

THE CHAPARRALIAN

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The Chaparralian is the quarterly journal of the California Chaparral Institute, a non-profit organization that is dedicated to the preservation of native shrubland ecosystems and promoting an appreciation for the natural environment through science and education. To join the Institute and receive The Chaparralian, please fill out and mail in the slip below or join on our website. We welcome unsolicited submissions to The Chaparralian. Please send to rwh@californiachaparral.org or via post to the address below. You can find us on the web at www.californiachaparral.org

Editor and Publisher.....Richard W. Halsey

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Cover photograph: Cooper's hawk (*Accipiter cooperii*) mentioned in this issue's story, "We're Outta Here."

All photos by Richard W. Halsey unless indicated otherwise.

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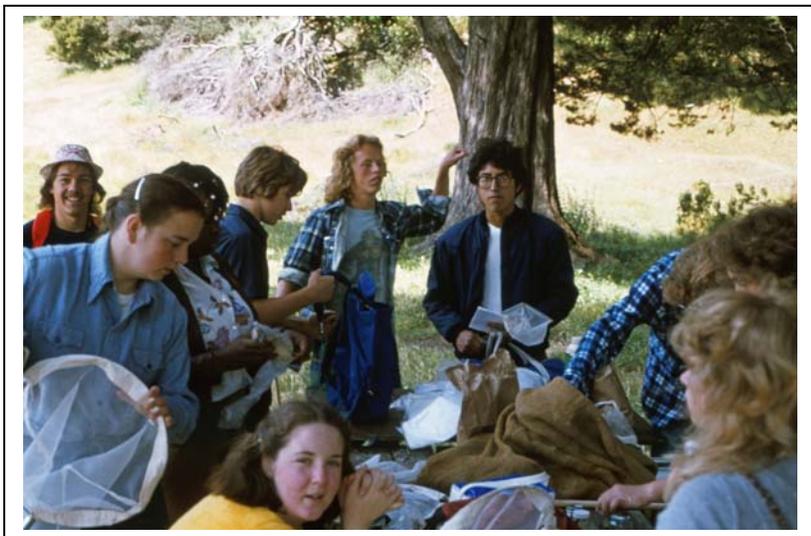
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NASCENT THOUGHTS

I discovered the chaparral in 1979, although I didn't know it. That was the first time I journeyed into nature with kids, high school kids, during my first year of student teaching. We organized a field trip to Briones Regional Park in the hills behind Martinez, California. There actually wasn't much chaparral there, mostly hills covered with grass. The place suffered from the ghost of over-grazing past (I didn't know that at the time either). However, in some of the canyons and near clusters of oaks, characteristic chaparral shrubs maintained their presence: mountain mahogany, *Ceanothus cuneatus*, and bush poppy, to name a few. Little did I know they would all eventually become good friends.

After taking a position to teach biology in San Diego, it wasn't long before I was dragging my students outside. Our first adventures were modest at first. During the 1987-88 school year we walked the grounds listening to birds and examining the cultivated plants. By the end of the year, the wilds of the canyon below the school had pulled us in, providing us needed opportunities to escape the confines of the classroom. The freedom of the canyon and the discoveries we found there made me realize I needed to eliminate the confines completely. By



Briones Regional Park, 1981. Hogan High School biology students.

the end of the following year, the canyon *was* our classroom.

My limited botanical knowledge became immediately apparent when the birds failed to show up during one of our walks and my students started asking me about the native flora. I needed to learn the plants. Fortunately, Bill Howell came to the rescue. Bill had been one of the school's counselors, but had decided office life wasn't for him and returned to the classroom to teach biology in the room down the hall from mine. His knowledge of native plants was phenomenal. I asked him to bring me up to speed on the subject. As our friendship grew, Bill shared his knowledge of native plants as I passed along my enthusiasm for nature photography.

Chaparral was still an abstraction to me at this point and Bill and I used to continually argue over what exactly it was. Did it include white sage or was it only defined by woody shrubs? Did it exist on coastal mesas or was it restricted to higher elevations? Where did chaparral end and California sage scrub begin? We eventually discovered nature abhors lines and definitions.

In time, I was able to teach my students what chaparral was in context of the bigger picture. Chaparral represented not only a remarkable ecosystem in itself, but provided critical habitat in many others, from oak woodlands to conifer forests. It defined California like none other. Helping my students understand this was my first challenge. Providing the same to the public and government agencies has proven to be much more difficult. It's a challenge that inspired the creation of the California Chaparral Institute.

Jim Hart, our favorite iconoclast, returns in this issue with his own story about recognizing the chaparral's importance in the article, "We're Outta Here."

Happy New Year!

Riparian Dragons in the Chaparral

By Bill Howell

Not all of the chaparral is semi-arid shrubland. Within the elfin forest are little ponds and streams. These wet areas are called riparian zones and dragons patrol their shores looking for ladies to address or mosquitoes in distress — which ever they see first. These dragonflies are often seen in the chaparral seeking prey or a new wet spot. Ancestral Odonata (their Order name) with wingspans nearly a yard wide flew above primordial ponds 300 million years ago. They can't breathe fire, but their strong little mandibles can pinch you if you're careless.

Even though all four wings beat independently (unusual in the insect world) they are masters of swamp flight. With six legs held like baskets, and wings three inches wide, they scarf up small flying insects on the wing. Their table manners are interesting as they slam dunk their prey, but it is dragonfly vision that is extraordinary. Hunting most actively at dawn or dusk, these pond shore mini-monsters are all eyes. Their huge orbs cover the entire head and they hold the world record of 30,000 facets on one compound eye. A honeybee, for example, has only 5000 subunits per eye. Because dragonfly eyes are so big, their tiny antennae are obscure and nearly useless.

Their mating behavior is curious. The male dragonfly places sperm squeezed from his body's last segment into a special chamber on



Mexican amberwing, *Perithemis intensa*, on a California buckwheat flower. All photos by Bill Howell.



Big eyes and a food basket. The adult dragonfly is adapted to scooping up other flying insects with its extraordinary vision and the forward clustering of its 6 legs. Green darner, *Anax junius*.

the underside of his abdomen. With claspers on the end of his tail, he grabs the female behind her neck. As the two consenting adults fly united, she reaches up with the tip of her abdomen to the pouch near his “chest” and collects recently deposited sperm.

Appropriately, this mating posture gives the couple a valentine silhouette. As they flutter off across the pond or stream she fertilizes her own eggs, and dips them into the water with her tail.

The eggs hatch into aquatic larvae (nymphs) who practice a peculiar locomotion technique of squeezing water jets from the rectum. Also located in the lower colon are the gills, which may explain their bad attitude. The older nymphs, several inches long, have a spring loaded, pincered, lower lip, one third the body length, with which they mercilessly catch young pollywogs and small fish. After a year or two and a final molt, they emerge from the pond as adults, breathe air, dry, fly, and scoop in mosquitoes.

Except for see-through wings, their colors are dragon-like — orange-red, green-blue, amber or turquoise. Their names are scary too — “meadowhawk,” “devil’s darning needle,” “snake doctor,” and “horse stinger.” Maybe you’d rather study the dragon’s delicate cousin, the damselfly, with names like, “ruby-spot,” “bluet,” and “dancer.” Be on the lookout for dragons or damsels on your strolls through the chaparral.



Male grasps female dragonfly behind her neck during courtship.



Above: Spring loaded lower lip of a dragonfly nymph. Below: Dragonfly nymph casings left behind after the adult emerges. All photos by Bill Howell.



Poetry of a Kindred Spirit

Nancy Jordan

Nectaring

Since they came into being
Human eyes and hearts
Have delighted in the humming bird.

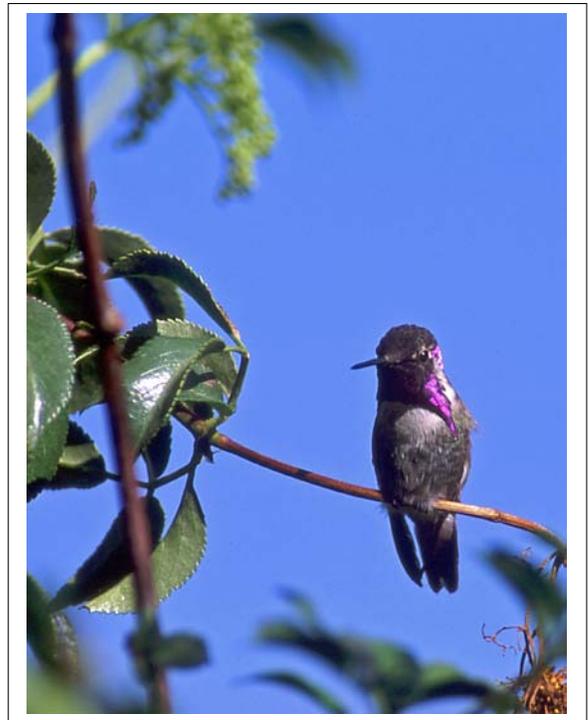
Maybe it is because they whirl in place
(Like swimmers treading water)
Enabling their beaks to reach the nectar.

All of us find it extraordinary
That life pulses so vibrantly
In such tiny creatures.

Today she's watching two of them
From her study window
And can detect no tension.

Is that Nature's greatest gift to us?
No fussing, no fretting, no worrying,
But simply getting on with it?

Could there be anything more valuable,
As we drown in all our doing,
Than being reminded of nectaring.



Outrun by Flowers

In the dim dawn
Sternly straight
Sky silhouetted
Pointed petals
Each to each
Clearly waiting
Allow nothing in.

By noon
Total transformation!
Each flower now on tiptoe
Reaching to the sun
Petals flung
Wide, wide, wide,
Eager, enthusiastic energy
Felt on every side
Experienced
As a shining.



And all
From the heat
And the light
Of the sun
Awakening
The innate talents
Of earth-ensconced seeds.

Could not we,
Following their example,
Reach out and up?
Frequent
The realm of spirit?
Awaken
Our innate talents?
And become
What was intended
Even before creation?

We're Outta Here

By Richard W. Halsey

Fluorescent lights hummed overhead. The door to the hallway was closed. The other door, the only one leading outside, was propped open with a large chunk of granite, allowing sunlight to enter the windowless classroom. A bundle of crisp, golden sycamore leaves tumbled in, blown across the shiny, linoleum floor by a warm, Santa Ana wind. The morning November air was filled with static electricity. Clothing adhered like a second skin.

Pausing for a brief moment during his lecture on photosynthesis, Jim Hart moved his tongue across his lower lip, carefully tending several small splits, the results of a week's worth of dry air.

"When the Z particle, which we will henceforth refer to as Mr. Z, slaps around Misty the water molecule," Hart said as he continually jabbed at the chalkboard with his meter stick, "her disembodied electrons are stolen by Photo System II and electrified by photon torpedoes from the sun."

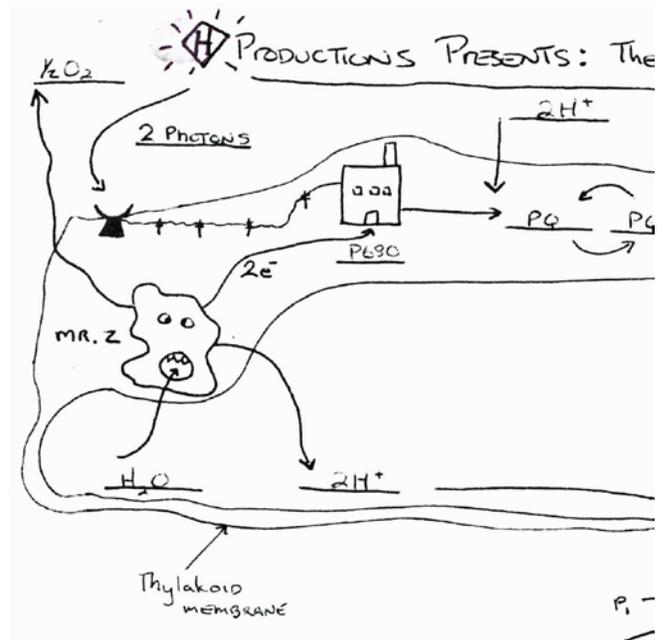
Hart stopped again to remove an ice cube from his water glass. "Misty is savagely torn apart," he shouted while heaving the ice cube across the room and watching it shatter against the wooden cabinets, "to provide the raw materials for what runs the process that nearly all life on earth depends upon, including you!"

Smack! Hart slammed his meter stick on the student's desk in front of him.

"Dude! You're crazy! What you'd do that for?"

Hart leaned over and placed his hands on either side of the student's desk. With a menacing smile he replied in deep Orsonwellian tones, "To alert you to the gravity of the situation... and make sure you're able to appreciate the most remarkable story on earth!"

It was Hart's way of keeping the class awake, attentive, engaged. He did it to keep himself awake, attentive, engaged.



Hart stopped for a moment to let the class recover. Students laughed and flicked bits of ice off their desks at each other. The sycamore leaves were still spinning around in the back of the room like dogs chasing their tails; spent, photosynthetic machines discarded to protect what moisture was left in the trees from which they grew. Sounds of love-sick mockingbirds ricocheted off an outside patio wall and entered the classroom, bouncing around like loose ping-pong balls. Nature was invading the confined space, intent upon delivering its own version of the truth. Hart took notice.

His silent focus caused several of his students to turn around and find what he was staring at. A new gust of wind spun a few more leaves inside, appearing as hands gesturing to follow. Hart looked around the room, up at the lights, and then back at the leaves. After mumbling something to himself, he blurted, "We're outta here!"

The class was unsure. "Everyone up!

Leave your books and follow me. We're gonna take a walk."

Most of the students remained still.

"The outdoors awaits! Anyone want to stay here and do a few worksheets?"

Several students immediately grabbed their book packs while others moved quickly toward the door, empty handed.

"Guys, leave your packs. You won't need them."

Within a few minutes the entire class was out of the room and walking down the artificially lit hallway of the science building. Only a narrow row of small, rectangular windows running along the left side of the end of the hallway door hinted to the life outside. The concrete structure was designed for energy efficiency.

As the group moved along, periodic eruptions of laughter filled the hallway as several students peered into classrooms with their doors open. "O'Malley, get out of there!" Hart warned one of his wayward students.

Tommy O'Malley was a tall, dark-haired, lanky, 15-year-old young man with a toxic overload of energy. His broad smile and boisterous sense of humor was infectious, which was one of the reasons Hart enjoyed having him in class. It wasn't a quality many other teachers appreciated, but Hart operated with a different set of rules. He respected confidence and intelligence, especially if it challenged his own way of thinking. On the front of his desk was a bumper sticker: Question Authority.

Emerging through the double steel doors, the harsh realities of natural sunlight caused everyone to wince.

"Where we going Mr. Hart?"

"Life. I figure we'll find some down in the canyon. I've always wanted to go there. Today is as good as any."

A few rumblings were heard at the back of the line as the thirty-three high school teenagers followed Hart in a haphazard line like a troop of disorientated ducklings. He looked back at the line and shouted, "O.K., find a

partner, hold hands and form a double line!"

The boys immediately moved away from each other.

"Come on, we don't want anyone getting lost or attacked by giant spiders," Hart said with a smile.

"No way! We're in high school, not first grade."

Hart walked back and forth forcing two lines to form, attaching hands, and cajoling students to let go of their inhibitions. It was the kind of challenge his students had become accustomed. Several partners started skipping.

They crossed the school parking lot and negotiated a dirt path between a few eucalyptus trees along the rim of the canyon. Below them was a grassy slope leading to the canyon's bottom which was lined with willows, sycamores, and a variety of large shrubs.

Two girls were still holding hands.

Ending each word on a higher note than it started, Hart said, "O.K., Tiffany and Amy get an extra point for following directions."

A chorus of 'that's not fair' and groans of disapproval drowned out whatever sounds nature was offering at the time. Hart ignored it all and moved his class forward, descending the grassy slope while projecting an image of self-confidence and prior planning. There was no plan. There was no trail. They figured it out as they went along.

"Hey Mr. Hart, what's this?" Tommy asked as he dangled a tan, gourd-like object the size of a tennis ball over a girl's head.

"Get away!" she screamed while flapping both hands above her.

The botanical discovery was covered with spines and partially split open, revealing several hollow chambers. "I picked it off that dead vine over there," Tommy added.

"Mike. Jim. Stop!" Hart shouted to a couple boys who had managed to move far ahead of the line. They stopped. For a while. "Anyone know what that thing is? Hold it up higher, Tommy."



"I throw 'em at my brother when they're still green," a boy said. "Man, do they hurt."

"Looks like those gladiator things they used to swing around," another said.

Hart didn't know a lot about plants. He was a bird and insect guy. But it was obvious the thing was a seedpod of some sort. From what, he didn't know. "Hang on to it, Tommy. We'll ID it in class."



Wild cucumber (*Marah macrocarpus*).

The descent into the canyon was steep at times, but everyone seemed to be handling it well except for three girls at the back of the line. Their arms were flailing while trying to negotiate around the rocks and uneven ground. Hart ignored their complaints. In the distance, birds filled shrubbery with chatter. A soft breeze moved through the shrubs. The school campus, the parking lot, the bells - all disappeared.

Hart heard a faint drumming in the distance. He stopped suddenly, giving the students an excuse to bump into each other like a crashing line of cars. Shouts and laughter erupted. "Shh!" Hart held up his hand. "Stop. Listen everyone. It's a Woodpecker! Maybe we'll see it."

The three girls in the back finally caught up with the group and began giggling for reasons known only to them. They were barefoot with shoes in hand.

"Come on you guys, pay attention," Hart whispered loudly. The girls looked at each other and giggled again.

The woodpecker left his perch and flew across the canyon, alternating between wing flaps and gliding dips.

"Hey! There he goes. Watch him now. See the way he flies? Flap, flap, glide. Flap, flap, glide." Hart copied the technique by flapping his hands up and down in front of him.

"Mr. Hart, are there any rattlesnakes down here?"

"Don't worry about it," Hart replied while staring off into the distance, following the woodpecker's flight path. "They're more afraid of you than you are of them anyway. Trust me." Hart stepped on a large cobble, dislodging it from its resting place, causing him to stumble. A few kids laughed.

"Hey, don't we need permission slips to come down here?"

"No, it's O.K.," Hart answered back as he recovered from his stumble. "Permission slips... permission slips..." he whispered to himself.

As the class reached the canyon's bottom, the trail they had been following

disappeared. Large shrubs sprinkled with sap-covered berries blocked their path. Hart hesitated, but only for a brief moment. Forward momentum was crucial. Uncertain leadership could be quickly sensed, exploited.

"Hey, Mr. Hart, I hear water!" Tommy said.

"Yeah, me too," another added.

Pushing aside branches, Hart led his class into a little gully. Everyone's mood suddenly changed as they discovered the tiny stream tumbling over stones and roots. Several boys began throwing rocks.

"Alright, knock it off!" Hart shouted.

"Oh man, look at my pants!" The sticky sap from the berries had collected on the boy's white trousers creating a rich variety of stains.

"Ever been sued Mr. Hart?"

"Not yet."

"Crawdads!" shouted a boy.

Several students began huddling around as the boy attempted to grab the red, lobster-like creature from the water. Water striders skated madly across the surface of the stream to escape from the excitement.

Suddenly, out of the corner of his eye, Hart saw movement. "Quick, look! It's flying right by us," he shouted.

Several students ducked.

A small hawk, disturbed by all the commotion, dropped from its roost in a nearby willow and sailed over the group within arm's length. It was close enough to see its red eyes. The hawk continued down the streambed, maneuvering between branches and trees like a fighter jet, fanning out its wings at the last moment to make a perfect landing on a distant perch.

"Cooper's hawk," Hart whispered as if questioning himself. "Yeah! That's what it was, a Cooper's Hawk!"

"That was so cool," one of the barefoot girls said.

"When are we going back up?" asked the boy with the dirt-stained, white pants.



Immature Cooper's hawk.

"We're going to be late for lunch, Mr. Hart," complained another.

"I've got a watch, folks. We've got plenty of time."

"Look at my clothes," a student grumbled as she passed Hart. "They're a mess. I hate this!"

"Aw, come on, it's good for you," Hart replied with a cynical grin.

Hart walked the class a bit further to emphasize that he was still in control, then turned the group around to march back out of the canyon. He fell behind while keeping his eyes focused on the ground until a round, quarter-sized object caught his attention. It was gray, like the soil, but outlined with a thin ridge. He stopped and reached down to touch it.

"Hey you guys, come back. Check this out!" he shouted. Half the class was already out of earshot. The campus was back in view. There was no stopping them now. The other half paused. Several students started to walk back down, but then changed their minds.

Hart reached into his pocket and pulled out a small knife. Inserting it carefully under one of the object's edges, a little silken hatch revealed itself, exposing the opening to a narrow, dark tunnel.

"Hellooo in there."



"Mr. Hart." It was Tommy. He had been hanging back at the stream. "I think the bell rang. We otta' head back."

Hart looked up. "Where's the class?"

"Looks like most of them already made it back up to the parking lot."

Hart glanced at his watch and grunted.

"Look at this Tommy, a trapdoor spider nest. I wonder if anyone's home." After peering into the tunnel a bit longer, he let go of the little hatch. It slapped shut with a soft pop. "Alright, let's go."

The two climbed up the narrow trail, stopping near the top for a final look back. From

their vantage point, they could see the small canyon widen out after passing a large peninsula composed of thousands of rounded cobbles, all cemented together like a giant pile of stale, golden jelly beans.

Neither said anything to each other as they made their final push to the top. Only the sounds of lizards scampering on dry leaves and grasshoppers clicking wings together broke the silence. In the distance a series of short whistles bounced off the hillsides, each note slightly shortened from the previous one until reaching a rapid conclusion.

"Wrentit," Hart said with his breathless voice.

"What?"

"The bird. It's called a wrentit, a tiny little thing with a powerful set of lungs; first to sing in the morning, last to sing at dusk. It's the voice of the chaparral."

"Wrentit?"

"It's an old English term. Means small bird. Wrentits, bushtits, titmice. Tits."

"The tit family," Tommy said grinning, while looking over at Hart. "We gonna come down here again Mr. Hart?"

"Absolutely."

"Yes!"



UNFOLDINGS

We watched everything: animals, birds, plants, insects, weather, sunlight, stars, fossils, people, hundreds of things. We watched the animals first. We sat in the swamps, in the woods, near lakes, by streams, along the river banks, any place an animal might live. And we waited. And waited. When we were lucky, we saw something special. When we didn't, we saw something else.

-Joe Brown

What I hear, I forget.
What I see, I remember.
What I do, I know.

-Chinese proverb



I am glad I shall never be young without wild country to be young in. Of what avail are forty freedoms without a blank spot on the map?

- Aldo Leopold.

And the world cannot be discovered by a journey of miles, no matter how long, but only by a spiritual journey, a journey of one inch, very arduous and humbling and joyful, by which we arrive at the ground at our feet, and learn to be at home.

-Wendell Berry

I'd rather wake up in the middle of nowhere than in any city on earth.

- Steve McQueen

When you've finished washing and dressing each morning, you must tend your planet.

-The Little Prince, Antoine de Saint-Exupéry

We cannot segregate the human heart from the environment outside us and say that once one of these is reformed everything will be improved. Man is organic with the world. His inner life moulds the environment and is itself also deeply affected by it.

-Shoghi Effendi

In the last analysis, our job as teachers is to make ourselves dispensable. We cannot give the student an education, but we can help him find out how to get one - assuming he wants it.

- William Saltonstall