Apr 12	Mar 27	Apr 22
Rio Del Mar	Apr 22	Mar 16	Apr 24
XP 50B	Apr 24	Apr 14	May 04

It appears that there are at least three, and probably more, genes involved.

Luella Danielson, Pleasure Iris Gardens, Chaparral, New Mexico

Yes, I grow the Pacific Coast iris here in the desert! I am located 9 miles northeast of El Paso, Texas and Anthony, New Mexico. We live out here without an official U. S. post office and that's why you can't find us on the maps.

I have about 20 Pacific Coast, 23 Japanese, 25 or more Siberians, 20 Spuria in addition to Arils. I have at least 200 pure aril seedlings, Henry's [Luella's late husband] Arilbreds, plus a few of mine. I have 193 rose bushes that I'm cutting back at this moment, and about 200 daffodils besides all the grass and weeds that keep me busy on the 2 acre property.

In answer to your question: No, I'm not routinely a member of all the AIS Societies, but the literature I have received from you people is interesting and besides I learned from it! My PCI seed that I threw in with the established plants are coming up all by themselves. So why bother planting them?

I also grow a few tall bearded, rebloomers, intermediate bearded, miniature tall bearded iris, and 8 water lilies plus odds and ends in the greenhouse. I am asked to give programs and Judges Schools on arils and arilbreds ever so often, then I have to leave here, and I would just love to go on one of your trips up in the hills and see the PCIs in the wild. but THIS IS MY LIFE.

Dora Sparrow, Christchurch, NZ

We had just the severest winter I can remember, the spokesman are saying it is the worst recorded in the last 20 years. Snow storms were severe, not right in the city, but on the hills. Forty miles out, cattle and sheep were buried for a week. The iris were frozen for weeks of course, so my strain will offer seed that should have frost resistance. One of my iris, IDRIS GRAPE, coffee coloured with a grape blaze and velvet substance, has about 6 stems of buds 6 inches high. It is a very early one.

Ellie Hubley, Yucaipa, CA

Five PCI entries from my Longview Iris Garden won first place ribbons at the Inland Iris Society's Show at Riverside this April. They were CLAREMONT BLUEBIRD, CLAREMONT BLUE JAY, ORCHID RESPITE, DEEPENING SHADOWS, and SOQUEL COVE. Blue ribbons were also won by Claremont Bluebird and Claremont Blue Jay at the Southern California Iris Society's show at Arcadia.

Kenneth Hixson, Eugene, OR

What would I like? - The one thing PCIs lack that I really miss is fragrance. They are, to quote one of my favorite authors, "Beautiful but dumb." Fragrance is very important to me, and I didn't grow PCIs for a long time, simply because I knew that almost all of them lack fragrance. Almost all. I think that Dr. Lenz commented that some forms of *I. macrosiphon* are fragrant, and Victor Cohen comments (page 23) "Also in Lake County I found a deep violet-blue form which was deliciously scented."

Second choice would be a reliable reblooming iris. In the woodland garden many rhododendrons and other things flower in the spring, competing with the iris. Very few flowers bloom in the late summer and fall except oriental lilies.

Pollination: In this garden, bumblebees seem to be the main pollinators of PCIs, although hornets are seen occasionally. However, bumblebees burrow down into the flower, while the hornets only put part of their face into the flower.

Labels: What kind of labels do people use to label their plants? Small plastic labels disappear after a year or so, wooden labels rot as fast. I have finally, and reluctantly started using lengths of plastic pipe. Usually white, 1 inch PVC pipe which costs about fifteen cents a foot, cut to 18 inches, the desired length for iris, then driven into the ground about 6 inches. These are relatively permanent, as long as the weedeater doesn't get near to them, but my lily beds look like a cemetery in winter with rows of white stakes. Marking names on the plastic has been interesting. Sharpie pens have been recommended repeatedly, but writing becomes illegible in as little as two months. Special Nursery marking pens have not been much better. Indelible laundry marking pens didn't write on the PVC very well. I now use grease pencils such as are used to mark butcher paper. I'd like something better. I've also tried using labeling tape, which is slow to type out, and the tape may peel off, especially if applied during cold weather.

Ed comment. I still think that the combination of "See-Fine" stakes from See-Fine Marker Co, Lewiston, Idaho, and "Evergreen" snap-on labels from Evergreen Garden Plant Labels, Cloverdale, California, make the finest labels available. The stakes come in 26-inch and 13-inch heights for tall bearded iris and tall plants. The latter are fine for PCI, and I have shortened some to 8 inches for the smaller PCIs. Evergreen Labels are imprinted with white letters on a green background, using the same materials used on California highway signs. They are designed to clip on the top plate of the See-Fine markers. Some of mine, now 20 years old, are as legible as when new.

Susan Lambiris, Raleigh, North Carolina

Now that the heat of "iris season" (not alas, of the summer) is past, I thought I would let you know how things are coming in this not-very-likely climate for PCI. We had a very wet spring, first hot (through March), then cool (the record coolest May in history, though fortunately no serious late frosts as long as you weren't a peach farmer). Rot of all sorts has been a real problem, even my bearded iris are suffering. Among my PCI, the named cultivars are either dead, thriving, or neither. The list of dead clones is too long to bother writing down. Two, BLACK EYE and IDYLWILD, lead the list of those thriving, and one, MUNRAS, can't make up its mind. Munras is doing to me this year what Soquel Cove did last, - lingering feebly with one or two small fans that might or might not be enough to keep it alive until fall. Unlike Soquel Cove, however, Munras should not mind our win-

ters, so I'm hoping its natural vigor will ultimately prevail. I have ordered another round of "vigorous" cultivars from Bayview Gardens, and a similar collection (many from Southern California breeders) from Portable Acres. I am sure that treatment with Subdue would solve most of my trouble, but I am reluctant to use it, mostly because my goal is to breed plants that ordinary North Carolina gardeners can grow without special skills or procedures. Black Eye and Idylwild are both doing so well that trying to grow named cultivars here **cannot** be a total waste of time.

As well as killing famous PCI, I have successfully started an assortment of seedlings from last year's seed exchange. The hybrid seed germinated much more readily than the species, (in fact the packet of 25 *I. douglasiana-purdyi* seed collected by Dick Richards, #91088, has yet to produce any seedlings), but the plants themselves have done equally well. These plants are in window-box sized containers (4 or 5 to a box) filled with a mixture of commercial topsoil and humus, with perlite added for drainage and Broadleaf P-4 to even out the moisture content. I have kept them fairly moist by watering them twice a week when there has been no rain; and despite the heat and humidity, I have lost only 3 plants to rot out of 39 planted! When the new cultivars arrive in the fall I shall plant them in the same way. They will need extra protection in the winter compared to those in the ground, but winter here is not the major problem for all but the most tender PCIs. (The only cultivar on which I have seen apparent frost damage was Soquel Cove.) I am also treating another group of seedlings with colchicine in the manner described by John White in the fall, 1991 issue of the *Almanac* in the hope of producing material from which I can breed fertile Calsibes. HALF MAGIC, the only Calsibe I currently grow, is the healthiest beardless iris in my garden, so I feel that Calsibes are a good choice for North Carolina. So far, the colchicine treatment seems to be working, but it is still too early to tell how many of the seedlings will survive.

MEMBERSHIP LIST

NEW MEMBERS

UNITED STATES

Adess, Nancy F.
P.O. Box 101. Inverness, CA 94937

Blandy, Mr. & Mrs. Glenn
260 Colwyn Terrace, West Chester, PA 19380

Blume, Barbara B.,
40 Inverrary Lane, Alamo, CA 94507

Boonin, Sara
101 Lombard, #111-E San Francisco, CA 94111

Byrne, Robert
1008 Wildcat Canyon Road, Berkeley, CA 94708

Ebert, Lucinda
12880 Welton Lane, Poway, CA 92064

Flaten, David L.
5201 17th Avenue South, Minneapolis, MN 55417

Froid, Mr. & Mrs. Frederick
#16 Sanchez Street, San Francisco, CA 94114

Globe, Wendy M.
8535 Nottingham Place, La Jolla, CA 92037

Gustafson, Phyllis
250 Maple Street, Central Point, OR 97502

Iris Society of Massachusetts,
566 Old Road to NAC, Concord, MA 01742

Koomanoff, Alek
1038 Bowdoin, San Francisco, CA 94134

Lauer, Mae
31700 Highway 20, Fort Bragg, CA 955437

Magazine, Ann & Virgil
4130 E. Lowe, Fresno, CA 93702

McIlwain, Lynn
626 N. Lyall Avenue, West Covina, CA 91790

Melf, Carolyn
122 Valley View Drive, Paradise, CA 95969

Monninger, Michael D.
4861 Brookhill Terrace, Riverside, CA 92509

Parsons, Liz
Box 477, Kenwood, CA 95452

Randall, Richard & Caryll
524 Windsor Gates Rd., Virginia Beach, VA 23452

Rice, Elizabeth
2306 Chapman Court, Santa Rosa, CA 95403

VanKeuren, Denise
17206 Valley Oak Drive, Sonora, CA 95370

Wakesberg, Arlene
176 Idora Avenue, San Francisco, CA 94127

Wasicki, Stan
Box 1542, Battleboro, VT 05301

Wenburg, Elizabeth
3221 Shyleen Street, Gig Harbor, WA 98335

FOREIGN

Peat, Andrew D.
Route 2, Samuel Cr., Box 5, Ganges, B. C. V0S 1E0, Canada

Trevithick, Mrs. J.
86A Grantham Road, Radcliffe-on-Trent, Nottingham England

Yu-Tang, Zhao
Department of Biology, Northeast Normal, Changchun, 130024, P. R. China

NEW ADDRESS

Brown, Bob & Jean
1850 Alice Street, #602, Oakland, CA 94612

Platte, Lluvia
1347 Dartmouth, NE, Albuquerque, NM 87106

1992–1993 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 Louis &Caroline Fry, 4 Renata Court, Novato, CA 94947.

Unless otherwise specified, all seeds are open-pollinated with only the pod parent known.

From the garden of Lewis and Adele Lawyer:
(All are O.P. and may be influenced by *I. munzii* pollen)

92001 Abell 1
92002 Abell 10
92003 Abell 11
92004 Abell 66-44-30
92005 Age of Chivalry
92006 Ami Royale
92007 Augie
92008 Banbury Gnome
92009 Califancy
92010 Candy Banner
92011 Foothill Banner
92012 Garden Delight
92013 Harland Hand
92014 *I. innominata alba*
92015 *I. innominata*
92016 In the Money
92017 Latin Blood
92018 Lemonade Springs
92019 Mendocino Banner
92020 Mixed garden hybrids
92021 Native Blush
92022 Pacific Dazzler
92023 Pacific Rim
92024 Roaring Camp
92025 San Gregorio
92026 Sugar Candy
92027 Sierra Dell
92028 Sierra Stars
92029 Sundance Eight
92030 Susie Knapp
92031 Tidy White
92032 Western Hero
92033 Wild Man
92034 Wild Time

Lawyer hybrids, mostly *Munzii* -derived

92035 XP1F (3/4 *munzii*, 1/4 *douglasiana*
92036 XP62B (dark blue)
92037 XP64BD
92038 XP69B (shorter)
92039 XP91H: Lawyer sdlg. X Lenz sdlg.
92040 XP108A/Abell 11 cross made for good blue
92041 XP120A: Sierra Dell X Claremont Blue Sky
92042 XP133A: Sierra Dell X Lawyer–Lenz sdlg.
92043 XP133B
92044 XP137A
92045 XP142: Sierra Dell X Lenz sdlg.
92046 XP142B
93047 XP143: Sierra Dell X Lenz sdlg.
92048 XP143B
92049 XP157A:Lawyer sdlg. X Lenz sdlg.
92050 XP164A: Lawyer sdlg. X Lenz sdlg.
92051 XP165A: Lawyer sdlg. X Claremont Bluejay
92052 XP167: Fairy Chimes X Lawyer *munzii* sdlg.
92053 XP170: Sierra Dell X Lawyer sdlg.
92054 XP175B: Sierra Dell X Abell 11
92055 XP177G: Foothill Banner X Lawyer *munzii* sdlg. Possible Valley Banner types.
92056 XP185A: Lawyer sdlg. X Lawyer sdlg.
92057 XP196: Lawyer sdlg. X Lenz sdlg.
92058 XP197: Lawyer sdlg. X Lawyer sdlg.
92059 XP202:Sierra Dell X XP143E
92060 XP203: Sierra Dell X XP143F
92061 XP203A
92063 XP204 Sierra Dell X XP143G
92064 XP209A Sierra Dell X Lawyer sdlg.
92065 XP210A —Good source of blue
92066 XP210C (see 92065)
92067 XP211D
92068 XP211E
92069 XP212A
92070 XP215 Lawyer sdlg. X Lawyer sdlg. (involves Lenz sdlg.)
92071 XP224B

Species seeds collected by Lewis and Adele Lawyer (92073–77 collected with Gene and Joanne Loop.

92072 *I. douglasiana* , OP, U.C. Botanical Garden: original sources Humboldt, Marin, San Francisco, Sonoma Cos.
92073 *I. hartwegii*, yellow, collected at Cow Creek, Stanislaus Natl. Forest, Tuolumne Co., CA
92074 *I. hartwegii*, yellow, collected at Herring Creek Road, Stanislaus N. F.
92075 *I. macrosiphon*, purple, Bottle Rock Road, Lake Co., CA
92076 *I. macrosiphon*, yellow, Central Harrington Flat Road, Lake Co., CA
92077 *I. macrosiphon*, yellow, various locations along Harrington Flat Road, SSE of Boggs Lake, Lake Co., CA; most packets marked with 8-12-inch flower stalks

Species seeds collected by J.V.Lawrence (includes plants seen on 1992 Trek)

92078 *I. bracteata*, O'Brien. Josephine Co., OR
92079 *I. chrysophylla*, taller forms, Cow Creek, Douglas Co. OR
92080 *I. innominata* marked at bloom time, darker veins and/or broad form, China Flat Road, Coos. Co., OR
92081 *I. innominata*, Cow Creek, Douglas Co., OR
92082 *I. tenax*, Eden Valley, 2300 ft., S. Coos. Co., OR
92083 *I tenax* X *I. chrysophylla* Mt. Bolivar, 3200 ft., Coos-Curry-Douglas Co. line, OR
92084 *I. thompsonii*, dwarf dark form, French Hill Rd., Del Norte Co., CA
92085 *I. thompsonii*, High Divide Rd., Del Norte Co., CA

Species from Shirley Lutz

92086 *I. tenax,* purple, grown in Longview, WA from seeds collected at Cape Perpetua, OR; hardy, rust resistant

92087 *I. tenax,* blue-violet to purple

Species collected by, and hybrids grown by, Dr. John Weiler

92088 *I. hartwegii,* lavender-violet, 1 mi. SE of Shaver Lake Village, 6500 ft., Fresno Co., CA

92089 Rincon, OP

92090 Weiler PCN seedlings, OP (from seedlings being considered for introduction)

92091 OP seeds from named clones of garden hybrids

From Colin Rigby

92092 Mixed garden hybrids

92093 Mini-Ma, OP

Species collected by, and hybrids grown by, Claude and Joanne Derr (includes plants seen on the 1991 Trek)

92094 *I. douglasiana* from the garden

92095 *I. innominata,* collected at Elk River

92096 *I. tenax* collected on Monument Peak, OR

92097 *I. tenax,* pink-lavender, from the garden

92098 *I. tenuis,* collected in Clackamas Co., OR

From Joan Trevithick

92099 B35-23 (C. Jenkins sdlg. of Western Queen X Night Messenger) OP

92100 Rhett's Memory OP

92101 PCN hybrids OP, Brummitt & Wise strain

92102 PCN hybrids OP, Brummitt & Hargreaves strain

From Rickie Campbell

92103 *I. tenax,* large violet, collected near Sutherlin, Douglas Co., OR

From Duncan Eader

92104 Amiguita OP

92105 Orchid Sprite OP

92106 Mixed seed from the Ralph Conrad garden

92107 Misc. good hybrids OP

92108 Asst. seed from named and unnamed cultivars, OP, and excess from crosses

Species collected by Bill and Jeanne Ferrell

92109 *I. chrysophylla,* Camas Summit, Hwy. 42, Douglas Co., OR

92110 *I. innominata,* China Flat Road, Siskiyou Natl. Forest, Coos Co., OR

92111 *I. innominata,* above Agness, Curry Co., OR

92112 *I. tenax,* Botkin Creek, Benton Co., OR

Species collected by Gene and Joanne Loop

92113 *I. macrosiphon,* probably purple, Bottle Rock Road, Lake Co., CA

92114 *I. macrosiphon,* purple, Kings Ridge Road, Sonoma Co., CA

Species collected by Bill Janssen and Diana Reeck

92115 *I. tenax,* collected on Silver Star Mtn., SW Washington, 3000 ft.

From Louis and Caroline Fry (hybrids are open-pollinated, species hand-pollinated)

92116 Mixed garden hybrids

92117 Brown shades

92118 Smaller hybrids

92119 Candy Banner

92120 Idylwild

92121 San Carlos

92122 Tunitas

92123 *I. douglasiana* var. *major,* Marin Co., CA

92124 *I. douglasiana* v. *mendocinensis,* Pt. Arena, CA

92125 *I. fernaldii,* Sonoma Co.

92126 *I. macrosiphon-douglasiana* natural hybrid (?) Marin Co., CA (collected)

92127 *I. macrosiphon,* Marin Co., CA (collected)

92128 *I. munzii,* Coffee Camp

92129 *I. tenax,* dusty pink

From countless sources

92130 Mixed garden hybrids and species, both collected and open-pollinated

A heartfelt "thank you" to all our donors—it wouldn't work without you. If you don't see it here, ask. It might have arrived too late to list.

Cultural directions

- Adele Lawyer—

In nature, Pacific Coast native iris (PCI) generally grow in a well-drained, gritty soil in lightly wooded areas. They thrive where the summers are long and dry, but tolerate rain and snow cover, and some frost, in other times of the year.

The most frequently recommended method for seed culture is as follows: Plant the seeds in a good, moist potting mix in the fall, rather than in the heat of the summer. The mix should be fast-draining with a pH of 6.5 to 7. Plant in pots or flats and cover and firm with about a quarter-inch of potting mix. Plant as many seeds as you can physically separate from each other when it is time to transplant them, (1/2 to 1-inch apart). Keep the soil moist until they germinate, which takes two months on the average.

Transplant the seedlings to the garden or into pots when they are 3 to 6 inches tall. This will generally be from March to May. If pots are your choice, use 6 to 8-inch pots for each seedling. When planted directly into the garden soil, plant them 6 inches apart in rows which are a foot apart. In that way you will have room to dig those you select when they bloom. They grow best in filtered shade or morning sun. They transplant well. Most hybrid seedlings will bloom the following spring. Some species take two years to bloom.

Please list a few acceptable substitutes, or give instructions, as several listings are in short supply. The absence of 92062 is an error in assembling the list; there is no listing by that number this year. Regrettably, after the *AIS Bulletin* gave its cover to *I. purdyi,* we have no seeds of this species this season.