

origin of conscience is a pregnant question with evidence provided by levels lesser than and greater than the level of human biology. Plants are, however, truly conscious in that they sense the external environment, assess the balance between cost and benefit, and then respond appropriately to the sensations. Through the study of plants we see the unity of life and what Raoul Francé described as “mankind in the making” (1905. *Germs of Mind in Plants*. Chicago (IL): Charles H. Kerr and Company. Page 147.). However, there is also a diversity in life and a difference between plants and humans in that humans, living up to our specific epithet, *Homo sapiens*, have a well-developed conscience that gives rise to integrity and a greater consciousness that allows us to strive to understand the external world and our place in that world.

I recommend this volume to any student at any level, and any amateur or professional clinician or bench scientist who is interested in what living organisms do (and perhaps think about) to survive in the natural world. As an encouragement to “open-minded, imaginative individuals” (p. 278) to do something with that interest, I will end with the quote from Barbara McClintock with which Trewavas begins his book: “A goal for the future would be to determine the extent of knowledge the cell has of itself and how it used that knowledge in a thoughtful manner when challenged” (p. 1).

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PLANT-THINKING: A PHILOSOPHY OF VEGETAL LIFE.

By Michael Marder; Foreword by Gianni Vattimo and Santiago Zabala. New York: Columbia University Press. \$90.00 (hardcover); \$29.50 (paper). xix + 223 p.; index. ISBN: 978-0-231-16124-4 (hc); 978-0-231-16125-1 (pb); 978-0-231-53325-6 (eb). 2013.

My earliest memories include walking through the woods with my family and gardening in our backyard. Doing so, I learned to love plants and when I grew up I became a botany major at the University of Massachusetts where I was cultivated by teachers who loved both plants and the souls of their students. My teachers nurtured the relationship between the two. Things are different today. Describing the modern relationship between plants and the soul, Marder writes that

it would appear that just as the invocations of “the soul” are superfluous, if not misleading, seeing that they are redolent of an outdated *Weltanschauung*, so the philosophical treatment of flora in the age of positivist science is

unnecessary and is best left to the practitioners of the specialized (ontic) discipline of botany. Both verdicts have a common root in the reductively rationalized approach to reality, which has culminated in what Max Weber has called the “disenchantment of the world,” where the unquestioned priority of science goes hand in hand with a delegitimization of empirically unverifiable notions. What unites the soul and plants, the most ethereal and the most earthly, is their exclusion from the purview of respectable philosophical discourses in late modernity (p. 18).

To my mind, the real problem is that the “respectable philosophical discourses” tolerable in present-day academia, which is better described as not-for-prophet than not-for-profit, have the depth of a tumbleweed root and the breadth of a horse-tail shoot. We academics, who have bound one hand behind our back with technical and philosophical reductionism and put the other hand out in a quest for funding, have become the vegetables, forgetting the roots of our words as easily as we forget the roots of the plants. Marder tells us that the word vegetable comes from the Middle Latin *vegetare*, which means “to enliven.”

“What is in question then,” according to Marder, “in any retrieval of ‘plant soul,’ is the very meaning of life handed over to extreme objectification and treated as though it were a plastic image of death” (p. 19). *Plant-Thinking* reminds us that there is something more to the world—and specifically that plants are more than just food and fuel. According to Marder,

the plant confirms the “truth” of the soul as something, in large part, non-ideal, embodied, mortal, and this-worldly, while the soul, shared with other living entities and construed as the very figure for sharing, corroborates the vivacity of the plant in excess of a reductively conceptual grasp. Within the confines of this commerce, the elusive life of the ensouled plant cannot become a scientific object without getting irretrievably lost, transformed into dead matter, dissipated in cellular activity and in the larger anatomical (or phytotomical) units, prepared in advance for vivisection (p. 19).

Including the natural world around us into ethical thinking is not unknown to Western naturalists. Henry David Thoreau taught us that “in Wildness is the preservation of the World” (1862. *Atlantic Monthly* 9:224), Aldo Leopold realized the importance of “Thinking Like a Mountain” (1949. *A Sand County Almanac: With Essays on Conservation From Round River*. Oxford (United Kingdom): Ox-

ford University Press. Page 137.), and his son A. Carl Leopold shared that “[f]or the past 25 years, I have been learning from seeds” (1999. *Seed Science Research* 9:111). We can learn from plants, according to Marder, that “what is ‘worthy’ in vegetal life is that it embodies the an-archic principle of living and thereby constitutes plant-thinking (or, for that matter, plant-doing) with its acts of nourishment and generation applicable to all other living beings” (p. 182).

Plants, according to Raoul Francé, are “man-kind in the making” (1905. *Gems of Mind in Plants*. Chicago (IL): Charles H. Kerr and Company. Page 147.). I believe that we can learn from plants about the unity and diversity of life—the similarities and differences between plants and people. We can learn about false unities and false dichotomies. Learning from plants does not and should not be taken to mean a lowering of *Homo sapiens* who, I believe are endowed with free will and a soul, to a purposeless and meaningless life. This is an important point to make when, since the days of the eugenicists, the *Weltanschauung* of scientists already includes the denigration of the thoughts of ordinary citizens. According to Julian Huxley, we have “been ousted from [our] self-imagined centrality in the universe to an infinitesimal location in a peripheral position in one of a million of galaxies” (1961. *The Humanist Frame*. London (United Kingdom): Allen and Unwin. Page 18.) and by Carl Sagan that we sit “on an insignificant planet of a hum-drum star lost in a galaxy tucked away in some forgotten corner of a universe” (1980. *Cosmos*. New York: Random House. Page 193.). Ironically, while ordinary citizens have been jettisoned to some forgotten corner, the scientists who jettisoned them have remained in a privileged position—where the current scientific answers (dogma?) are considered to be beyond question.

Marder tells us that according to western philosophers from Aristotle to Hegel, “Plant growth is also seen as purposeless because the vegetal soul does not attain to any higher capacities other than those of endless nourishment and propagation” (p. 25). But this intellectual disenchantment with the world is currently even greater. According to evolutionary psychologists, such as Steve Stewart-Williams, “We are here because we evolved, and evolution occurred for no particular reason. Thus, on a Darwinian view, not only is our species not as special as we had once thought, but our lives are ultimately without purpose or meaning. Life just winds on aimlessly, a pointless, meandering sequence of events. Sometimes it’s pleasant, sometimes not, but it lacks any overall purpose or goal or destination” (2010. *Darwin, God, and the Meaning of Life: How Evolutionary Theory Undermines Ev-*

erything You Thought You Knew. Cambridge (United Kingdom: Cambridge University Press. Page 197.). Yes, let us take a step back from the 21st-century scientific *Weltanschauung*, put down our technology, and take a walk in the woods or through a meadow, and let us garden, so we can respect and learn from plants. In doing so, we will gain an enchantment of the green world and an appreciation of our own souls.

Although this book is about weak philosophy, it is not for the weak of heart. If Gianni Vattimo and Santiago Zabala, who wrote the foreword to this book, are right, after reading this volume, you will see the need to destroy Western democracies and the “capitalist agro-scientific complex” (p. xv) that are based on Western political-economic thought. If I am right, by getting to know plants better, you will just become more thoughtful—perhaps even as a result of thinking about the values and limitations of the social philosophy that underlies this book. Marder’s philosophy demands treating plants “as singularities, not as examples of a particular genus or species” since “the loss of a single plant is tantamount to the passing of an entire world” (p. 183). This is how I think humans should be treated, and history shows that this is best achieved in a capitalist democracy. As a proponent of individual human rights and freedom who realizes that government must strike a balance between the individual and the state, I will end this review with a quote from a speech given by Winston Churchill in the House of Commons on November 11, 1947: “Many forms of Government have been tried, and will be tried in this world of sin and woe. No one pretends that democracy is perfect or all-wise. Indeed, it has been said that democracy is the worst form of Government except all those other forms that have been tried from time to time.”

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