

a Fecundity in Springtime

This digital image, captured by my country neighbor during a recent hike, was messaged wirelessly, via satellite-internet uplink. In the parlance of our moment, within these post-drought-afflicted and wildfire-prone locations, that action in time could be easily have been filed away under 'instagram and selfie while traversing the rural/forested interface'.

In earlier days, not so long ago, we referred to this as a simple 'walk in the woods' - our commune with nature. A photograph would need developing and we'd await a print or slide while remembering the day.

And although this image had been transmitted instantly, my friend had necessarily and obviously slowed, and crouched, and remained still enough to absorb an exquisite moment in display of natural wonder.



photo by Adrian Card

This little beauty, a Calypso Orchid - *Cypripedium bulbosum* L. / *Calypso bulbosa*(L.) Oakes; *In China Bu Dai Lan* - was sprouting in the forest duff. We see them every year within an ever narrowing window of opportunity in portions of Northern California, in April and May. They are about .5" - 1.5" tall, are wild and nearly invisible, and last about a week.

As described by Ronald Coleman in his 2002 book, 'The Wild Orchids of Arizona and New Mexico', **Calypso** is a genus of orchids containing one species, **Calypso bulbosa**, known as the **calypso orchid**, **fairy slipper** or **Venus's slipper**. It is a perennial member of the orchid family found in undisturbed northern and montane forests. The genus *Calypso* takes its name from the Greek signifying concealment, as they tend to favor sheltered areas on conifer forest floors. The specific epithet, *bulbosa*, refers to the bulb-like corms.



Their bright pink blooms can be a pleasant sporadic sight on hiking trails from late March onwards, though in the more northerly parts of their range they do not bloom until May and June. The plants live no more than five years.

This species' range is circumpolar, and includes California, the Rocky Mountain states and most of the most northerly states of the United States; most of Canada; Scandinavia much of European and Asiatic Russia; China, Mongolia, Korea and Japan.

Although the calypso orchid's distribution is wide, it is very susceptible to disturbance, and is therefore classified as threatened or endangered in several U. S. states and in Sweden and Finland. It does not transplant well owing to its

mycorrhizal dependence on specific soil fungi. *Coleman*

"The corms have been used as a food source by North American native peoples. The Thompson River Indians of British Columbia used it as a treatment for mild epilepsy."

Source: Daniel E. Moerman, Native American ethnobotany (1998).

Other, anecdotal sources have referred to 'traditional' uses of the flower:

The small white corms were eaten raw by Aboriginal people; they taste buttery.

The orchids flower early in the season, and are designed to attract Queen Bumble bees to pollinate them. As the bee enters the lip of the plant it picks up pollen which it transfers to the next flower. The orchids contain no nectar, and the young naive queens quickly learn this, but each year produces another batch of juvenile queen bees, thus ensuring that pollination takes place every year. The root and flowers can be chewed for the relief of epilepsy.

Research is being carried out on the plant due to its ability to provide the drug Cypripedium. This drug is used as a nervine and antispasmodic. In fact this is widely used in Chinese medicine.

Sources: Discovery YUKON; First-Nature; The Spruce

Glory and optimism in nature

The fecundity during Spring gets everyone going. I remember a campout near this same area about 20 years ago, prior to our construction of the house. Linda and I were in tent on an oak mound. In the morning mist, through the flap opening, we spied a rather hefty wild boar sow with about 8 little piggies emerging from the foxglove cluster in the meadow opposite our property.

Birds were chirping, and later in the day the ground was just clicking and buzzing with things alive and healthfully horny.

Every particular in nature, a leaf, a drop, a crystal, a moment of time is related to the whole, and partakes of the perfection of the whole.

-Ralph Waldo Emerson



Images: Monarch Butterfly; Tobamovirus; Western Honey Bee; Cowpea mosaic virus

That same month, with the ground still wet from the seasonal rains, we made our way to the old hippie cabin down in the Redwood Grove, where we'd spend the night. The evening included a small campfire, and we were enveloped by tall and dark *Sequoia Sempevirens* - *Coast Redwoods* - while keeping our feet warm near the flames. The ground was teeming with action that evening, and I figured that the bugs were not quite done with their romp as I could feel them brushing against my boots. After lighting the gas lantern, I realized that these weren't bugs or beetles, but mice, hundreds of them, each no larger than an acorn or small walnut, fully agitated and darting around in chaotic frenzy.

We had not been invited to their birthday party, yet seasonal excitement was in play.

The cabin is an assemblage of salvaged, multi-paned wooden windows and doors, two small rooms, about 225 square feet overall, sitting upon a varied foundation improvised from irregularly sized, bucked and chopped, redwood and Douglas-fir log slices.

The former landowner and builder of this hideaway was a Vietnam vet who had sequestered himself in the grove, in the early 1970's, penning a novel entitled 'Famous Potatoes'. When I tracked him down about ten years ago, via e-mail, he recalled a fondness for the place and mentioned that "I conceived my first kid in a Volkswagen Bus outside that cabin".

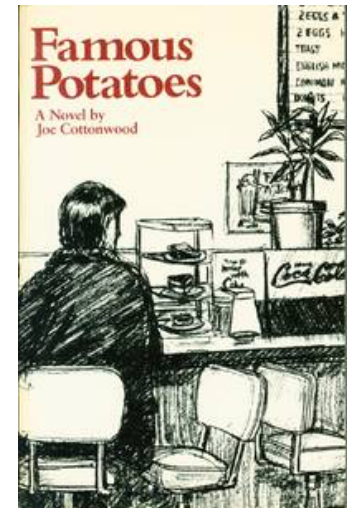
"I wrote this novel forty years ago as a cockeyed love letter to the USA. I was a young man without children. Now I am a grandfather. A few of the passages, as I review them now, could make a grandfather blush. Nevertheless I have resisted the impulse to censor any youthful excess. I've also let stand the passages that would now be deemed Politically Incorrect. They are an accurate rendition of the (1970's) times".

Joe Cottonwood (2014)

*The oldest known coast redwood is about 2,200 years old; many others in the wild exceed 600 years. Because of their seemingly timeless lifespans, coast redwoods were deemed the "everlasting redwood" at the turn of the century; in *Latin*, *sempervirens* means "ever green" or "everlasting".*

*Coast redwood reproduces both sexually by seed and asexually by sprouting of buds, layering, or *lignotubers*. Seed production begins at 10–15 years of age. Cones develop in the winter and mature by fall. In the early stages, the cones look like *flowers*, and are commonly called "flowers" by professional foresters, although this is not strictly correct. Successful germination often requires a fire or flood, reducing competition for seedlings. Seedlings are susceptible to fungal infection and predation by *banana slugs*, *bush rabbits*, and *nematodes*.^[17] Most seedlings do not survive their first three years. However, those that become established grow very fast, with young trees known to reach 20 m (66 ft) tall in 20 years. In response to forest fires, the trees have developed various adaptations. The thick, fibrous bark of coast redwoods is extremely fire-resistant and contain little flammable pitch or resin. If damaged by fire, a redwood readily sprouts new branches or even an entirely new crown, and if the parent tree is killed, new buds sprout from its base. A study published in 2010, the first to compare post-wildfire survival and regeneration of redwood and associated species, concluded fires of all severity increase the relative abundance of redwood and higher-severity fires provide the greatest benefit.*

Source: <https://www.conifers.org/cu/Sequoia.php>



Chaos and renewal

During a July mid-morning walk, two years ago, just yards away from where that little orchid would later appear, I toured an insurance agent around the property in order to establish that a 'defensible perimeter' had been established in advance of fire season. Satisfied with this distancing and protection, the meeting ended and I returned to my tractor and chain saws. Two hours later, the first plume of smoke arose from the River



Fire above a small town to the Northeast, just ten miles 'as the crow flies' from our home. The Mendocino Complex Fire, which include the Ranch and River fires, was the largest recorded fire in California history, burning over 450,000 acres. It is reported that a rancher started the Ranch fire when hammering a metal stake in his backyard in an attempt to secure a cover to snuff out a wasp nest: one human's reaction to a confounding risk of nature.

Winds pushed the River Fire conflagration as it burned North and East, safely away and non-threatening to our location. Hundreds of other structures were unfortunately lost to the fire and one firefighter, tragically, succumbed to the smoke. The devastation has altered lives, putting into keen perspective the value of family, community and collective resilience, and reveals other unpredictable exigencies within the cycle of life.

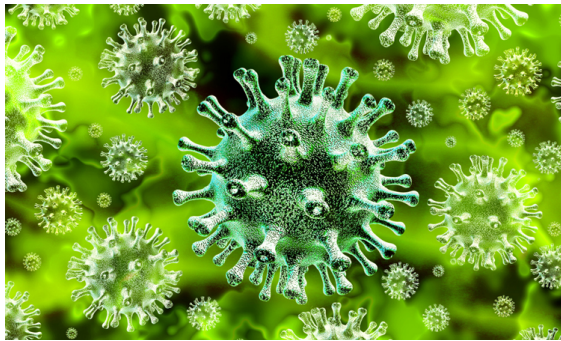
This year, meadows in the fire zone are blanketed with native California fescue and many of the temporarily displaced have returned to rebuild homes and to renew their commitment to life in concert with nature.



Valley Oak and Bay Laurel trees are sprouting significant new, green growth and non-native Black Mustard (*Brassicaceae nig.*) - the seed arrived, more a stowaway than a parasite, within sacks of wheat via Russian settlers to northern California in the 1800s - mix with tangerine colored poppies and purple lupine, all providing invitation to witness en plein air.

Courage, confidence in the future and in the human spirit endure in the face of adversity. Renewal can manifest to opportunity, and a shift from simply doing things the old-fashioned way. Should we rebuild the same building in the same place after a fire, a flood, a volcanic eruption or following other human affected disasters within the natural world?

In the world of micro-organisms, of pathogens and viruses, the paradox of their effects on the cycle of human life and death are ever more complex, misunderstood and revealing. “An estimated 10 nonillion (10^{31}) individual viruses exist on our planet — enough to assign one to every star in the universe 100 million times over — they infiltrate every aspect of our natural world, seething in seawater, drifting through the atmosphere, and lurking in miniscule motes of soil”. *National Geographic*



On 30 December 2019, three bronchoalveolar lavage samples were collected from a patient with pneumonia of unknown etiology – a surveillance definition established following the SARS outbreak of 2002-2003 – in Wuhan Jinyintan Hospital.

https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf?sfvrsn=fce87f4e_2

“Viruses are not plants, animals, or **prokaryotic** bacteria (single-cell organisms without defined nuclei), and they are generally placed in their own kingdom. In fact, viruses should not even be considered organisms, in the strictest sense, because they are not free-living—i.e., they cannot reproduce and carry on without a host **cell**. Viruses are quintessential **parasites**. Virtually all **plant viruses** are transmitted by insects or other organisms (vectors) that feed on plants. The hosts of **animal viruses** vary from protozoans (single-celled animal organisms) to humans.”

Robert M. Krug Robert R. Wagner, Britannica LAST UPDATED: Apr 15, 2020

These actions can and have resulted in lethal crowd epidemics over millennia.

“In short, disease represent evolution in progress, and microbes adapt by natural selection to new host and vectors.” Guns, Germs and Steel Jared Diamond

Our responses to the endless and relentless, dour news cycle on the current virus pandemic can either shut us down as we enter a ‘fanaticism of doom’, or provide an opportunity to consider a glass half full.

Opportunity and Obligation

Admittedly, we live in a rarified bubble here in much of California, and our great luck is that we'll likely witness one of the more robust recoveries possible given the financial, intellectual, creative and resource-rich assets at our disposal. It's possible, as many have suggested, that societies can potentially respond to this event with an opportunity to work, travel, interact and think more purposefully. And more responsibly. Will large employers in dense buildings recognize that they can indeed downsize the expectation of a corporate headquarters; facilitate more tele-work options; shift those multi-million dollar rents to employee benefits such as child-care, elder care, pensions? Will education shift to a more mobile, remote and on-line model, with year-round learning as the rule rather than a rare exception? Will healthcare take on the hyper-local, bookmobile-type clinics in neighborhoods? Mobile libraries, mobile museums, etc.: the possibilities for rethinking urban and sub-urban lives are endless. And that's just in our little slice of the planet. This isn't the last pandemic or impactful world-wide event and we're undergoing some anthropological change in real time here. That's not meant to be histrionic and we're neither panicked nor particularly worried. In the overall scheme of things, we are the very lucky ones.

For others, however, for many others, this time represents a shift in finances, in psychological health, in the fundamental view of a viable present and future. Does the issue of poverty surprise us when thinking about vulnerability to the virus? On top of the obvious lack of easy access to food, transportation, childcare, healthcare and work there are groups of people in some areas standing just two feet apart, in complete denial or clearly uninformed. This is happening across the world in communities where information is sparse, communication on the realities is lousy, and the willingness to do a deep outreach is lacking. The poor suffer more and this is a tragic reality for our human condition. It is clear that poverty has been connected, whether intentional, institutional or incidental, to race, for thousands of years. When witnessing the compounded impacts on the most vulnerable that parallel the current viral disaster, one would question whether we have truly evolved. The answer is clearly 'no'. Some of us have the luxury of time to think more deeply about these subjects. Our obligation is to move forward and onward, courageously, generously and selflessly.

Earlier this year, we removed a four-acre, abandoned X-mas tree farm clustered with diseased, yet tall and ready tinder, successfully bulldozing and clearing it for re-planting. One-thousand Sequoia Sempeviren saplings were planted on February 18, 2020.

As of 20 February 2020, a cumulative total of 75,465 COVID-19 cases were reported in China. NYT . The plant protection and nurturing has continued. In thirty years, these trees could reach 75' or more, and I've invited friends with young children, ages <1 - 19 years, to put their names on more than a few.

Some projections show the world population to be 9.8 Billion in the year 2050.

<https://www.quantumrun.com/future-timeline/2050>



Abandoned tree farm - December, 2019



Readied for planting - February, 2020

In future years, during Springtime, once the duff begins to build in the planted area and as the Redwoods take hold, those little orchids will return again to join the bees, beetles, monarchs and mice. I'll be sure to slow down and pay attention, with optimism.

D. Gerard Deauxdt April 2020