

### Developing a Qualitative Understanding of Nature: Animals, Humanity, and Evolution

This year's week-long winter course in February was attended primarily by young farmers and apprentices. They brought a quiet interest and an openness to engage in the different activities. Our courses sometimes surprise participants since it is not at all clear at first why, for example, a course related to agriculture should have one session each day that involves doing projective geometry. And so it was this year, but by the end of the week a number of participants wrote that this was their favorite part of the course! Why? Because, I think, it was new and unusual, it involved individuals in the activity of drawing, it challenged thinking in unexpected ways, and then, at the very end, it forged some mind-stretching connections to the work in other sessions.

When we plan such a course, Henrike and I do not necessarily know what kind of connections between the work in geometry and the work in biology will appear. The idea is to explore deeply in two directions and then see what reveals itself. The revelations and insights come only out of the process and they are often surprising to us as well.

One important idea that developed in the geometry this year was that every finite form is related to a particular structuring of the whole of space. Nothing is truly separate. Every form is always, through and through, related to a larger whole. This idea grew in potency as we considered animal forms and the relation of animals to the human being in evolution. We could truly begin to sense not only the uniqueness of cow, pig,

and horse, but also the interconnectedness of life forms in a deep and expansive way. We saw that, as human beings, we have the ability to let every other being come to expression in us. We are connected with the whole of life. How seriously do we take this fact? What can we do to bring our own intentions into a healthier relation to the beings with which we are connected? CH

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In their written evaluations of the course, two farm apprentices explained how the different activities “held together” for them:

“I can tell this course was planned out very thoughtfully and intentionally. Unlike my educational experience growing up, I was able to connect the different activities and lectures, and that helped my understanding. My intellect and spirit have both been stimulated, refreshed, and challenged.”

“This week has been a breath of fresh air, a nuanced and sensible building-up of a cohesive and sensitive worldview from which anyone could benefit, regardless of their inclination toward the particularities of faith and philosophy that led to it. Overall, a nice balance of instruction and interaction, observation and creativity, tangible and abstract, although I would not object to more time spent on animals (either in general or particular). Discussion of domesticity especially interesting and informative.”



# Of Wines and Compost



I have never had a farmer or gardener approach me with a more vehement desire to produce high quality compost than was shown last March by two biodynamic winegrowers from California. I believe their enthusiasm and commitment toward improving their composting practices have something to do with the highly refined science and art of making wine itself.

My journey began in Sonoma County at the biodynamic Benziger Family Winery. Located in the Sonoma Mountain wine-growing region, the Benziger ranch is tucked into a bowl-shaped valley eight hundred feet above sea level. The area has a unique and impressive geography. What struck me most, however, was the rich biodiversity and appealing aesthetics of the vineyard, together with the owners' commitment to the health, not only of their vines, but also of their entire farm. For example, they created a special "insect garden." With its diverse plant life, the insectary hums with life as it attracts butterflies, humming birds, and numerous beneficial insects. There is also a lovely sheep flock that grazes among the vines along with Scottish Highlander cattle. The quality of the Benziger wine reflects the context and wholeness of the farm landscape.

After three days at Sonoma Mountain, I headed north to Mendocino County, home of the first organic and biodynamic certified vineyard in the country. Frey Vineyards is located on the beautiful slopes of Redwood Valley. The familiar palm trees, so present at the beginning of my trip, were now replaced by a landscape where towering redwoods grow. Warmly welcomed by Luke Frey and his

family, I was engaged in conversations and practical activities regarding the improvement of their composting practices. Luke also organized a public workshop where I spoke about the "The Art and Science of Composting and Its Inner and Outer Gesture."

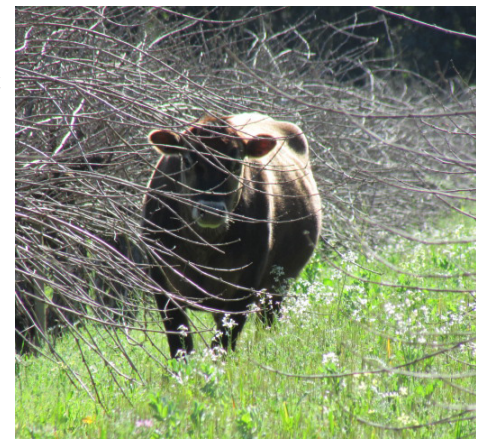
## The Lesser Cousin of Wine

An intrinsic part of any vineyard and winemaking process is the grape pomace. After the grapes are crushed so their sweet and precious juice can be further transformed into wine, a much less romantic substance is left as a byproduct—the pomace. Hundreds of thousands of tons of skins, stems, and seeds are produced each year. For most wine growers, this is a noxious and troublesome material. Left alone the pomace can quickly emit intense foul odors. It has a very low pH, and if it is carelessly stockpiled in wet conditions it can begin to produce acetic acid. Although its carbon/nitrogen ratio seems at first ideal for composting, it behaves as a carbonaceous material because of the high lignin content of all its stems. As a whole it is relatively rich in nitrogen, potassium, and calcium. These and other characteristics make pomace a peculiar and unusual material that is very challenging to work with.

Pomace is often approached as a burdensome waste. "Externalizing" it—transferring the burden of it to the environment—

often seems the best and easiest solution. In many places, after the grapes are crushed, the pomace is hauled out of the vineyard and dumped elsewhere. Yet, just as cow

manure is an extension of the dairy herd and belongs to the reality of the farm, so, too, pomace belongs to the vineyard and needs to find a worthwhile place as part of the wine-making process.





## Redeeming the Pomace

Mike Benziger, founder of the Benziger Family Winery, has a very different perception of pomace. Always striving to foster the health of his farm as a whole, he clearly sees the pomace as an important and integral part of the nutrient cycle of the ranch. At the suggestion of Matias Baker, the farm's biodynamic consultant, he had invited me to help them improve the quality of their compost and their composting process.

Over three days we had numerous conversations envisioning the compost as an integral part of the vineyard, where one is *continuously engaged* with the compost process. We also actively worked to improve some of the current practices, and reviewed the general principles for mixing fresh material and building a new compost pile.

What resonated throughout that whole week—at both farms—was the realization and confirmation that the composting of the pomace is an integral part of any vineyard. Compost needs to be cared for throughout the whole growing season; it cannot be something that is attended to only when there is time. The farm community needs to develop a conscious and fully engaged sense of responsibility for all aspects of composting.

The art of mixing fresh decaying organic matter and guiding this living process through a de-composition and re-composition to a final composition is as much an art as the creation of wine. For folks so dedicated and committed to the quality and art of wine fermentation, the idea of giving the same care and attention to the life of the pile and its contribution to the soil does not seem foreign. Compost can contribute to the “terroir” of a wine. (The word refers to the qualities of earth, air, water, and light—

all the environmental qualities—through which a wine gains its distinctive appeal.) Pomace, instead of being a burdensome waste, can be transformed into humus—a life giving substance. Ultimately, composting should not be seen only as a way of improving the quality of the wine, but it should be seen as a free offering, given out of love for the Earth and Humanity.

Bruno Follador



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## Out and About

• **Techno Utopia Teach-In.** (Audio available; see below.) In October, 2014, Craig gave a presentation at this teach-in sponsored by the International Forum on Globalization in New York City. There were 58 different presentations over two full days—each presenter was given 20 minutes—and the presentations were grouped according to different overriding topics (see <http://ifg.org/techno-utopia/>). Speakers included Bill McKibben, Vandana Shiva, and Nature Institute advisory board members Langdon Winner, Wes Jackson, and Andrew Kimbrell, among many others.

Craig's talk was called "The Hyper-real and the Real: Humans in the CyberWorld." He began his talk by showing a beautiful short video of a fox. You can view it at: <https://www.youtube.com/watch?v=D2SoGHFM18I>. We recommend that you view it first without sound (which is how Craig showed the video) and then listen to his talk, which can be heard at: [http://ifg.org/techno-utopia/full-audio-of-teach-in/#mep\\_34](http://ifg.org/techno-utopia/full-audio-of-teach-in/#mep_34).

• **What is Phenomenology?** In February Craig contributed to a four-day conference for high school science teachers at the Summerfield Waldorf School in Santa Rosa, California. He led a session each morning for all participants on "The Experiential Foundations of Phenomenology." Each afternoon he worked with a smaller group, mainly biology teachers, to explore some key issues in evolution.

• **Developing Living Thinking: Geometry and Plant Study.** At the end of February Henrike and Craig gave a public weekend workshop on this topic. The event took place in Pasadena, California and was hosted by the Los Angeles branch of the Anthroposophical Society.

• **Projective Geometry in a Social Therapy Setting.** In March and April Henrike taught a five-session course in Projective Geometry for students attending a Social Therapy Program at the Camphill community in Copake, New York.

• **Characterizing Plants and Animals.** In March Craig gave a half-day workshop at the Pfeiffer Center in Spring Valley, New York, on the different way-of-being of plants and animals.

• **Biology Teachers, Evolution, and the Giraffe's Neck.** At the end of March Craig gave a weeklong seminar on evolution for high school biology teachers at the annual International Refresher Week for high school teachers in Kassel, Germany. This week offers courses in both English

and German, and is attended by around 200 teachers from many different countries. Craig also gave a talk to all participants on "Does the Giraffe Have a Long Neck? The Challenges of Holistic Biology."

• **In the California vineyards.** In March Bruno spent a week consulting with the Benziger Family Winery in Sonoma County and the Frey Vineyards in Mendocino County. See our story on page 8.

• **Waldorf Educational Research.** In April, Henrike and Craig participated in a weekend gathering in Amherst, Massachusetts, organized by the Research Institute for Waldorf Education. The topic of the gathering was "context in education." Craig and Henrike gave a presentation.

• **Composting in Ontario and Virginia.** Bruno has been invited to give an early May workshop at the Thyme Again Garden organic farm in Carrying Place, Ontario, a rural community just north of Toronto. The workshop title is "The Art and Science of Composting and the Qualitative Language of Ehrenfried Pfeiffer's Chromatography." In May he will also conduct workshops on the same topic at The Nature Institute and the Josephine Porter Institute for Applied Bio-Dynamics, an agricultural research and educational institute in Woolwine, Virginia.

• **Amazon River Adventure.** By February, our upcoming trip was fully booked. Sixteen participants, from Brazil and the U.S., will join Mark Riegner and Craig Holdrege from May 31 to June 12. We will be exploring the plants, animals, and ecology of the Amazon and working to illuminate our experiences through reflections upon Goethean phenomenology.

• **At Schumacher College.** In September, Craig will again teach for a week in the Holistic Science masters degree program at Schumacher College in the United Kingdom. His topic this year is "Goethe's Way of Science."

• **Does Science Evolve?** At the end of September Henrike and Craig will participate in a conference on "Evolving Science" organized by the Science Research Lab at the Goetheanum in Dornach, Switzerland. The aim of the conference is to bring people together from around the world whose work is inspired by the Goethean approach to science and its extension through Rudolf Steiner's work.

• **Goethe in Texas.** Craig has been invited to give two talks in October at Texas State University on Goethe's approach to science. He will speak to faculty and students.



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# Spring and Summer Events at the Institute

## **An Introduction to Projective Geometry**

*A workshop in eight sessions with Henrike Holdrege*

Mondays, 9:00 am to 10:30 am: March 16, 23, 30;  
April 6, 13; May 4, 11, 18

This work will continue in the fall.

## **Monday Nights with the Stars**

*A course in four sessions with Henrike Holdrege*

Mondays, 8:00 pm: March 23, 30; April 20, 27

## **Mathematics Alive! - The Geometry of the Platonic Solids**

*A weekend workshop for middle school teachers with Henrike Holdrege and Marisha Plotnik*

April 10-12.

## **The Art and Science of Composting and Ehrenfried Pfeiffer's Chromatography**

*A weekend workshop with Bruno Follador*

May 1-3

## **Awakening to Nature's Open Secrets: Pathways in Science and Art**

*A five-day course with Craig Holdrege, Henrike Holdrege, and faculty of the Hawthorne Valley Alkion Center, a neighboring adult education organization*

June 21-26

## **Miracles of Light and Color**

*A five-day course with Henrike Holdrege and Jennifer Thomson*

An immersion in Goethean science and water color painting  
July 9-14

## **It's About Color**

*A talk and slide show by Jennifer Thomson*

Jennifer will discuss her paintings of the last seven years.  
Sunday, July 12, 7:30 pm

For more information about these events, please visit the calendar on our website: <http://natureinstitute.org/calendar>.

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