



INVADING THE INVADERS

By Paul Heipel

Edgewood Park is the scene of many invasions, the invasions of exotic plants and animals. No one who visits Edgewood on a regular basis could fail to notice one of the worst of these invaders, yellow star-thistle (*Centaurea solstitialis*). Yellow star-thistle (YST) is invading the grasslands of Edgewood, replacing the native plants with a dense monoculture. But I would guess few visitors to Edgewood have noticed the insect invaders, three of which may turn the tide on YST.

For years I have been a member of the volunteers led by Ken Himes and Elly Hess who



False peacock fly. Photo by Gerry Johnson

have been fighting the invasion of invasive exotic weeds. My interest in observing nature continues during the weeding. Two years ago I first noticed insect damage on YST while weeding. The insect that did the damage has since been joined by two others species which this year became major players in the ecology of Edgewood and its weeds. These new invading

insects eat the developing seeds of YST. They are biocontrol agents that were introduced by man and have taken hold in California.

What is a biocontrol agent? Biocontrol is an attempt to return the natural population controls to the non-native plants. One of the reasons exotic plants can be such terrible weeds is that they left their predators back in their native countries. Without these drains on their resources, non-natives can put more of their energy into growth and seed production. They evolved with all of their predators so that when the plant's life comes to an end, on the average only one of the seeds it produced will live to produce a new plant. That is a stable population. With no natural enemies, YST and other non-natives produce many seeds and many of those seeds survive, causing a rapid increase in populations that is only slowed by the competition from the many weeds that try to live in the crowded conditions.

How are biocontrol agents chosen? The selection process is a difficult one since the agent once released can never be removed again. The trick is to select specialists, species that only eat one species (the target species) or a group of closely related (often other weedy) species. A candidate

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A CLOSER LOOK AT INDIAN WARRIOR

By Bob Young

This is the twelfth of a series of articles describing the flowers pictured in our wildflower brochure. —ed.



Indian Warrior, (scientific name *Pedicularis densiflora*), is shown in the brochure “Common Native Wildflowers of Edgewood” published jointly by the Santa Clara Valley Chapter of the California Native Plant Society and Friends of Edgewood Natural Preserve. The scientific name was given in 1838. The genus name, *Pedicularis*, means lice in Latin. It was supposed that, if livestock ate the plant, lice would appear on the animals.

Indian Warrior is in the Scrophulariaceae Family of plants. The plants in this family were reputed to cure scrofula, an enlargement of glands in the neck. The Scrophulariaceae family has two common names: the Figwort Family, and the Snapdragon Family. In the home garden, this family is represented by the Snapdragon and the Foxglove, among others. On Edgewood, bellardia, Indian paint brush, owl’s clover, Chinese houses, sticky monkey flower, bee plant, and Indian Warrior are some of the representatives of this family.

In the early part of the twentieth century, two

authors described Indian Warrior as follows:

(From *The Wild Flowers of California* by Mary Elizabeth Parsons, first published in 1907.)

They often stand in little companies in openings among the trees, and the rays of the afternoon sun slanting in upon them brighten and vivify them into a rich, warm claret-color. The leaves, finely dissected, like certain fern-fronds, are often of a bronze tone, which harmonizes finely with the flowers.

To the casual observer, this flower resembles the Indian paint-brush. In reality, it belongs to a closely allied genus. But in this [the Indian Warrior] blossom the bracts do not constitute the brilliant part of the inflorescence, and the calyx, instead of being the showy, sheathing envelope it is in the paint-brush, is quite small and inconspicuous.

(From *Field Book of Western Wild Flowers* by Margaret Armstrong, Copyright 1915)

A robust and very decorative plant, with rich coloring. The stout, purplish stems are slightly hairy, from nine inches to nearly two feet tall, and spring from a graceful cluster of large leaves, which are crisp in texture and smooth or slightly downy, rich green and often tinged with bronze. The flowers are an inch or more long, with purplish, hairy calyxes and crimson corollas, and form a very handsome though rather coarse-looking cluster, mixed with purplish bracts, and finely shaded in color, from the carmine buds at the top to the wine-color of the faded flowers at the base.

In the new Jepson Manual, Indian Warrior is described as a “Perennial green root parasite,” and is classified as very difficult to grow in the home garden.

Indian Warrior can be found from southern Oregon to all of western California, and into the Cascades of northern California, the Sierra

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LYNNE FRITZ "RETIRES" AND RECEIVES BEST FRIEND AWARD

By Kathy Korbholz



On August 3rd Friends of Edgewood said goodbye to long-time Edgewood supporter Lynne Fritz. Lynne "retired" from County staff to take a position with East Bay

MUD. She will be working in their northeastern reservoirs area at Comanche Lake.

At a Parks and Recreation Division picnic in her honor, and later at the Parks and Recreation Commission meeting, Lynne's twenty-year career from young intern to Superintendent was recounted. For many of the positions held during her career, Lynne was the first woman in County history to hold the office. During both events she was feted with many compliments and gifts thanking her for her many accomplishments.

The Friends took the opportunity to present Lynne with this year's Best Friend award before her County colleagues. Lynne has agreed to join our annual meeting on October 22, to receive the award again. `

INCREASED RANGER COVERAGE



Thanks to staff reassignments made by Mary Burns, Director of the San Mateo County Parks and Recreation Division, Edgewood Rangers will no longer

have to staff Bicycle Sunday on Cañada Road. They will now spend their Sunday in the park. `

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Nevada foothills, and the Tehachapi Mountain area. They grow on wooded hillsides and in deep shade. In San Mateo County, they are much more common on the eastern slopes of the Santa Cruz Mountains than on the western slopes. They bloom from early February to April on Edgewood. `

RANGER RIC'S ROUNDUP

By Ricardo Trejo

It seems like yesterday that we were talking about the coming New Year. Many events have taken place at Edgewood as well as in our park system. This year we were surprised to learn that Lynne Fritz, Park Superintendent, accepted a new career position with East Bay MUD as a Naturalist. *We will all miss her.*

In the latter part of June we started the second year mowing for yellow star-thistle. We encountered many Murphy's Law conflicts as we tried to juggle schedules and equipment. Even with these conflicts, we managed to mow last year's mow sites and add new sites. A quick overview of the mowing results looks very promising in controlling YST.

A couple of items related to training, on August 27th, we held a second Trail Patrol training session for four of our new trail patrol members. On September 16th, some of the trail patrol members will have a joint exercise with the Sheriff's Rescue unit in a search training scenario in Edgewood. As Fall is approaching the park staff is going to begin winterizing the park.

I hope to see many of the Edgewood volunteers at the BBQ on October 22nd. `

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is tested in order to determine whether it will remain on the target species or could skip to an agricultural species. Native plant species are considered but testing is limited since there are so many species that exist in an ecosystem and the restraints on movement of the biocontrol agent are unknown. The risks to the ecosystem are real but must be weighed against the certainty of the destructive power of the non-native invasive weed already destroying the ecosystem.

I will relate the story of the unfolding invasion of biocontrol agents as I observed it during the

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ADOPT-A-HIGHWAY UPDATE

By Ken Seydel

Saturday, August 5th had perfect weather for clean-up—not too hot (especially for August) and very little wind. A good sized crew of 10 Freeway Warriors showed up for the task at hand: Bob Archibald, Kate Conners, Frank Figoni, Katherine Greene, Dianne Hunt, Bill and Kathy Korbholz, Margaret Marshall, Susan Russell, and Ken Seydel. It was fortunate that we had so much help—as our section of the freeway had recently been mowed! This means that each Styrofoam cup becomes ten pieces to pick up, and each grocery bag becomes thirty pieces.

I could hardly believe all the carnage on the freeway: various body parts strewn along the roadside, many so small that they were not even identifiable. There must have been over 200 different pieces of 20 or 30 different individuals. The mower had run over a porno magazine!

Not much of interest was found this time as everything was in pieces. A jack rabbit jawbone, a snakeskin (empty), and one corner of a counterfeit \$5 bill. On a previous outing, Margaret Marshall found a driver's license and credit card. When she got home she called the owner (in Los Angeles!) and made arrangements to return them. He had put them on top of his car after shopping at Robert's Market.

Adopt-A-Highway volunteers have been invited to participate in California Clean-Up Day on Saturday September 16th. Last year 94,000 pounds of trash was removed from 2,200 miles of roadway from San Diego to Crescent City. That is enough trash to fill 200 large dump trucks. Those participating in California Clean-Up Day will actually be part of a large effort, International Coastal Clean-Up day. This day encourages trash removal from the world's oceans, parks, roadways, and coast lines.

This year California Clean-Up Day is sponsored by the Brita Corp. Anyone participating will receive a coupon for a free "Fill and Go" water bottle or \$10 off on other Brita products.

Additional volunteers are always welcome to join the fun—typically on the first Saturday of the even months. If you have an interest please contact Ken Seydel. We will see that you are safety-trained and equipped with your very own Picker, hardhat, goggles, gloves, and bright orange vest.

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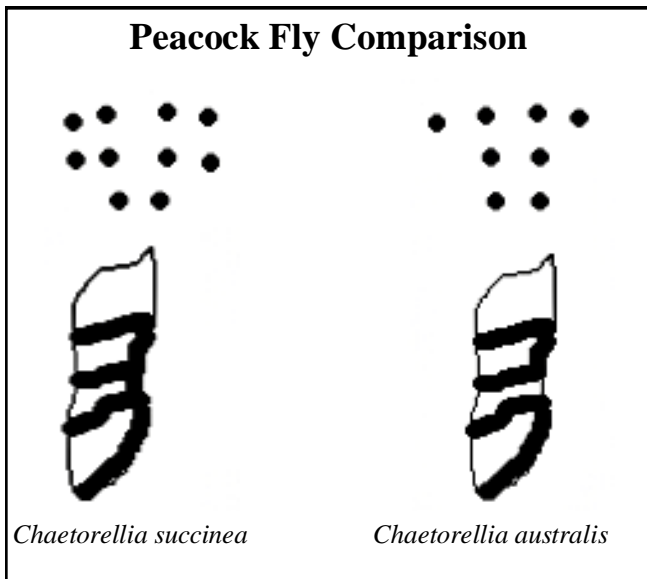


removal of YST. All of these species arrived on their own; the nearest known release site was Filoli, a mile or so to the west.

As stated earlier, the first indication I found of insect damage on YST was made in 1998 on Hill 1, the southeast end of the central ridge. YST was advancing from the ridge into the serpentine grasslands where a number of rare plants grow. A line was drawn as part of the weed management plan to stop the advance of the YST along the last crest of the ridge. The YST plants southeast of that line were to be extirpated. While pulling YST near the top of the ridge, I noticed some of the seed heads bent to the side.

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A closer inspection found that the bottom of the seed head was eaten away; no seeds were left in the capsule. Although plenty of the damaged seed heads were found, I found no insects. An investigation of possible insects that would cause this damage led me to the yellow star-thistle bud weevil, *Bangaaternus orientalis*. I have since found and confirmed the existence of this beetle in Edgewood. Inspections of other YST colonies in Edgewood that year found no other locations for this beetle or any other damage to YST seed heads.

The next year, 1999, I was anticipating finding more of the bud weevils spreading about the park. This I did not find; the bud weevil remained confined to Hill 1 in the same area as before. Soon after the start of the YST control season, I noted a number of different weevils on the YST in the triangle along the path that goes under I-280. These weevils were yellow star-thistle hairy weevils, *Eustenopus villosus*. I soon found that they were also to be found in Edgewood along the west side closest to I-280. This species began to show up at Mow Site 1 by the end of the season. Also spotted at the end of the season near Mow Site 1 was a single fly that I suspected was a peacock fly but did not catch to confirm it. The year ended with three species seen but little damage noted.

This year the biocontrol came on in force. I first spotted damage to YST in the Caltrans Park and Ride where YST flowers early. It was not a single fly this time, but many flies. I was able to identify them as the false peacock fly*, *Chaetorellia succinea*. This species was mistakenly released with the peacock fly, *C. australis*, an approved biocontrol. *C. succinea* is very similar to *C. australis*; the only differences are the spots on the back of the flies and a slight difference in the pattern on the wings. *C. succinea* can live on YST alone; *C. australis* needs cornflowers, a close relative of YST that is not found in Edgewood, for one of its generations to reproduce.

As the flowering of YST began in Edgewood, it was obvious that *C. succinea* and *E. villosus* had increased their number dramatically. Both species were to be found throughout Edgewood on all YST colonies. *C. succinea* had spread far beyond Edgewood to every YST colony I looked at in the South Bay area. As the season progressed, the damage done became obvious. Infested heads could be distinguished by their loss of a circular pattern to the flower heads. When a normal flower head is observed from above, it is a circular inflorescence. Infested heads have a flattened side. Some infested heads showed discolored phyllaries, some oozed sap, and some flower heads browned and the stem died back below the flower head. Inside these infested heads the larvae of the biocontrol species were eating the developing achenes. In some areas more than ninety percent of the flower heads were damaged and



False peacock fly (left) with "true" peacock fly

most of those produced no seed.

The damage continues into mid-August. YST is blooming later than normal

possibly in

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WEEDING SCHEDULE

The year 2000 affords all of our great volunteers lots of opportunities to come out to Edgewood and help with weeding. This season we will offer weeding activities at the following times:

- Tue/Wed afternoons: 5:30 p.m. to dark
- Fri mornings: 8:30 a.m. to noon
- Sat mornings: 9:00 a.m. to noon.

In addition to our returning veterans, we hope many of the folks who volunteered for Earth Day 2000 will join us again to help us fight the never-ending problem of invading non-native plants.

Special Incentive for Newcomers

This season we are staging weeding events every Saturday morning from 9 a.m. to noon. Everyone who is not a member of the Friends of Edgewood who comes to one of these Saturday events will be given a free 1-year membership.

What to Bring

Water and gloves are essential, and sunscreen is recommended. You should wear a long-sleeved shirt and long pants.

Where to Meet

The meeting locations are indicated on the calendar to the right.

- WK—West kiosk (junction of Edgewood and Serpentine Loop Trails, near I-280 overpass)
- ER—Edgewood Rd. west of I-280 overpass
- PR—Park & Ride lot at I-280 and Edgewood Rd.
- TBD—Call Ken Himes for the specific location

If you arrive at the meeting location late, you may be able to find the weeding party by checking the map at either the meeting location or the closest entrance to Edgewood.

If you would like more information about weed management efforts at Edgewood, call Ken Himes.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
	27	28	29 WK	30 WK	31	1 ER	2 PR
September	3	4	5 WK	6 WK	7	8 TBD	9 PR
	10	11	12 WK	13 WK	14	15 TBD	16 PR
	17	18	19 WK	20 WK	21	22 TBD	23 PR
	24	25	26 WK	27 WK	28	29 TBD	30 PR
October	1	2	3 WK	4 WK	5	6 TBD	7
	8	9	10 WK	11 WK	12	13 TBD	14
	15	16	17 WK	18 WK	19	20 TBD	21
	22	23	24 WK	25 WK	26	27 TBD	28

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response to the heavy damage to its seed heads. In many areas little seed has been produced and the plants look bad. It is yet to be seen how much seed can be produced by the late flowering since *C. succinea* is still active. It is also to be seen how this reduction in seed production affects the stands of existing YST. Next year should see a bumper crop of flies and beetles looking for flower heads to infest, perhaps on a decreased number of plants. I can only hope that with these biocontrol agents in place, the weeders will be able to push YST back faster and further with the goal of one day eliminating it as a major problem in Edgewood.

*A peacock fly is any fly in the fruit fly family Tephritidae with a patterned wing and a habit of displaying these wings like a peacock during courtship or fighting. Both *C. australis* and *C. succinea* display this behavior and are therefore peacock flies. The word “false” is attached to the common name to distinguish them from each other.

VOLUNTEER OPPORTUNITY, OUTREACH TO SCHOOLS

Carol Hankermeyer needs volunteers to help with the Schools Outreach Program. If you would like to lead children's field trips at Edgewood or be on a committee to design curriculum for field trip preparation, please contact her or e-mail.

INTERPRETIVE CENTER DISCUSSION

By Bill Korbholz

On August 17th, Sam Herzberg, Senior Planner with Parks and Recreation, hosted a stakeholder's meeting to brainstorm ideas for an Interpretive Center at Edgewood. A lively discussion produced many promising ideas relating to location, purpose, scoping, etc.

We will be sharing further exciting information with Friends at the October General Meeting.

LAST CHANCE TO ENROLL IN 2000-2001 DOCENT TRAINING

By Dianne Hunt

Those interested in enrolling in the 2000-2001 Docent Training Program should come to our first class on Wednesday evening, October 11th at 7:00 p.m. Each participant will receive a Docent Resource Manual which answers many of the frequently asked questions about Edgewood. The cost of the training program is \$20 to cover the production costs of the program.



For more information and location, please call Dianne Hunt, Docent Coordinator, or e-mail her.

MEMBERSHIP DUES

New or renewing members may clip and complete this section to pay **tax-deductible** annual membership dues. Please send your check payable to **Friends of Edgewood Natural Preserve** to the return address on the back of this panel. Renewing members can determine their membership expiration date by checking the four-digit code to the right of their name on their mailing label. For example, if the code is 06/2000, membership runs through June 2000.

Questions, call Bob Young.

- \$15 Basic Membership (includes newsletter)
- \$25 Family Membership (newsletter)
- \$7 Student/Retired Membership (newsletter)
- \$50 Supporting Membership (newsletter, *Edgewood Checklist of Plants*, and Edgewood photo greeting cards (boxed set))
- \$100 Benefactor Membership (newsletter, *Checklist*, greeting cards, and 28-minute video *Saving Edgewood Park*)
- \$250 Patron Membership (newsletter, *Edgewood Checklist of Plants*, greeting cards, video, and 16x20 photo-poster)
- I am enclosing a gift of _____.
- Please send _____ copies of the 28-minute video *Saving Edgewood Park* at \$15 each.
- Please send _____ copies of the *Edgewood Checklist of Plants* at \$3 each.

I would like to participate in the following:

- Docent program
- Trail patrol
- Publications
- Weed management
- School outreach
- Habitat restoration

Name

Address

City State Zip

Home Telephone Work Telephone



UPCOMING EVENTS

o *Tuesdays, Wednesdays, Fridays and Saturdays through the summer, **WEED REMOVAL AT EDGEWOOD.*** Bring water, gloves, sunscreen, and your enthusiasm. See page 6 for meeting times and places.

o *Saturday September 16th, **ADOPT-A-HIGHWAY CLEANUP DAY.*** This day only, as part of California Clean Up Day, participants will receive a coupon for a free “Fill and Go” water from the Brita Corp. Meet at the Park & Ride at 8:30 a.m. Call Ken Seydel for more information or to arrange for safety training.

o *Saturday September 16th, **SEARCH AND RESCUE TRAINING.*** Join exercise with the

Trail Patrol and Sheriff’s Rescue Unit. Please contact Ricardo Trejo at the Ranger’s Office or Frank Figoni, Trail Patrol Coordinator.

o *Wednesday October 11th, **DOCENT TRAINING BEGINS.*** For more information, please call Dianne Hunt, Docent Coordinator, or e-mail her

o *Sunday, October 22nd, **GENERAL MEETING AND MEMBERS APPRECIATION BBQ.*** Join the celebration of this year’s accomplishments and elect next year’s Board of Directors. All members are welcome and encouraged to bring prospective Friends to the Day Camp from 2 to 5 p.m.

The Edgewood Explorer is published four times yearly by the Friends of Edgewood Natural Preserve, a nonprofit organization dedicated to keeping Edgewood Park and Natural Preserve a place for all to enjoy the natural beauty and habitat. The newsletter is produced by Bill and Kathy Korbholz with assistance from Laverne Rabinowitz and contributions from many Friends. For more information about the Friends of Edgewood, visit our web site at www.friendsofedgeswood.org, mail us at PO Box 3422, Redwood City, CA 94064-3422, call or fax, or email info@friendsofedgeswood.org.

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**~ Save the Date ~
 October 22, 2 to 5 p.m.
 General Meeting and
 Members Appreciation
 BBQ**