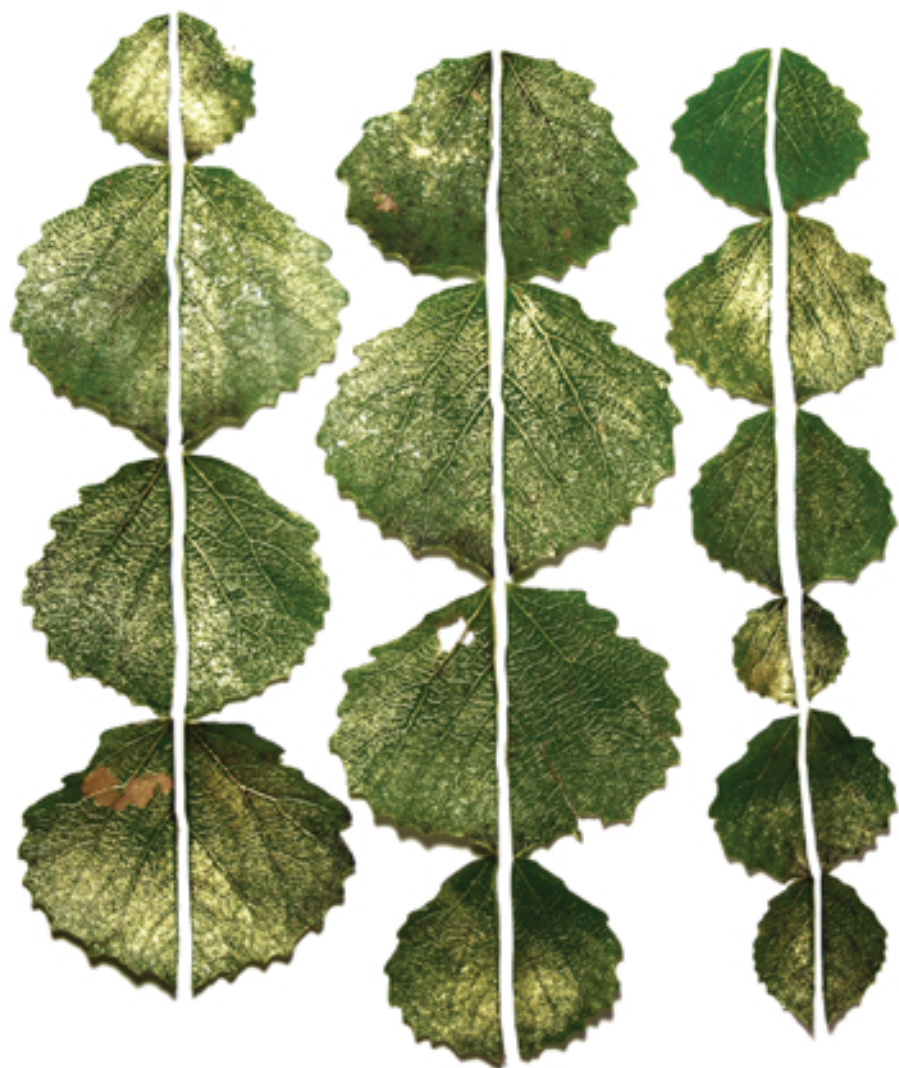


Plants as Persons

A PHILOSOPHICAL BOTANY



MATTHEW HALL

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PLANTS AS PERSONS

SUNY series on Religion and the Environment
Harold Coward, editor

PLANTS AS PERSONS



A Philosophical Botany

MATTHEW HALL

SUNY
PRESS

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A PHILOSOPHICAL BOTANY

How should we speak to trees, how should we treat the trees,
other animals and each other that all of us can live and live at
peace?¹

—Erazim Kohák

REPLANTING NATURE

Most people are aware that human beings are harming nature. Every iconic picture of a dying rainforest, a slaughtered tiger, or a poisoned river rams home the fact that human relationships with the natural world are increasingly destructive. In some of the strongest analyses of our environmental crisis, it has been instead that human hyperseparation from the natural world has entangled us in what conservation biologists recognize as the sixth great extinction crisis—a crisis of death that is human made. Environmental philosopher Val Plumwood has put forward the idea that the prevailing Western culture has created a human-nature dualism.² In this worldview, nature is constructed as radically different from the human, and human culture is radically separated from it. Plumwood argues that Western worldviews in particular render nature as an insignificant Other, a homogenized, voiceless, blank state of existence, a perception of nature that helps justify domination of the Earth.³

Largely because it is depicted as devoid of the attributes which require human attention—such as mentality, agency, and volition—nature is left out of the sphere of human moral consideration. In the words of the recent UN GEO4 report, the resulting behavior toward the natural world constitutes an assault on the global environment that risks undermining biospheric integrity.⁴ An appropriate response to the swathe of environmental problems created by human beings must be to develop less destructive, more respectful, harmonious relationships between humans and nature. Yet, the concept of nature is somewhat elusive and homogenous.

To the postmodern deconstructionist, nature is a provocative term, a human construct, created only in its situated opposition to the human realm of culture.⁵ In the physical sciences, nature is thought of in terms of universals and inviolable laws. The physicist and the astronomer form their idea of nature from celestial bodies, and their governing forces. Back on Earth, the cultural geographer David Harvey perceives nature in terms of dialectics, as a series of processes and flows.⁶ This idea of nature as a system of transfers has much in common with contemporary ideas in the ecological sciences. Within the realm of environmental philosophy, process-based understandings of nature are often advocated. Freya Mathews regards nature as the absence of abstract design, as “whatever happens when we, or other agents under the direction of abstract thought, let things be.”⁷

Despite the abundance of philosophical and everyday references to nature, it is clear that within environmental studies, “nature has remained a largely undifferentiated concept, its constituent parts rarely theorized separately.”⁸ Therefore, a logical response to the challenge of renewing ethical relationships with nature in a time when much of the nonhuman world is threatened by human activity is to theorize human-nature relationships in terms of heterogeneity. We must take Plumwood’s two major tasks for humanity, “(re)situating humans in ecological terms and non-humans in ethical terms” and apply them in terms of a separately theorized nature of diversity, abundance, and individual (as well as collective) presence.

Using insights from biology, such activity has been proceeding for some time in the broadly defined discipline of animal studies. For decades, animal rights theory has been directly concerned with establishing more ethical relationships with animals. Leading animal rights theorists such as Peter Singer, Tom Regan, and Gary Francione have used an understanding of the sentience and subjectivity of animals to argue for their moral consideration.⁹ Ethologist Mark Bekoff has also pioneered this approach in zoology. A leading voice for the ethical treatment of animals, Bekoff directs his research to maximize human recognition of animals as fascinating, complex, social beings—autonomous individuals that fully deserve human moral consideration.¹⁰ Such detailed biological knowledge of animal physiology and behavior has prompted a number of wider animal-human studies that have aimed at reestablishing human-animal relationships on more moral terms.¹¹ In view of the major tasks for humanity, these studies have begun to question the dualism of humans and nonhumans and have begun to open up the possibility of moral consideration for nonhumans.

While such studies of moral consideration for animals proliferate, studies that focus on arguing for the moral consideration of plants are rare. Yet, recognizing the need for more ethical human-nature relationships and the need to theorize the constituents of nature separately, we must also acknowledge that the largest component of a nature composed of nonhuman beings is not composed

of animal life. In the Earth's deserts and on her mountainous peaks, much of the nonhuman world is composed of rock. In her seas, lakes, and rivers, the biggest nonhuman presence is water. However, in the majority of places that are inhabited by people—even within towns and cities, particularly in Europe and North America—plants dominate the natural world.

Most places on Earth which contain life are visibly *plantscapes*. Whether they walk in human transformed habitats or in wilderness, human beings are far more likely to encounter plants than any other type of living being.¹² In fact, the bulk of the visible biomass on this planet is comprised of plants.¹³ It is a fact that in most habitable places on Earth, being in the natural world first and foremost involves being amongst plants, not amongst animals, fungi, or bacteria. Although fungi, bacteria, and animals are important for sustaining natural processes, plants are the most abundant form of life in nature that humans encounter.¹⁴ Importantly, both directly and indirectly, it is the visible presence of this plant biomass which enables the presence and continued existence of human beings.

Within the imprecision of the term *nature*, the global dominance of the plant kingdom is seldom recognized. In a plant-dominated biosphere, it is possible that nature has become so amorphous and peripheral because of the way that plants (synonymous with nature) are themselves perceived. A long overdue study on human-plant perceptions and relationships is crucial therefore for understanding how we treat the natural world.¹⁵

Here I will base such a study on an extended investigation of the cultural and philosophical orientations that are critically important in human considerations of the natural world. Philosopher Erazim Kohák has coined the term *philosophical ecology* to articulate the need to incorporate these considerations within environmental discourse.¹⁶ This text applies the idea of a philosophical ecology to the botanical world and avers that a study of different cultural-philosophical perceptions of the plant kingdom is crucial for developing more ethical relationships with the plant kingdom. By examining a variety of contrasting cosmologies, philosophies, and metaphysical systems that deal explicitly with plants, one of the main aims of this study is to uncover how and where plants are placed within a variety of human worldviews. In doing so, it will dissect how these plant philosophies determine the overriding relationships that human beings have with the plants they live amongst. An important aspect of this task is an extended analysis of the processes by which plants find themselves included or excluded within the realm of human general and moral consideration.

The task is to survey a number of plant knowledges in order to uncover the most appropriate human rendering of plant life. At a time when many plant species and indeed the natural world itself, are threatened by human activity, this study also aims to locate the most appropriate human behavior toward plants. This dual approach is again set within the parameters of Kohák's philosophical

ecology. Its thrust follows Kohák in his search for the most appropriate “manners of speaking” rather than looking for a “positive description of a univocal ‘metaphysical’ reality.”¹⁷

Within the context of an anthropogenic ecological crisis, the choice between different modes of perception and action is an important one. Human life is contingent upon the existence of plants. Throughout this work, I repeat the assertion that our general, Western, view of plants as passive resources certainly plays a significant role in our ecological plight. Finding a more appropriate way of approaching plant life could underpin a mode of human action that maintains, rather than threatens, biospheric integrity.¹⁸ By surveying a number of cultural and philosophical sources, the aim of this work is to incorporate cultural and metaphysical influences into botanical studies—perhaps the rendering of a more *philosophical botany*.

Throughout the pages of this book, I search for the most appropriate behavior toward plants in a time of impending ecological collapse. This broad approach resonates with Freya Mathews’s idea, that we “must draw on as wide a range of cultures as possible” in order to develop complex ethical solutions to environmental problems.¹⁹ The point is not to appropriate other knowledge systems, nor elevate one worldview as *best*, but to investigate a number of worldviews in order to generate ideas and strategies for more appropriate ecological behavior in a Western context. As Eliot Deutsch makes clear, we don’t turn to different cultural ideas “for a better scientific understanding of nature . . . but for different ontological perspectives and moral ideals that might influence our own thinking.”²⁰

By working with a number of small case studies, this survey will construct a meta-narrative, examining the influential factors and the processes that determine how plants come to be placed within particular worldviews. When questioning human perceptions of and behavior toward the plant world, it is clear from the outset that Erazim Kohák is onto something. Cultural-philosophical ideas strongly influence human interactions with the plant kingdom, and humanity possesses a multitude of different ways of thinking about and acting toward plants. The following chapters analyze contrasting modes of perceiving and behaving toward plants. For clarity, I have split these modes of perception into broadly defined *philosophies of exclusion* and *philosophies of inclusion*.

PERSPECTIVES AND PROCESSES OF EXCLUSION

The first three chapters tackle the marginalization of plants using the themes of radical separation, zoocentrism (an animal-centered outlook), exclusion, and hierarchical value ordering. These chapters argue that these notions predominate

in Western discussions of plant ontology. In the terms of the scholar Mikhail Bakhtin, such approaches to life can be broadly classified as monological. For Bakhtin monologue does not recognize the voice or presence of the other; it “is finalized and deaf to the other’s response, does not expect it and does not acknowledge it any decisive force. Monologue manages without the other. . . .”²¹

The question of the human marginalization of plants has started to receive some attention in the botanical sciences. In a seminal study of plant physiology, vegetation ecologist Francis Hallé starts with the presumption that human beings are ignorant of the biosphere’s plant life. He contends that the majority of people are “generally poorly acquainted with plants, looking down on them or simply ignoring them.”²² In the same vein, botanists and environmental educators Wandersee and Schussler have written of the phenomena of *plant blindness*, the literal ignorance of plants by human beings and their spontaneous preference for animal life.²³ According to the authors, some of the symptoms of this widespread “disease” are:

- Failing to see, take notice of, or focus attention on the plants in one’s life.
- Thinking that plants are simply the background for animal life.
- Overlooking the importance of plants to human life.
- Misunderstanding the differing time scales of plant and animal activity.²⁴

Hallé postulates that human beings place little value on plant life because of a prevailing zoocentrism or anthropocentrism. This stems from the fact that human beings do not as readily identify with plants as with animals and that humans lack a spontaneous appreciation of the plant’s physiological workings.²⁵ Although we are surrounded by plants and cultivate them fanatically in our gardens, he regards plants as being in a state of “absolute otherness” to human beings, by which he means that plants operate their lives in vastly different ways to the animal *Homo sapiens*. Hallé has attempted to correct this situation by increasing the knowledge of plant physiologies and life histories, focussing on the ways in which plants differ significantly from the human and the animal.

From a similar understanding of the problem, Wandersee and Schussler have attempted to explain the ignorance toward plants and a prevailing zoocentrism through an analysis of the psycho-optical prejudices in animals.²⁶ Lack of knowledge of plants, the general similarity of plant surfaces and textures, the lack of movement in plants, and the fact that plants do not prey on humans are all put forward as possible reasons for the phenomenon of *plant blindness*.²⁷ In a more recent paper, Wandersee and Clary make it clear that they regard the neglect and ignorance of plants to be symptoms of an underlying physiological bias:

In challenging the conventional wisdom, we have proposed that those first three behaviors zoocentrism, zoochauvinism, plant neglect are actually *symptoms* of the default *condition* of plant blindness arising from how the human eye-brain system typically processes and attends to visual information. . . .²⁸

While these botanists have strongly articulated the problem of plant ignorance, their analyses of its causes remain incomplete. They have identified the problem of a zoocentric attitude toward plants, yet the reasons they provide for its existence are potentially misleading. By positing a physiological basis to this problem, they implicitly suggest that such a zoocentric attitude is in a sense *natural* and *inevitable* for all human beings. I argue that the marginalization that characterizes Western thought is neither natural nor inevitable. Zoocentrism does not emerge from physiology, but is largely a cultural-philosophical attitude. The fundamental mistake here is the assumption that this zoocentrism found in Western society pervades all cultural ideas and actions toward the plant kingdom. This closed stance leaves little room for the recognition of alternative approaches.

The opening three chapters deal with broadly Western streams of thought, and each chapter clearly demonstrates the predominance of zoocentric perspectives. Here, my key arguments are that the insignificance of plants in contemporary Western society identified by Hallé et al. is partly generated from a drive toward separation, exclusion, and hierarchy. My analysis focuses on the bases for such ideas, the processes by which they have been solidified, and the outcome for human behavior toward plants.

The material in the first three chapters agrees with Hallé's recognition that Western societies have a predominantly zoocentric vision, but differs in its claims that zoocentrism is a deliberate philosophical strategy for marginalizing and excluding plants. Zoocentrism is a *method* for achieving the exclusion of plants from relationships of moral consideration. For want of a better term, it is a *political* tool in an exclusionary process in which "the Other becomes a negative necessity, that which must be set apart and kept apart for one's own self of collective self to be sustained."²⁹ Zoocentrism thus helps to maintain human notions of superiority over the plant kingdom in order that plants may be dominated. It is a crucial dualising force, responsible for depicting plants as inferior beings and as the natural base of a human-dominated hierarchy.

Along with the dualisms identified by Plumwood,³⁰ constructing a rigid hierarchy in which those at the top have more value is fundamental to encouraging radical separation of different groups and to justifying a logic of domination by the upper echelons of the hierarchy.³¹ In the field of social ecology, Murray Bookchin has identified the construction of human hierarchies as the justificatory basis of dominance by one human group over another.³² In ecofeminist

theory, Karen Warren has identified value-hierarchical thinking as part of an oppressive conceptual framework that “functions to explain, maintain, and ‘justify’ relationships of unjustified domination and subordination.”³³ This separation and value-ordering is a crucial part of the general drive toward excluding plants from human consideration. This trend is very important to uncover and ultimately redress, for exclusion is “an act of intellectual violence; and it is the attitude that drives collective and systematic physical violence.”³⁴ The intellectual violence of backgrounding plants and denying their sentience can be said to underpin the “occupation, appropriation, and commodification” of the plant kingdom and thus the wider natural world.³⁵

In considering Western attitudes toward plants, this hierarchical ordering based upon the construction of exclusionary, “oppositional value dualisms” is predominant in some of the Western world’s most influential, penetrating philosophies.³⁶ Chapter 1 deals with the construction of hierarchies in the natural world, and the dualistic treatment of plant abilities and faculties within the philosophical tradition of the ancient Greeks. The analysis of these constructions begins with Plato, who defined plants from a dualistic zoocentric perspective and asserted that plants were created expressly for the use of human beings. This approach was perpetuated by Aristotle. Aristotle judged the abilities of plants on the basis of what he had observed in animals, rather than considering plants on their own terms. Aristotle constructed a hierarchy of life with plants placed firmly at the bottom. Underpinning this hierarchy, plants were rendered *radically* different from animals, regarded to lack the faculties of sensation and of intellect. Such hierarchical ordering demonstrates a drive toward separation; one that is based upon removing continuities from plant and human life. This is a stance which solidifies exclusion.

One of the key features of Chapter 1 is that it explores the effect of perspective and intent on the human approach to plant life. It contrasts Aristotle’s hierarchical ordering, his drive toward separation and exclusion by removing human-plant continuities, with the work of his pupil Theophrastus. Examining the Theophrastean perspective, Chapter 1 reveals that this stance of exclusion is neither natural nor inevitable. It is human intent, rather than the differing physiology of plants which creates radical exclusion.

In contrast to Aristotle, the work of Theophrastus attempts to treat plants on their own terms and emphasizes their relatedness and connectedness to humanity. Such an approach to plant life is very similar to that found in ancient Greek mythology and the surviving fragments of pagan traditions across Europe.³⁷ It is apparent in the work of Theophrastus that rather than exclusion, his orientation was toward inclusiveness and consideration. The result of this difference in intent is phenomenal. Instead of regarding plants as passive beings lacking sensation and intellect, Theophrastus related to plants as volitional, minded, intentional

creatures that clearly demonstrate their own autonomy and purpose in life. For Theophrastus, plants demonstrated their own purpose and desire to flourish through their choice of habitats and the production of seed and fruit.

Chapter 2 explores some of the reasons why the predominant Western treatment of plants more closely resembles that of Aristotle rather than Theophrastus. Although he had a great impact on the development of large parts of botany, it is unfortunate that Theophrastus's philosophical orientation was not followed or developed. This chapter deals with disappearance of Theophrastus's insights, the predominance of Aristotle's hierarchical philosophy and the analysis of zoocentrism in botanical history in greater depth. In particular it examines how readily a hierarchical approach to plants has been retained in the botanical sciences, with plants increasingly excluded on the basis of ancient zoocentric philosophy. One of its most important points is that the systematic devaluation of such a large part of the natural world had been occurring long before Cartesian philosophy and the rise of an industrial mechanistic atomism.³⁸

Chapter 3 continues the theme of hierarchies and looks at the interpretation of plants within Christian theological sources, specifically biblical material and the writings of prominent theologians. It is clear that biblical texts also construct plant life as radically different to humans and animals. In the biblical creation stories, there is a further drive toward emphasizing the differences and rejecting the continuities between plants and humans. Although plants display the characteristics of other living beings such as growth and death, they are not considered to be alive. While the possibility exists for a more inclusive approach to plant life on a number of criteria, they are instead separated from the rest of the living world on the basis that they lack the "breath of God." This treatment strips the plant world of both life and any possibility of autonomy. As a result, within Christian theological material, relationships with plants can be characterized predominantly as *instrumental* relationships, based upon the usefulness of plants to human beings. Plants are placed at the bottom of a hierarchy of the natural world and are excluded from human moral consideration.

In the writings of later theologians, the vitality of plants is accepted but the hierarchical view of life is continued, maintaining the instrumental mode of human-plant relationships. There is a tension here between the recognition of plants as living beings and the need to kill plants on a daily basis to survive. Rather than acknowledge this killing, and face possible limits to human action, these hierarchies suppress it. They do this by finding other ways to construct *radical* difference in order to render plants as peripherally insignificant, thus furthering the logic of domination. The hierarchy that is presented in biblical creation stories is solidified using similar ideas from the Greek philosophical tradition. In particular, Aristotle's rendering of plants without intellect, was used by Christian theologians to deny plants the possession of a *soul*.

Chapters 1, 2, and 3 demonstrate that the predominant Western relationships with plants are instrumental and hierarchical, and that the drive toward separation is based upon the systematic devaluation of the *lowliest* parts of the hierarchy. Fundamentally, these are the processes that deny moral consideration to plants. Exclusion is both based upon, and furthers, the denial of plant presence and sentience. Ultimately it denies life and death. This is a denial that renders plants as passive entities and which compellingly reinforces separation and difference. In biblical thought, as well as in Plato and Aristotle, hierarchies are built around the issue of use and violence.³⁹

PERSPECTIVES AND PROCESSES OF INCLUSION

The treatment of, and response to, plant life and death pervades the majority of the following chapters. Chapter 4 links the case studies already outlined with those that deal with inclusion and connection. As well as inclusion and connection, Chapter 4 also introduces the general themes of *heterarchy* and *dialogue*.⁴⁰ Like monologue, here dialogue is defined in Bakhtinian terms—principally the recognition of the other’s “voice,” standpoint, and presence during interaction.⁴¹

Along with a drive to treat plants on their own terms, these themes of inclusion pervade the remainder of the chapters in this work. Chapter 4 is the longest as it acts both as a counterpoint and a companion to the first three chapters. Containing a number of conflicting viewpoints, bifurcations, and ambiguities—it is also a companion to the chapters which follow. Valuably, it allows examinations of contrasting processes, which lead to diverging attitudes toward the plant world.

In Chapter 4, I turn toward a consideration of Hindu scriptural sources. Although far from exhaustive, even my limited reading of these scriptures demonstrates that plants are not universally subject to hierarchical separation. In important Hindu texts, plants are described as fully sentient beings with their own attributes of mentality. Significantly, in death, the portrayal of reincarnating souls in the *Upaniṣads* ontologically connects the plant, human, and animal worlds. The interpenetration of these existences engenders the recognition that it is possible for human beings to act violently toward all these types of beings. In the case of plants, this manifests in the human ethical ideal of acting nonviolently toward them.

From this broad philosophical basis, a primary bifurcation between Jainism and Buddhism can be detected. Jain philosophy echoes the general approach of the Hindu scriptures and is a practical example of the systematic application of the philosophy of nonviolence in all dealings with the plant world. Jain philosophy is particularly significant for its prominent inclusion of nonhuman interests

within the sphere of human consideration. Jainism seeks affinity with plants, thus fostering nonviolence. Significantly it allows plants space to flourish.

In contrast, although Buddhist cosmology is not inherently hierarchical, in some Buddhist schools, a hierarchy has developed that privileges animals over plants. Certain schools of Buddhism have veered way from the recognition of plants as living, sentient beings, and have neglected them in questions of moral consideration. In this analysis, the work of Buddhist scholar Lambert Schmithausen is particularly important for pinpointing the source of this omission. For Schmithausen, plants have been backgrounded in Buddhist philosophy primarily because of the wish to avoid the explicit recognition of violence. This repressed recognition of violence done toward plants is a crucial point. Importantly, Chapter 4 introduces the idea that this process of philosophical devaluation is not confined to the West. From a position of ambiguity on plant violence, a number of Buddhist schools have developed zoocentric criteria for ethical inclusion and have placed plants outside the realm of sentient life.

Interestingly however, the Buddhist tradition also contains a very different philosophical approach toward plants, suggesting that from a plant point of view there is no single Buddhist tradition. Rather than positioning plants as inferior to animal life, scholars within East Asian Buddhism have sometimes come to regard plant life as superior both in capability and worth. This is an important position because it allows a discussion of the subtle turning points that have produced radically contrasting perceptions of plants within the same general metaphysical framework. Again, it is important to question intent. East Asian Buddhist texts demonstrate a more empathetic rendering of plant life because they directly attempt to expand upon the clear evidence for plant sentience. This is an example of an explicit turning away from the established dogma of inferiority. It is open to interpretation however, whether this direct attempt to turn toward other beings is also an attempt to relate with them using appropriate criteria and include them within the realm of human moral consideration.

While a more empathetic approach to plant life appears in East Asian Buddhism, studies on Indigenous knowledges demonstrate that perhaps there are more appropriate ways of *relating* with plants.⁴² Indeed it is my contention that as they are often directed at living life in appropriate relationships, Indigenous sources provide the most significant material to contrast with worldviews that seek to exclude plants. Drawing on the work of animist scholars Irving Hallowell, Nurit Bird-David, and Graham Harvey, Chapter 4 draws another important contrast. This is between Western backgrounding of plants and the Indigenous peoples who relate to plants as *other-than-human persons*.⁴³

Chapter 5 introduces the themes of personhood, flourishing, and kinship. From a basis that all beings are related, many Indigenous peoples regard plants as beings that possess awareness, intelligence, volition, and communication. Plants are regarded as beings that are capable of *flourishing* and of *being harmed*.⁴⁴

Plants are of course acknowledged as being different from human beings. They have different ways of going about their lives and have different needs from human beings. They deserve their own taxonomic category. However, there is no radical ontological schism between plants, animals, or humans. Plants are not zoocentrically dualised as inferior and are not placed at the bottom of a natural value-ordered hierarchy.

The autonomy of plants and their heterarchical relationship to us is recognized. Plants are regarded as kin, and are incorporated into general and specific kinship relationships—relationships of caring or solidarity, which are often “based on consubstantiality.”⁴⁵ This approach to plants is coupled with a strong recognition that plants *are* different to human beings.⁴⁶ This difference is most strongly expressed in the act of predation. In a similar way to the ancient Indian material, Indigenous peoples recognize that the act of using plants is often an act of violence. Unlike in the biblical and Greek materials, recognition of the necessity of violence does not negate the recognition of personhood. Instead, the necessity of eating other-than-human persons is accepted, but like in Indian religions, ways are sought to mitigate the damage done to other beings.

As Chapter 5 discusses, to place plants in the ontological category of persons is neither fanciful nor deluded. The inclusion of plants in relationships of care is based upon close observation of plant life history and the recognition of shared attributes between all beings. Again, intent is paramount. This is a deliberate structuring of relationships in a heterarchy rather than a hierarchy. It is recognition of connectedness in the face of alterity—what Deborah Bird Rose has termed the “indigenous ethic of connection.”⁴⁷ For plants at least, this contrasts sharply with what could be termed a Western ethic of exclusion.

One of the most important points in this text is that contrasting ways of understanding plant life can not be adequately split along easily demarcated lines. As has been noted, the case study of Buddhism shows that we must avoid constructing East-West dualisms. Similarly, Chapter 6 shows that an Indigenous-Western dualism is also flawed. An important component of this chapter is its recognition of the way in which contemporary European Pagans are also developing a more inclusive, more kinship based, less zoocentric relationship with plants. As seen in the Buddhism case study, this is another intentional turning away from zoocentrism, and has been inspired by engagement with Indigenous knowledges as well as ancient pagan sources.

Some of these ancient pagan sources are discussed in Chapter 6. The main argument in this chapter is that the fragmentary evidence from pre-Christian/Aristotelian Europe also depicts recognition of substantial kinship links between all beings in the biosphere. Using insights from contemporary animist scholarship, it is apparent that many pagan sources treat plants as fundamentally autonomous, volitional, communicative, relational beings. The notions of plant personhood and human-plant kinship are expressed in stories, poems,

and myths. Common expressions of personhood and kinship are metamorphoses from human form to plant form. Unlike in the streams of thought that supplanted paganism, violence toward plants is acknowledged in several pagan texts. Chapter 6 puts forward the possibility that Western culture may have once had a more appropriate way of relating to plants than that provided by zoocentric philosophies.

Perhaps the most interesting finding of this study is that recognition of many of the attributes of plant personhood and human-plant kinship is not restricted to the domain of religious studies. Chapter 7 argues that since the early nineteenth century, scientific evidence has steadily accrued which directly contradicts the hierarchy of nature. From Charles Darwin's early experimental work on the sensitive plant *Mimosa pudica* L., over a century of scientific observations contradict the notion that plants are passive, insensitive beings. Through nastic movements and tropic growth responses, plants have been shown for decades to display sensitive, purposeful, volitional behavior. Darwin's most important work *On the Origin of Species* also implicitly contains the idea that humans and plants are indeed related by descent.

Darwin's experimental work has also provided the platform for the development of the field of plant signalling. This area of plant science is outlined in Chapter 7 and is particularly interesting because it demonstrates that plants engage in abundant communication, both within their own bodies and with the beings in their environment. By evaluating plants on their own terms, it has also led to the development of the groundbreaking concept of *plant intelligence*. Plant intelligence's most vocal proponent, Tony Trewavas, argues that plants are increasingly being shown to demonstrate more sophisticated aspects of mentality such as reasoning and choice. Instead of displaying this through movement, plants differ from animals by using phenotypic plasticity to express behavior.

Another exciting development in contemporary scientific research is the accrual of evidence demonstrating that plants have the physiology to support sophisticated mental activity. As Darwin first discovered, there is increasing evidence that this intelligent behavior is directed by a multitude of brain like entities known as meristems. The work of František Baluška, Stefano Mancuso, and others in the nascent field of *plant neurobiology* is putting forward the notion that plants have sophisticated, decentralized neurosensory systems. Buried within contemporary plant science literature is a growing awareness that plant behavior has many of the hallmarks of mentality. Such pioneering scientific work in many ways echoes the recognition of the attributes of sentience and personhood that have long been pinpointed in Indian religious thought and Indigenous knowledge systems.

Chapter 7 takes a systems approach to matters of mind, avoiding Cartesian dualisms in order to describe how plants and humans share a basic, ontological reality as perceptive, aware, autonomous, self-governed, and intelligent beings.

Like other living beings, plants actively live and seek to flourish. They are self organized and self created as a result of interactions with their environment.⁴⁸

The emergence of this evidence within a culture dominated by the findings of science adds great weight to the claim that our general perception and treatment of plants is both inaccurate and inappropriate. It also indicates the appropriateness of other philosophical traditions that relate to plants in inclusive, nonhierarchical, dialogical ways. In the words of Andrew Brennan, it provides “a context within which an attitude of care about natural things makes sense.”⁴⁹

The sceptic can of course ignore this accumulated knowledge and continue to exclude plants from moral consideration, but this option comes loaded with environmental consequences. Moreover, with an awareness that plants are autonomous subjects, continued instrumental exclusion must be viewed as deliberate disrespect. As Plumwood eloquently states, “We do them an injustice when we treat them as less than they are, destroy them without compunction, see them as nothing more than potential lumber, woodchips or fuel for our needs. . . .”⁵⁰

HUMAN-PLANT RELATIONSHIPS OF CARE AND CONSIDERATION?

With guidance from animistic cultures and the evidence from contemporary plant sciences, the latter stages of this study argues for recognizing plants as subjects deserving of respect as other-than-human persons. It advocates including plants within human ethical awareness with a view to Callicott’s reminder that “an ethic is never perfectly realized on a collective scale and very rarely on an individual scale. An ethic constitutes, rather, an ideal of human behavior.”⁵¹ In the pages of this work, this ideal human behavior is grounded in a particular understanding of morality. Although there are many understandings of morality, most share the notion of right conduct toward others. In view of our Earthly kinship with both human and *other-than-human* persons and the interactions between these persons which allows life on Earth to thrive, discussions of ethics in this work are rooted in the recognition of these relationships.⁵² Moral consideration in this respect is simply considering the flourishing of the other beings in our lives. In an ecological context, moral action is enacted respect and responsibility for the well-being of the others with whom we share the Earth.

The concluding chapter examines the implications of a new awareness of plant life and the development of a Western idea of plant personhood. Taking the findings of this study to their logical conclusion, the recognition of plants as autonomous, perceptive, intelligent beings must filter into our dealings with the plant world. Maintaining purely instrumental relationships with plants no longer fits the evidence that we have of plant attributes, characteristics, and life

histories—and the interconnectedness of life on Earth. From another angle, conserving the natural environment is no longer sufficiently served by an anthropocentric account nor a zoocentric account of moral consideration. A stronger account of moral consideration centered on the other-than-human rather than human is needed in order to both evaluate and prevent the occurrence of “environmentally destructive human action that has little or no [immediate] negative effect on human beings.”⁵³ In contrast with the focus of animal rights theory, in a biosphere dominated by plants, this turning toward the other-than-human cannot be at the implicit exclusion of plants from the class of morally considerable beings.

The concluding chapter discusses how this developed idea of plant personhood could become manifest in human moral behavior toward the plant kingdom and nature as a whole. Under the influence of Erazim Kohák, and the ethical theories of Zygmunt Bauman, the purpose of the concluding chapter is not to construct a list of proofs for moral consideration nor a system of ethical rules toward plants. Rather, its purpose is to discuss the possibilities for including plants within the realm of moral consideration; for the sake of individual plants and plant species and for those animals and humans whose lives depend on their survival.⁵⁴

Purely instrumental relationships with plants are found to be ecologically destructive. The backgrounding of plants is dangerous because it severs opportunities for dialogical interaction between humans and the environments in which they live. Lacking in meaningful relationships of kinship, care, and solidarity, we risk complete human ecological dislocation. As Plumwood astutely observes, by distancing ourselves from the beings around us “we not only lose the ability to empathize and to see the non-human sphere in ethical terms, but also . . . get a false sense of our own character and location that includes an illusory sense of autonomy.”⁵⁵

By distancing ourselves from plants and denying their autonomy, we jeopardize a true sense of human identity, situatedness, and responsibility. Only in the company of others do we arrive at the true sense of our own personhood and ecological identity.⁵⁶ The risk we run by ignoring the personhood of plants is losing sight of the knowledge that we humans are dependent ecological beings. We risk the complete severance of our connections with the other beings in the natural world—a process which only serves to strengthen and deepen our capacity for destructive ecological behavior. This is humanity’s worst type of violence.⁵⁷

The concluding chapter also argues that one way to work toward restoring care-based human-plant relationships is through ecological restoration. With a revolutionised understanding of plants, restoring plant habitats can be a powerful and direct method for engaging in dialogue with plants as individuals, species, and communities. Here the idea of dialogue is based on the thinking of