

Ecology and Spirituality:

Principles of Ecology and Cultural Ecology



Overview

- **What is ecology?**
- **Cultural ecologies and interpretation.**
 - Within ecology (paradigms)
 - More broadly.
- **Ecological principles and interpretation.**
 - Systems - The Biosphere
 - Processes - Succession
 - Relationships - Trophic Cascades

What is Ecology?

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- Broadly a positivistic science.



Cultural Ecologies

- “Ecology is the study of the workings of ecosystems, of the behavioral interdependences of different kinds of organisms with respect to one another and to their non-biotic environment. *Cultural ecology* is the study of the role of culture as a dynamic component of any ecosystem of which [humans are] a part” (Frake, 1962, p. 53).



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- What about popular culture interpretations of ecology? - e.g. as represented in films, media, or in different contexts such as New Age spiritualities, etc.



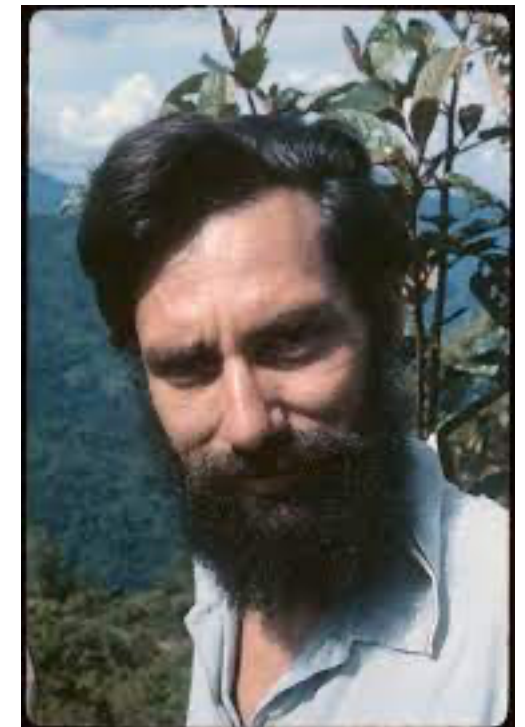
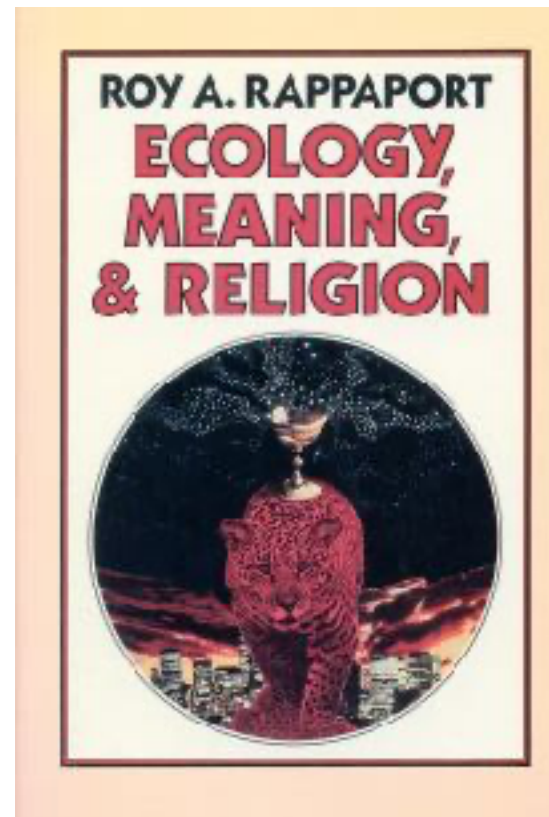
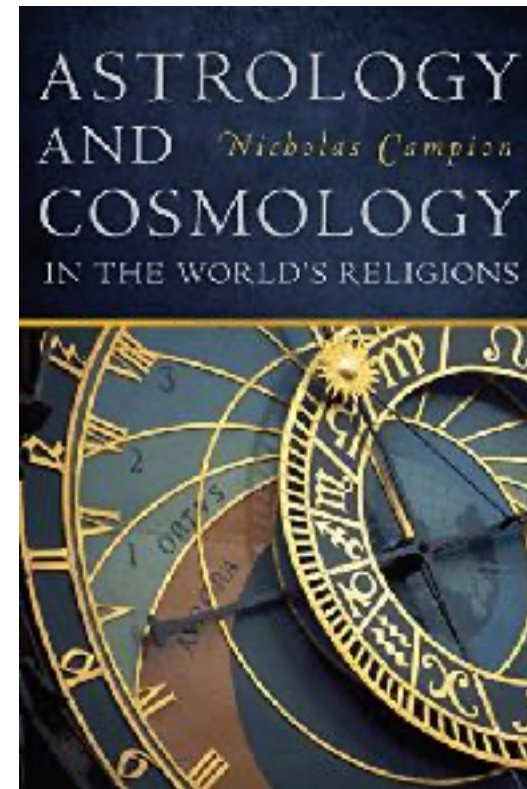
Cultural Ecologies

- “Cultural ecology [...] is a legitimate field of anthropological interests in its own right, as legitimate as the study of social systems which has so absorbed the efforts of many of us. If the social system be envisioned as a network of relationships among persons of a social community, then the ecological system is a network of relationships between man, the other organisms of his biotic Community, and the constituents of his physical environment. In both cases the net is woven of cultural threads, and the two networks are, of course, interconnected at many points” (Frake, 1962, p. 54)



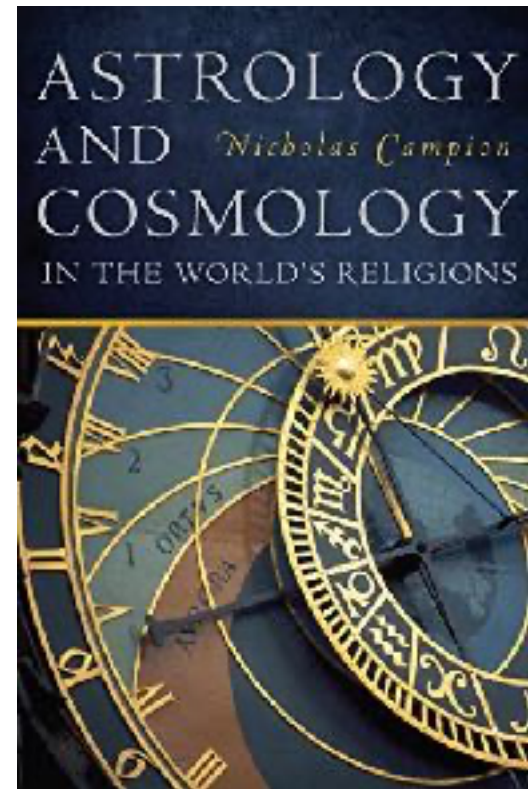
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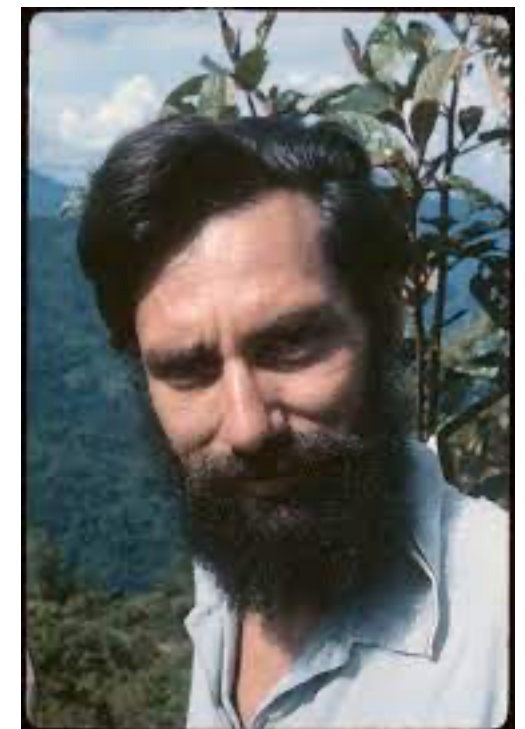
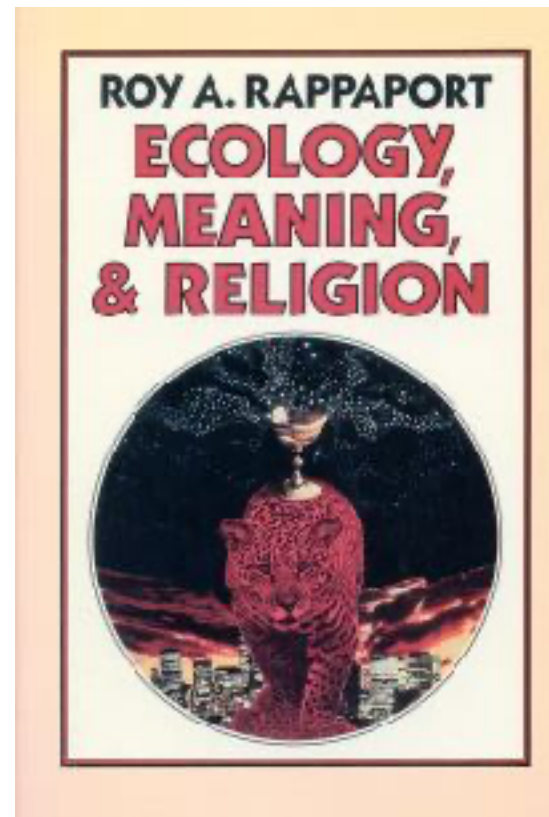
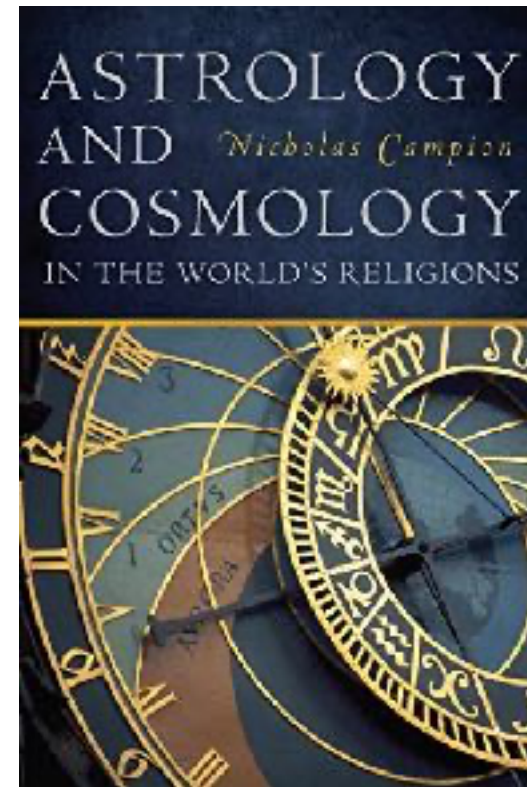
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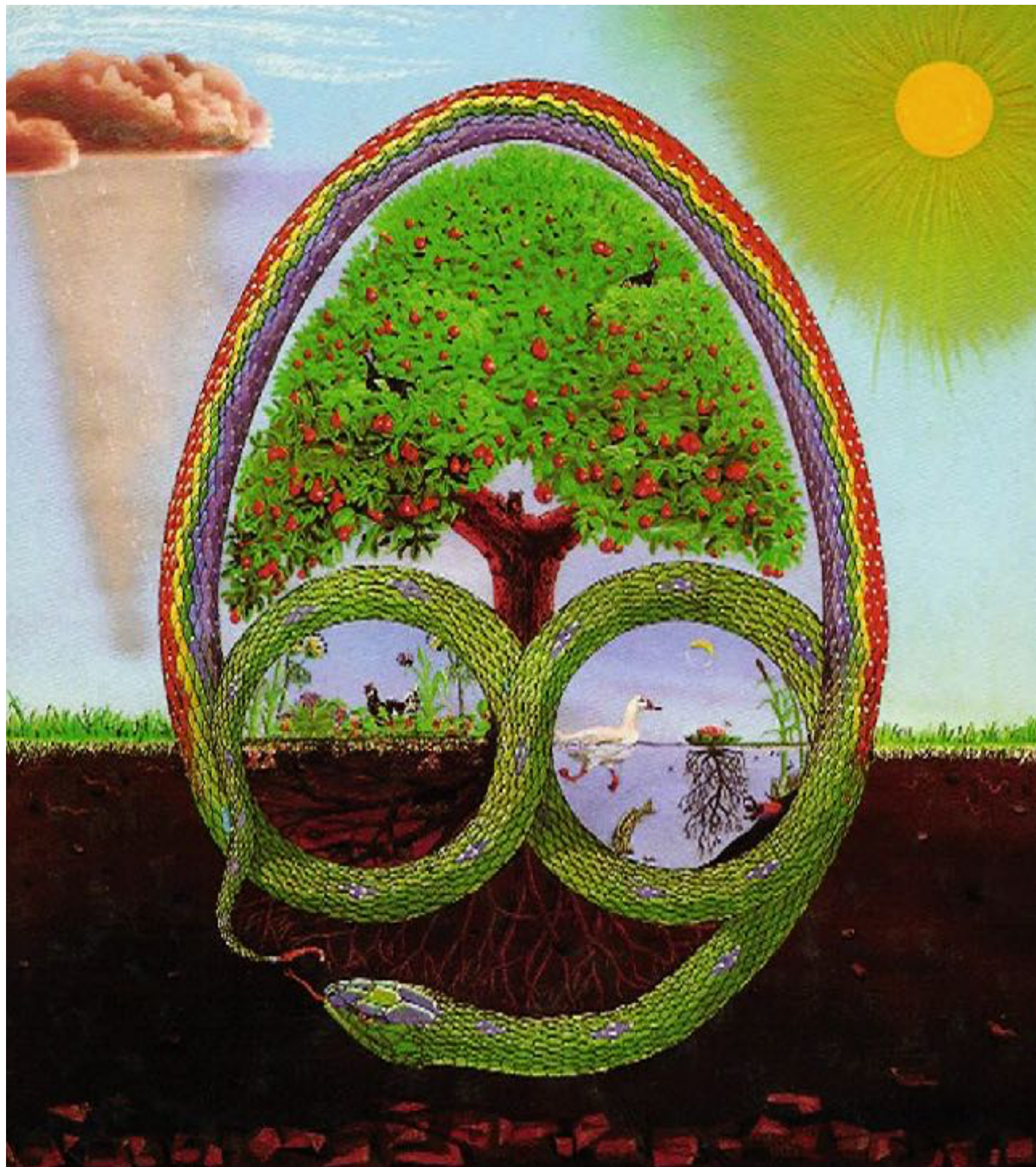
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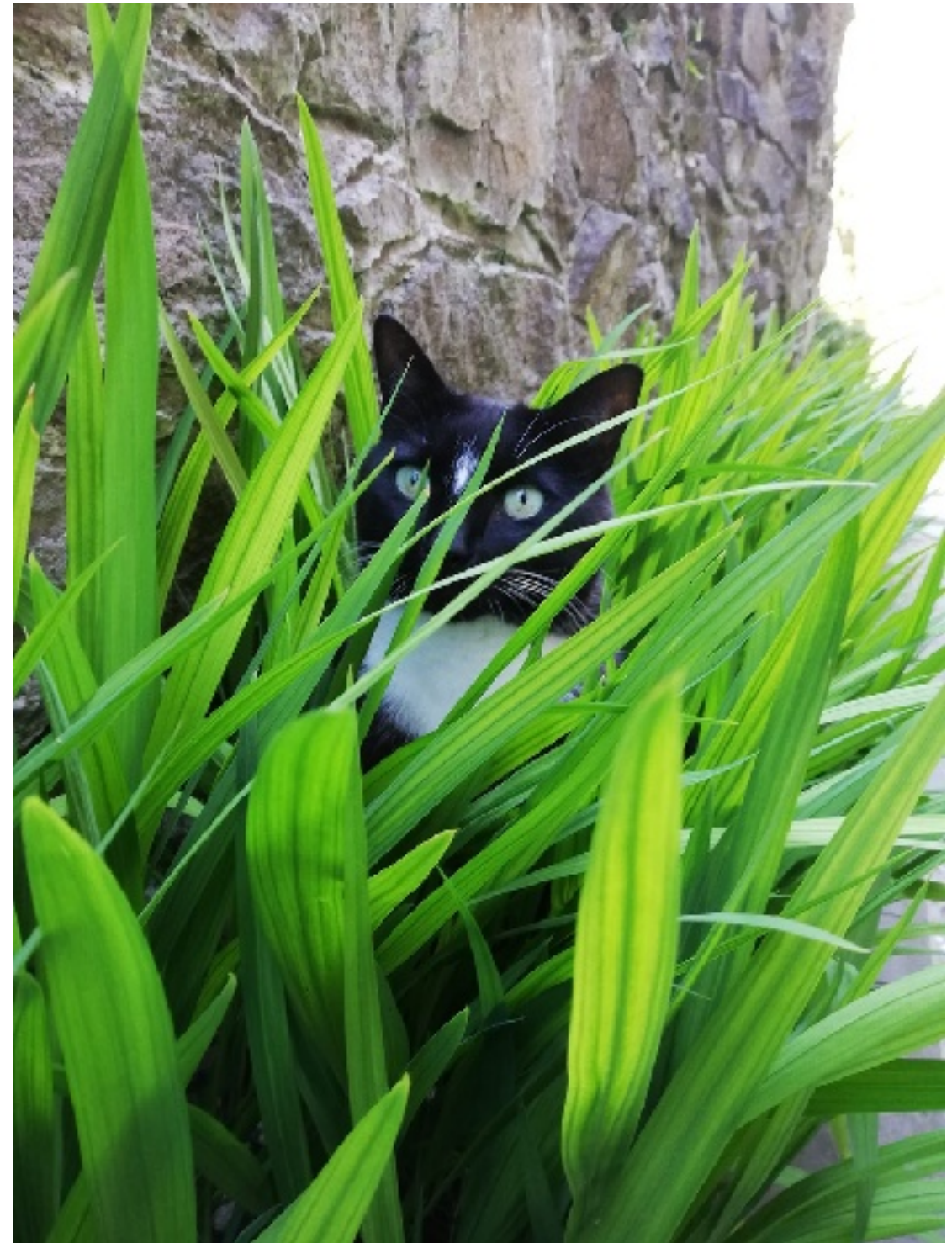
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- The ways that we position ourselves in relation to the world around us have "huge significance for almost every aspect of human behaviour (Campion, 2012, p. 10).
- "Nature is seen by humans through a screen of beliefs, knowledge, and purposes, and it is in terms of their images of nature, rather than of the 'actual structure' of nature, that they act. Yet it is upon nature itself that they do act, and it is nature itself that acts upon them, nurturing or destroying them" (Rappaport, 1979, p. 97).





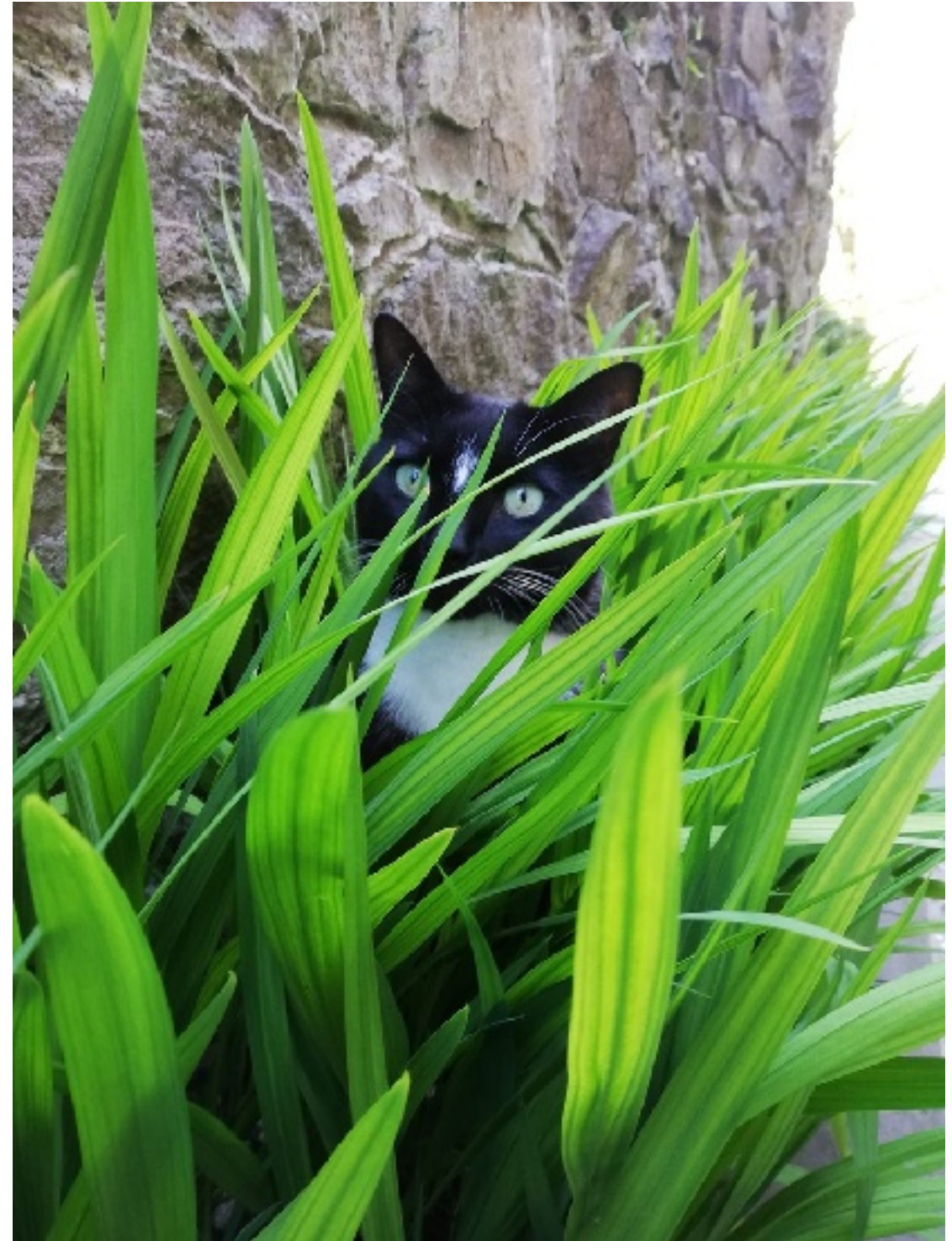
Problematic Interpretations

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- Eugenics, social darwinism, etc. can all be understood as cultural interpretations of ecological science.



Cultures within Ecological Science

- In their paper on the sociology of ecological science, Foster & Clark (2008) delineate a tension early in the development of the field between those researchers who assumed an **organicism**, holistic and teleological interpretation of ecosystem development, and those who assumed a materialist, **mechanistic**, systems view.



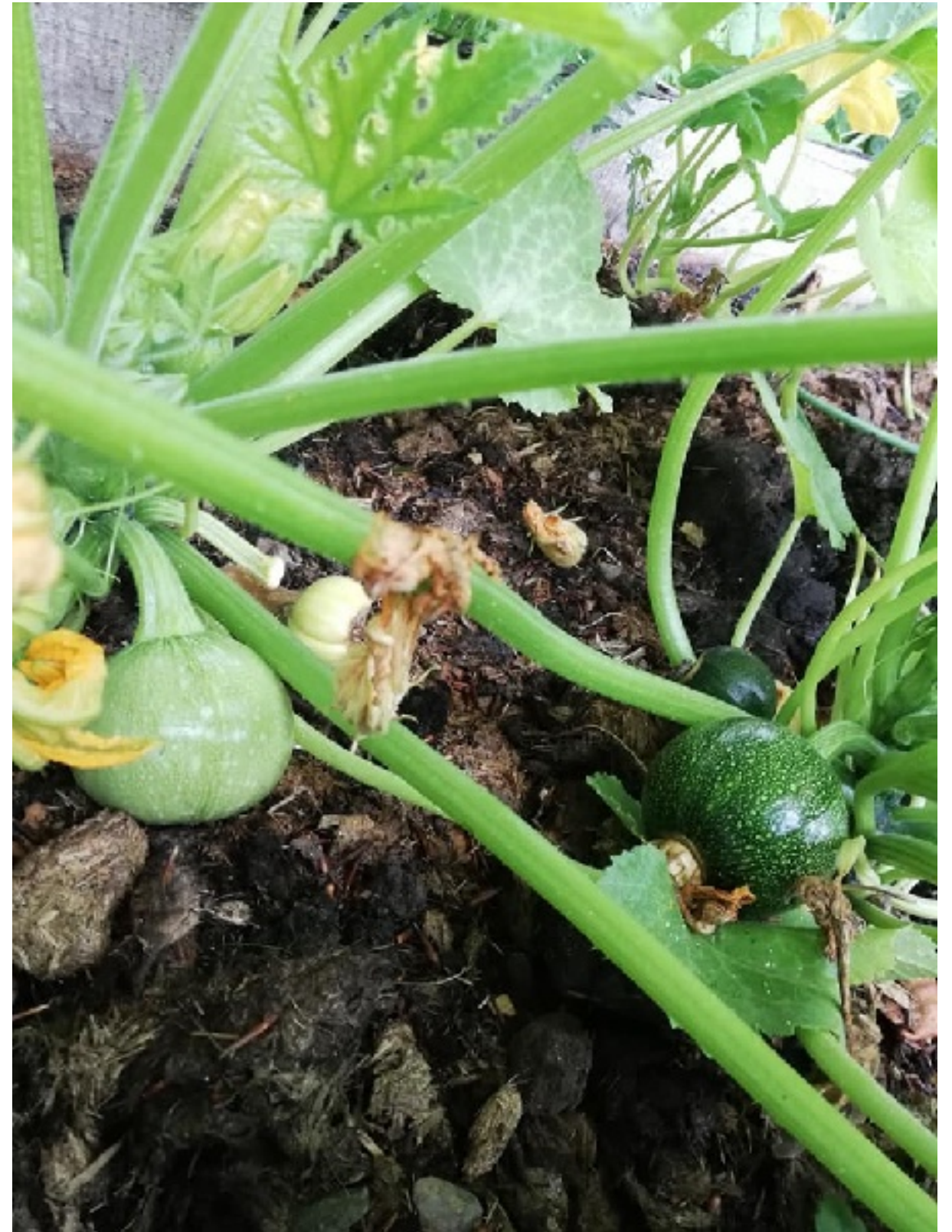
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- This is known as the '**holism-reductionism**' debate.



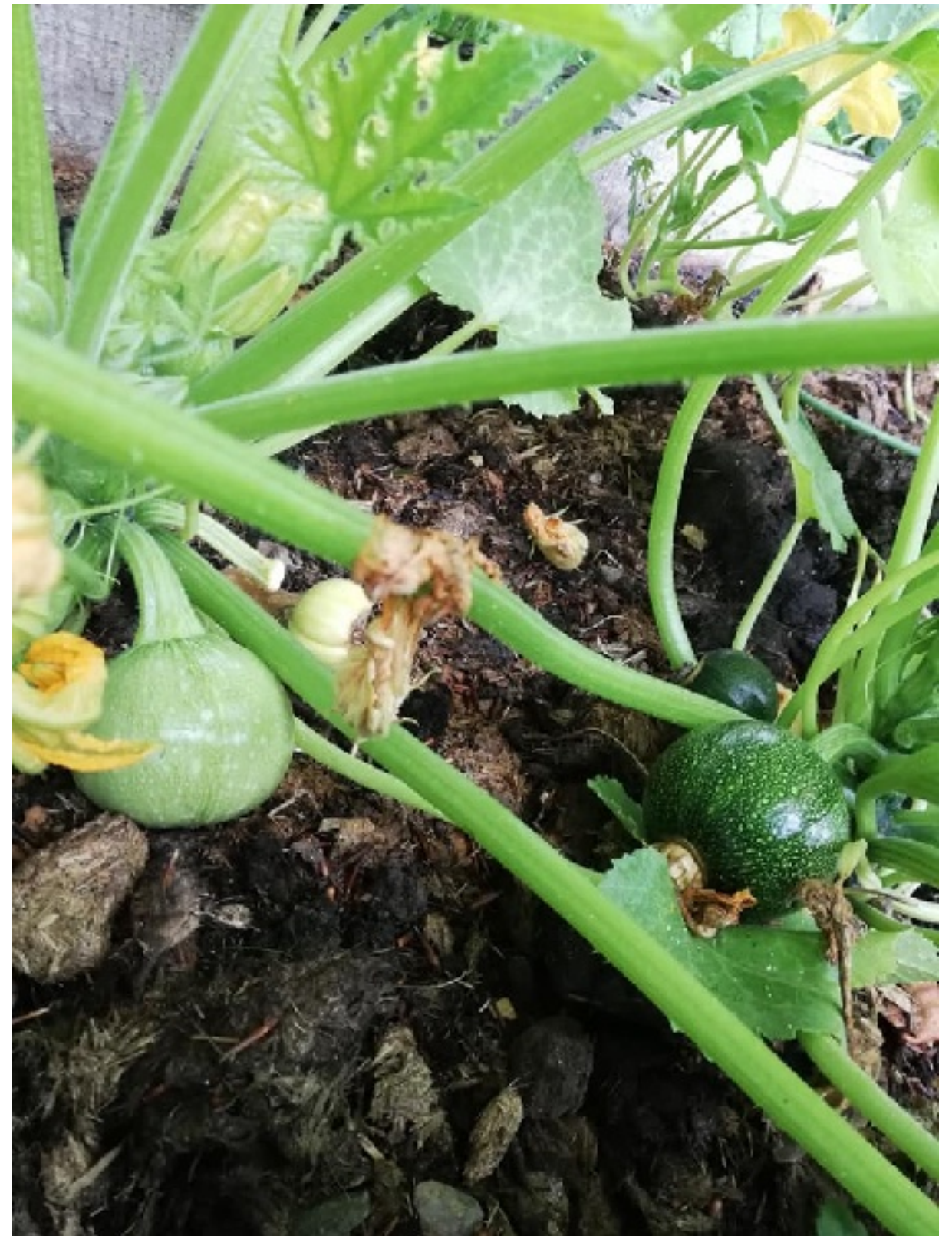
Agriculture and Horticulture

- Farming and gardening are also manifestations of cultural ecology.



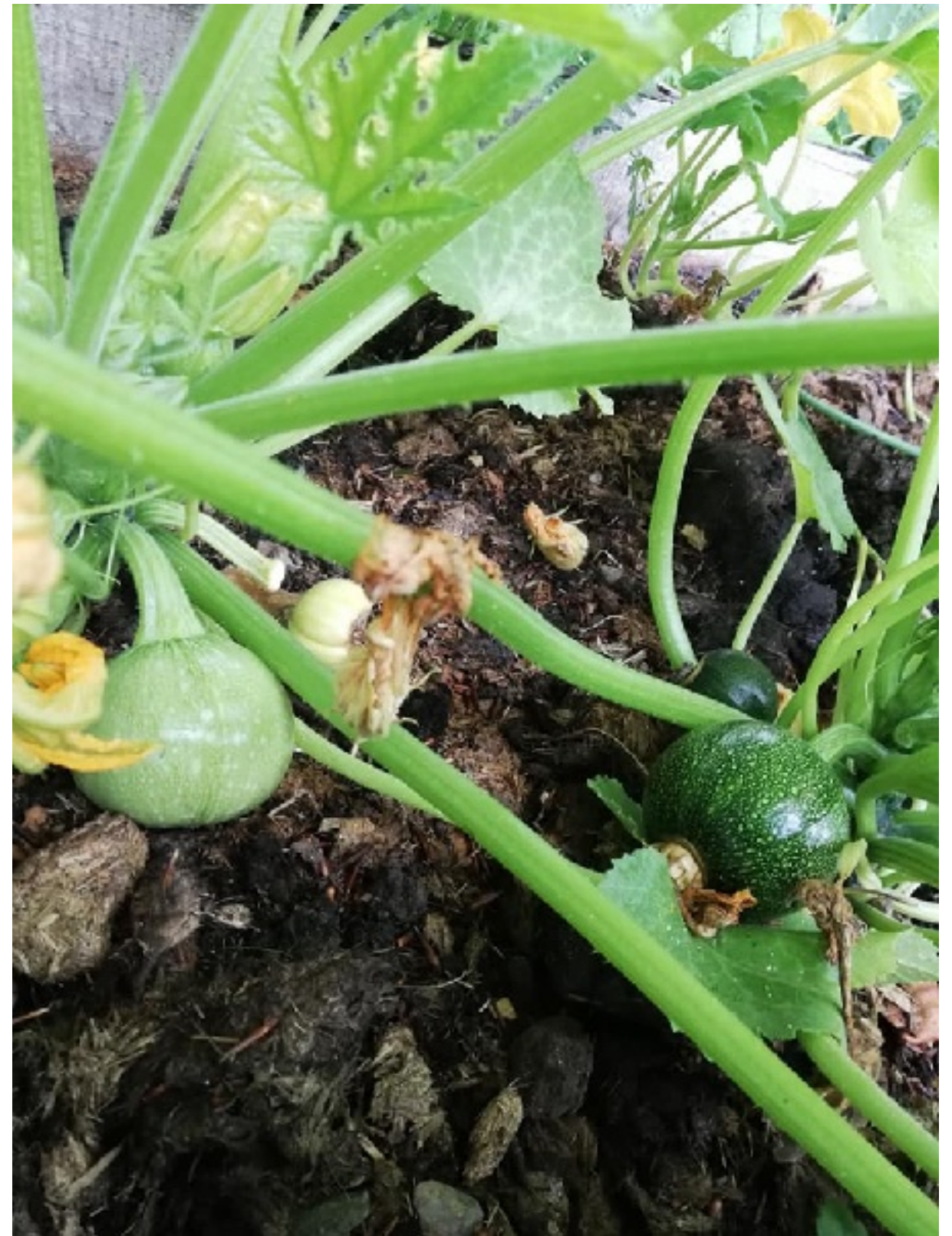
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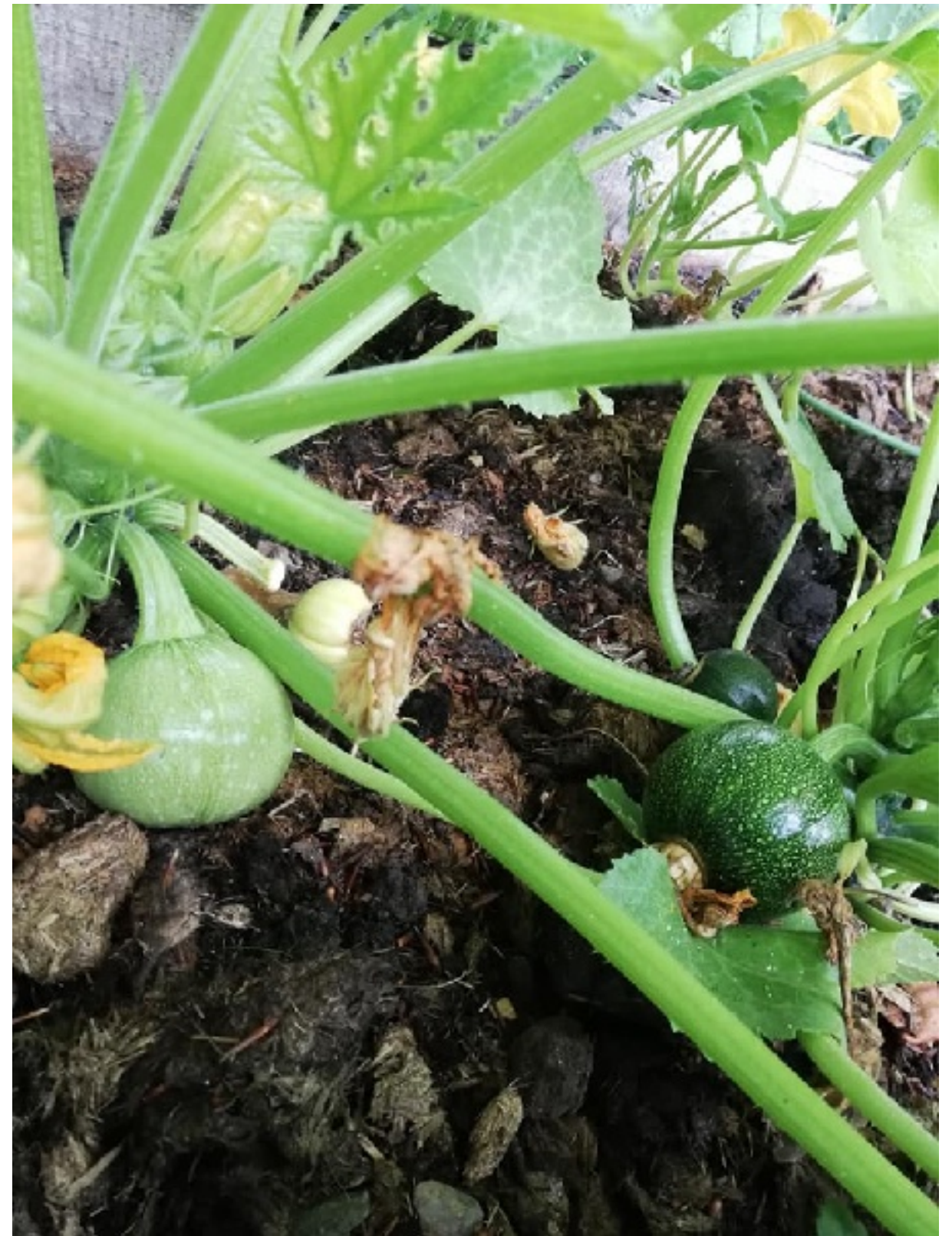
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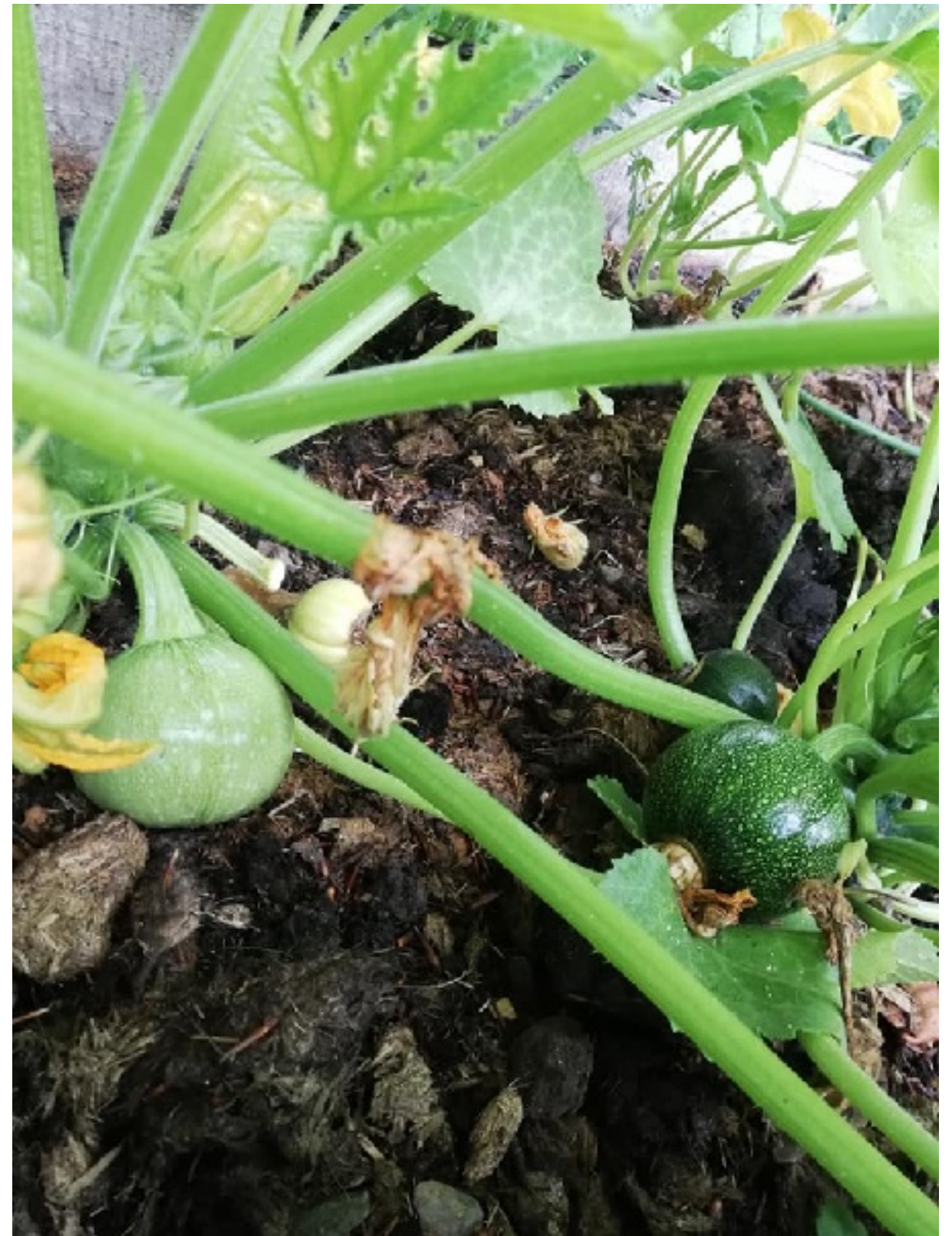
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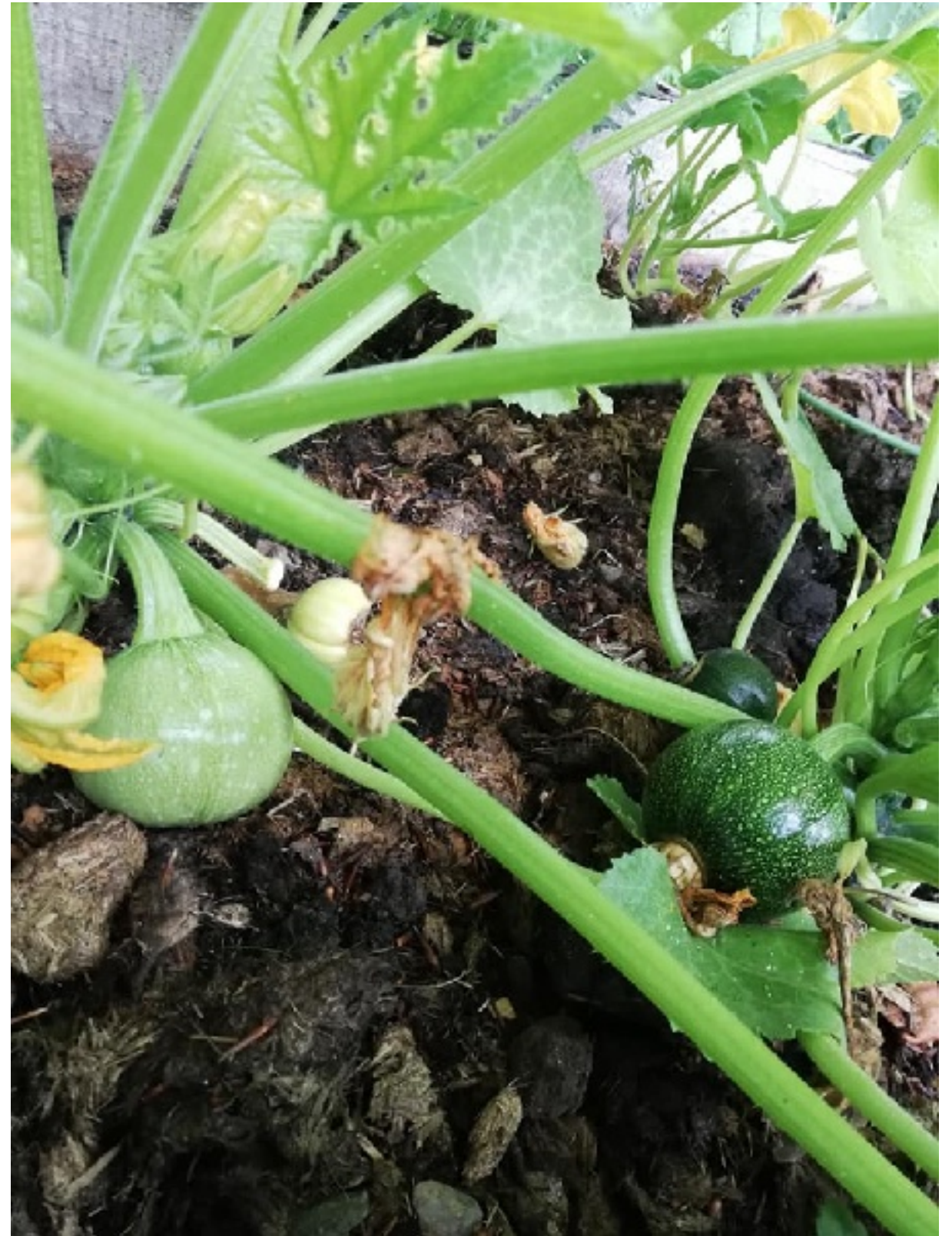
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- See also Navajo ethno-agriculture project - <https://navajofarming.org>



Ecological Principles

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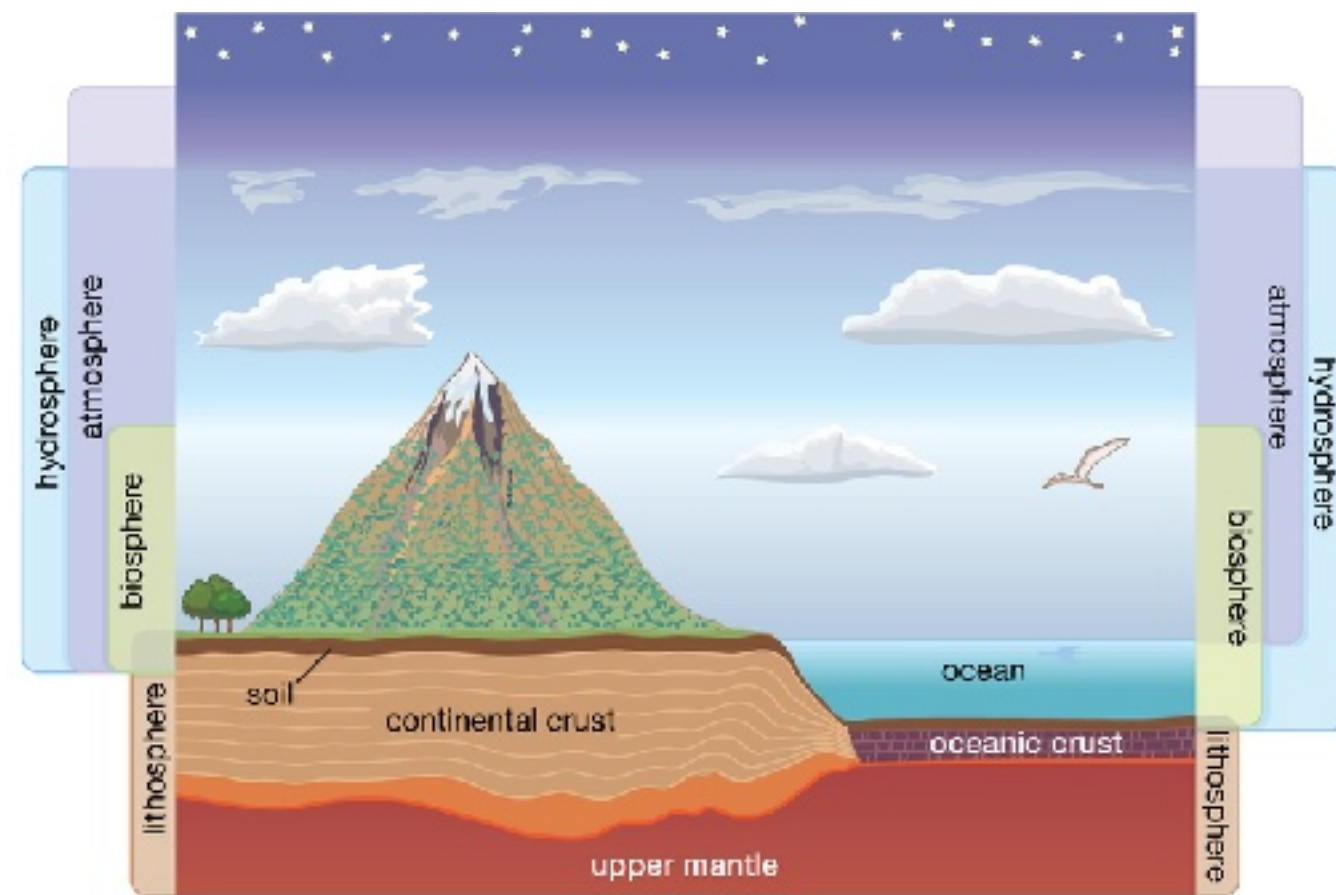
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- Ecosystems are all about interactions between living organisms (e.g. plants and animals), and between **living organisms** and the **physical environment** (e.g. plants and sunlight).
- All of the living organisms on Earth, including plants, animals, bacteria, fungi and so on can be referred to as the **biosphere**.



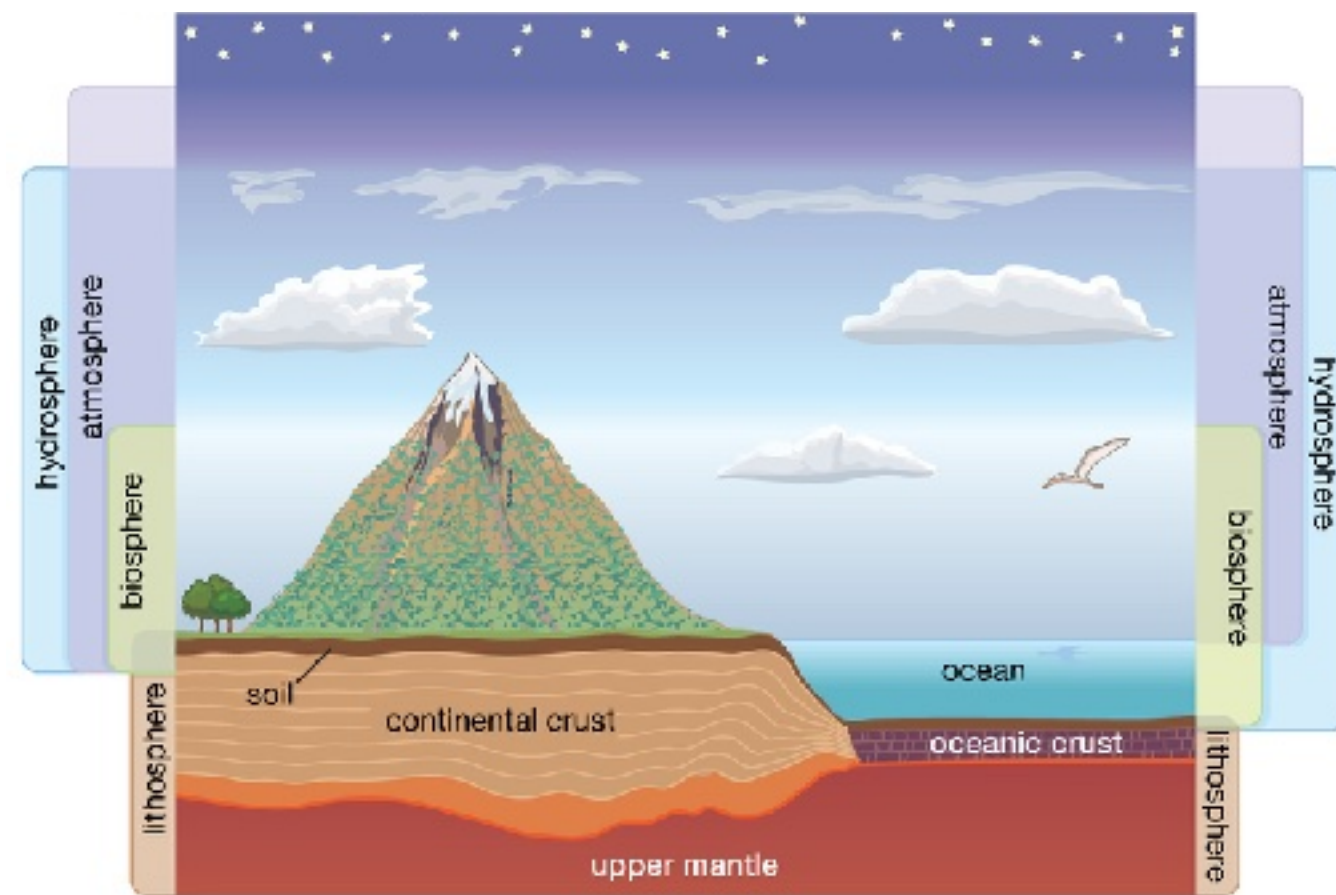
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- The biosphere is constantly interacting with the non-living components of the Earth, including the **atmosphere** (gases in the air), the **hydrosphere** (the water cycle) and the **lithosphere** (rocks and minerals).



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- Succession is the term used to refer to the way that ecosystems develop over time.
- Beginning with an area of land devoid of any plant species, specially adapted plants (known as **pioneer species**) colonise bare ground and start the process of transforming the environment to support other species.



Process - Succession

- Eugene Odum defines succession as referring to three key parameters:

“(i) It is an orderly process of community development that is reasonably directional ... (ii) It results from modification of the physical environment by the community; that is, succession is community-controlled even though the physical environment determines the pattern, the rate of change, and often sets limits as to how far development can go. (iii) It culminates in a stabilized ecosystem in which maximum biomass ... and symbiotic function between organisms are maintained per unit of available energy flow.”

(Odum, 1966, p. 262).



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- Succession works as plant species change the structure and nutrient content of soils.



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- **Primary succession** refers to the series of community changes which occur in an entirely new habitat which has never been colonised before. For example, a newly quarried rock face or sand dunes.

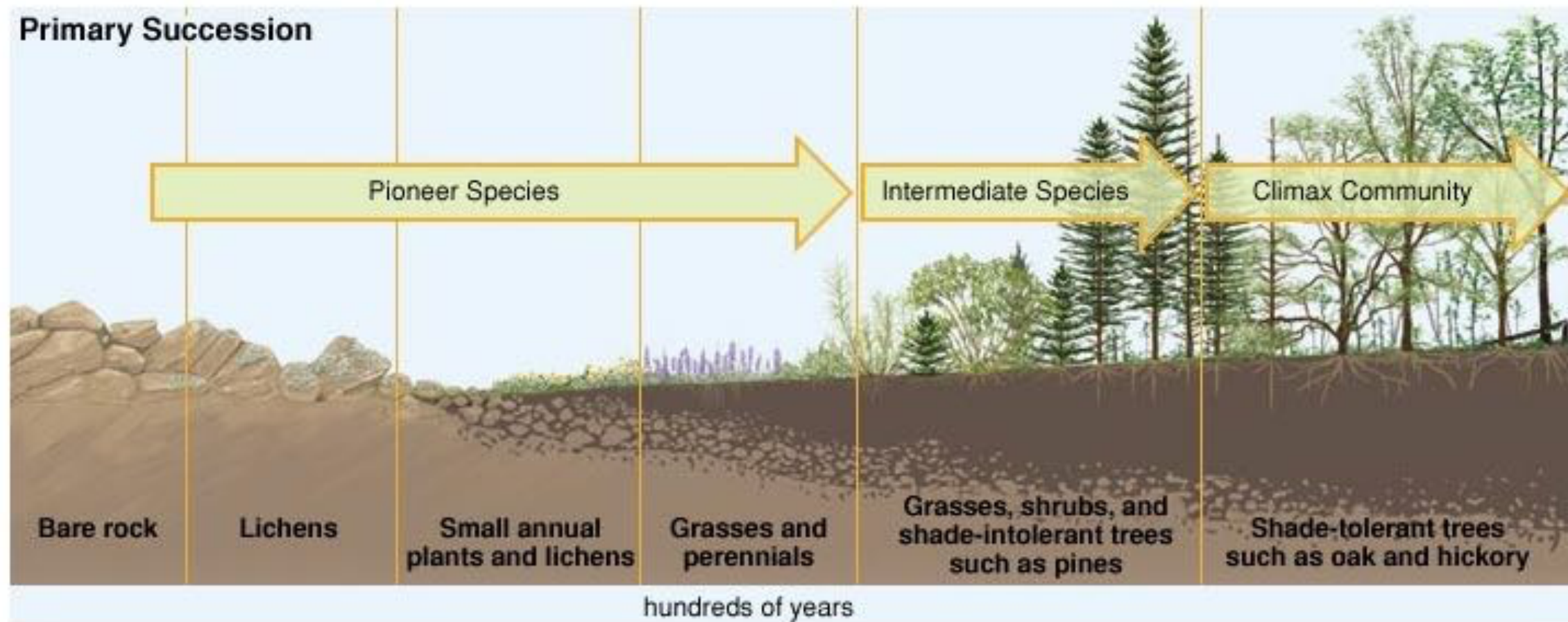


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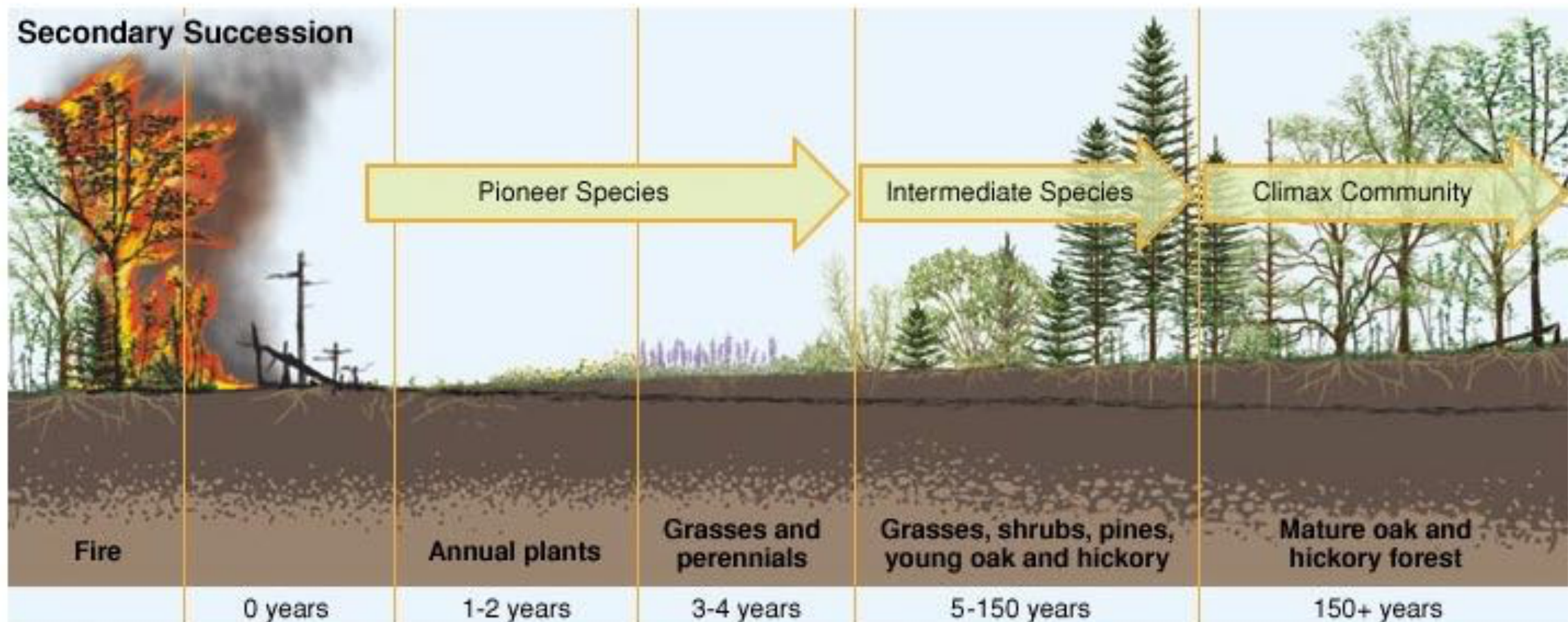
- **Primary succession** refers to the series of community changes which occur in an entirely new habitat which has never been colonised before. For example, a newly quarried rock face or sand dunes.
- **Secondary succession** is the series of community changes which take place on a previously colonised, but disturbed or damaged habitat. For example, after felling trees in a woodland, land clearance, or fire.



Primary Succession

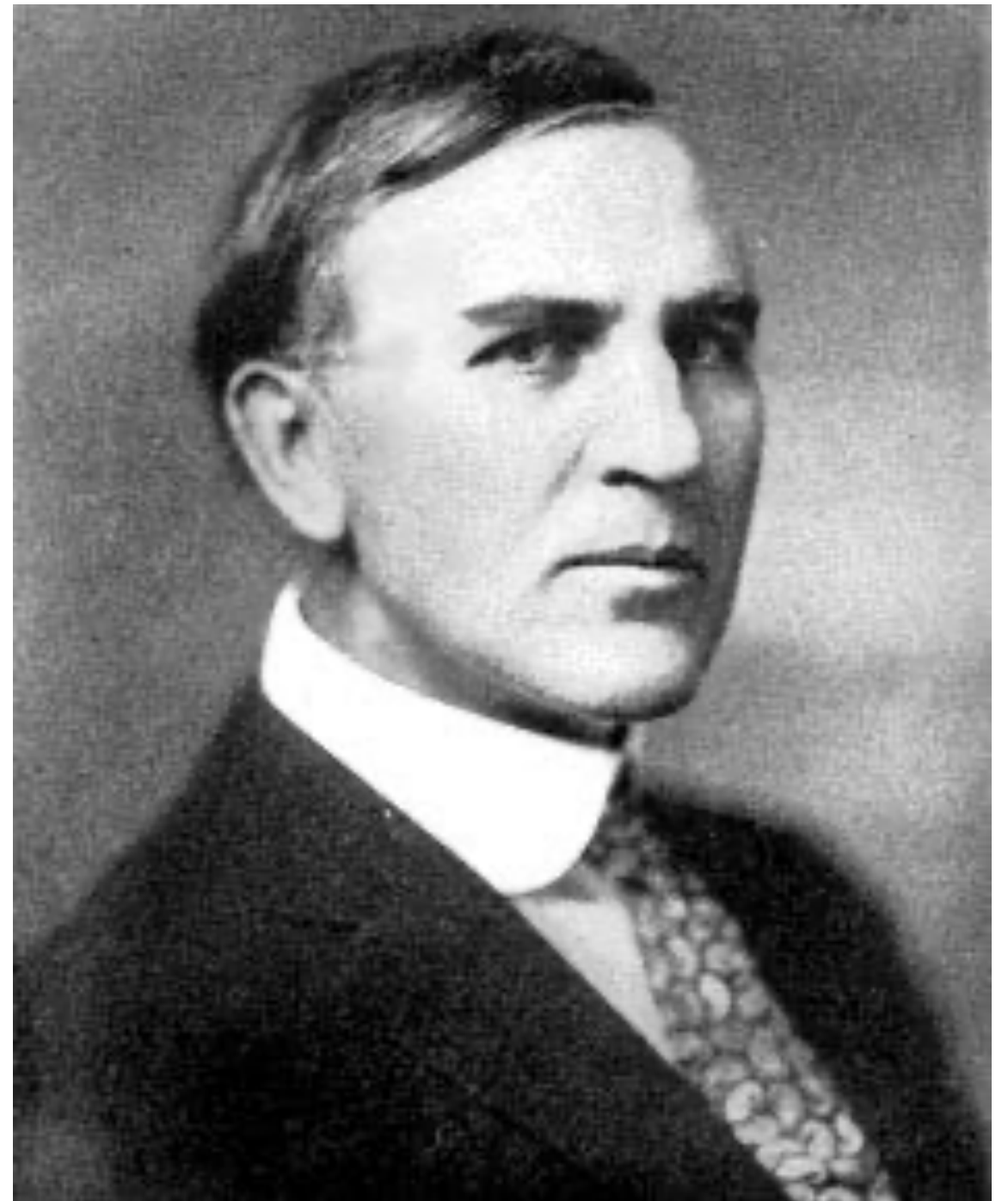


Secondary Succession



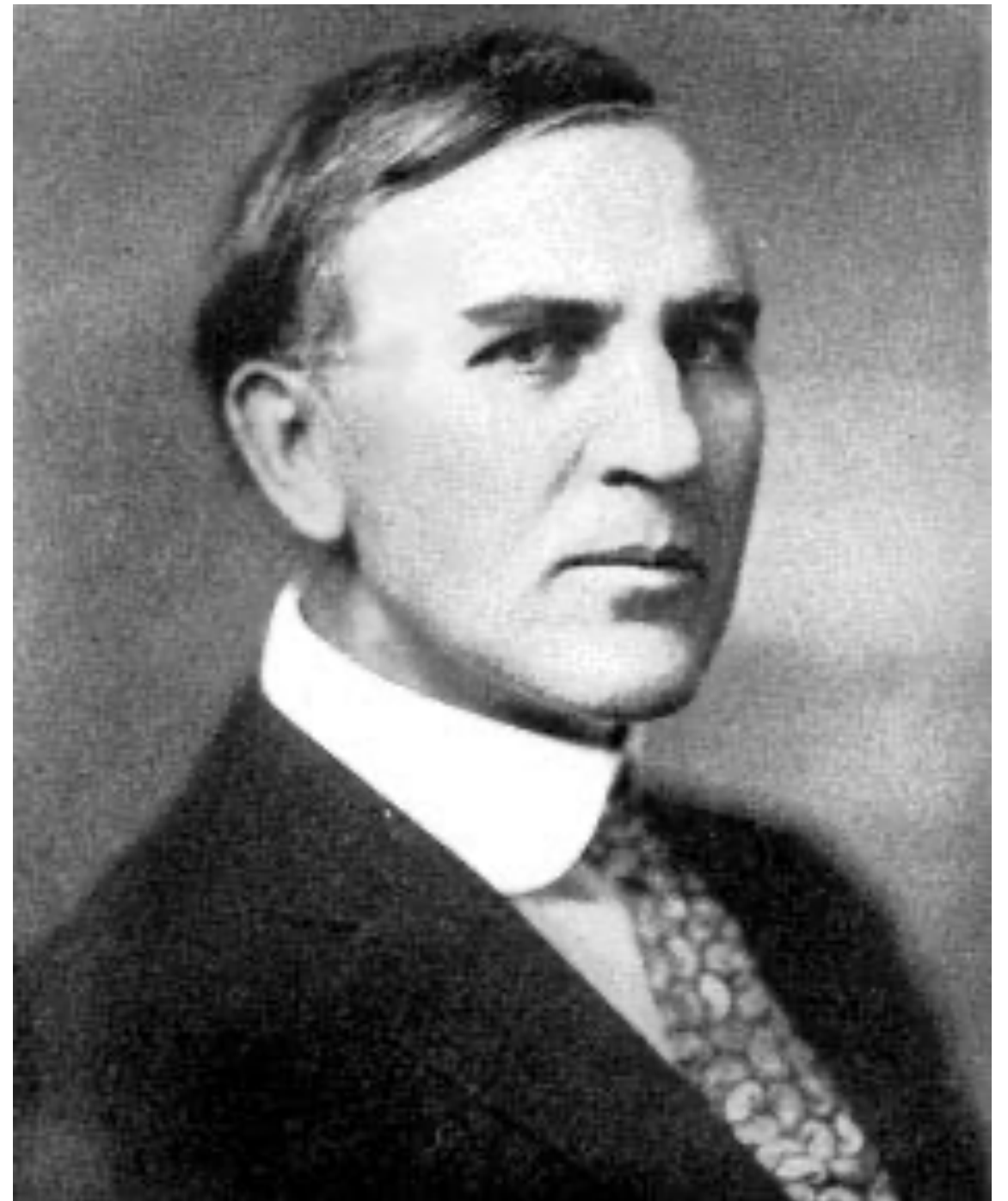
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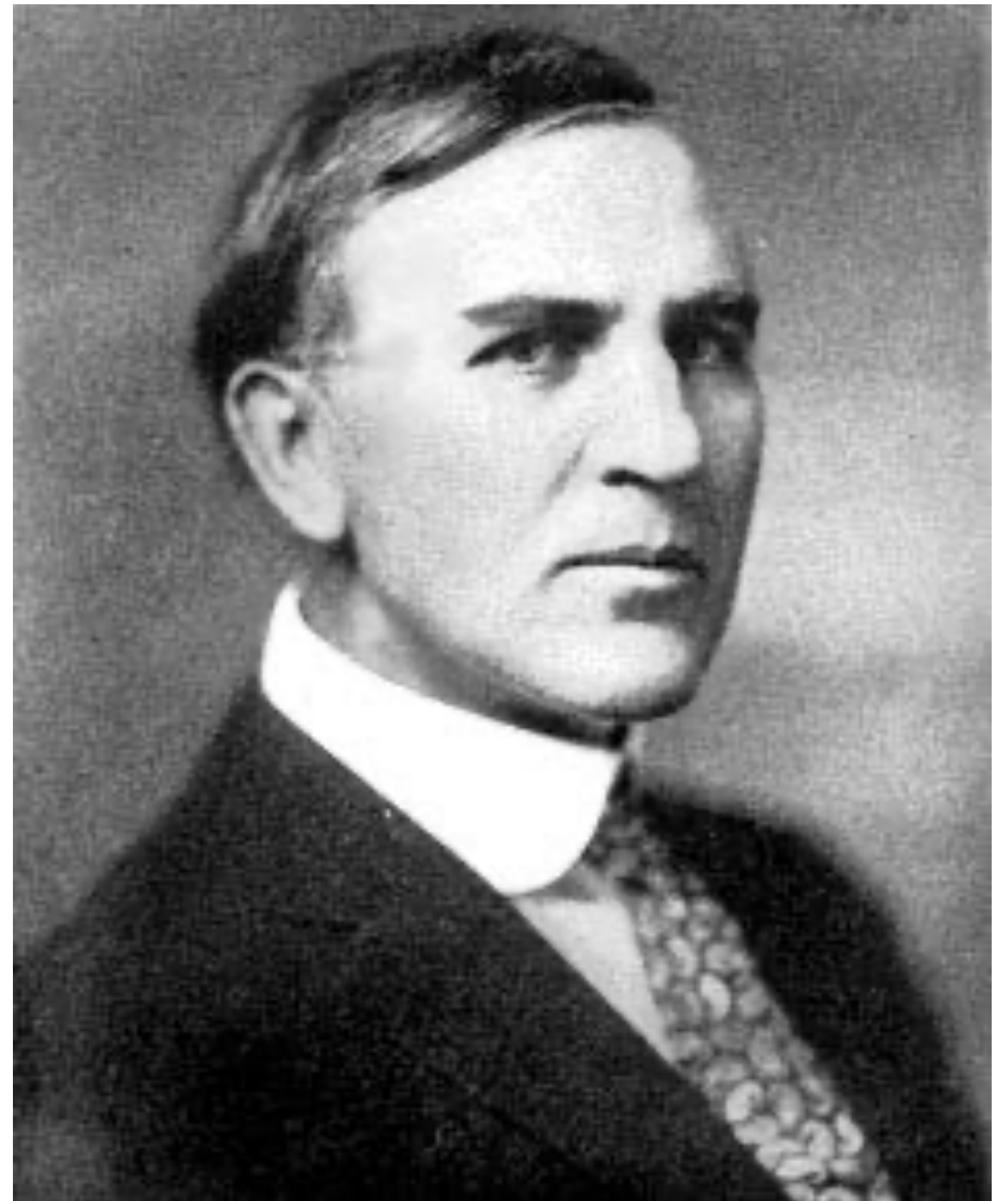
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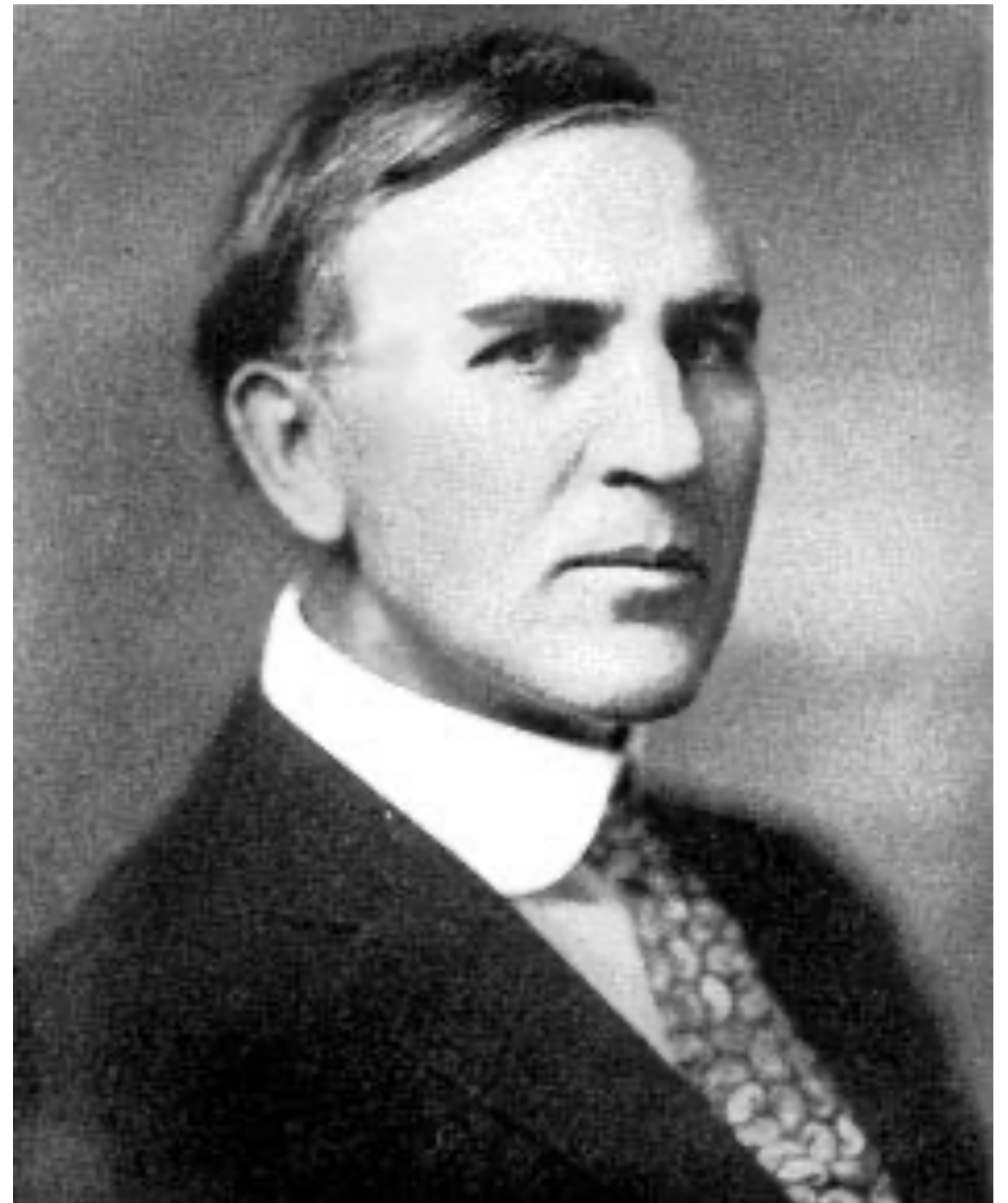
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- This kind of approach, however, is frequently rejected.



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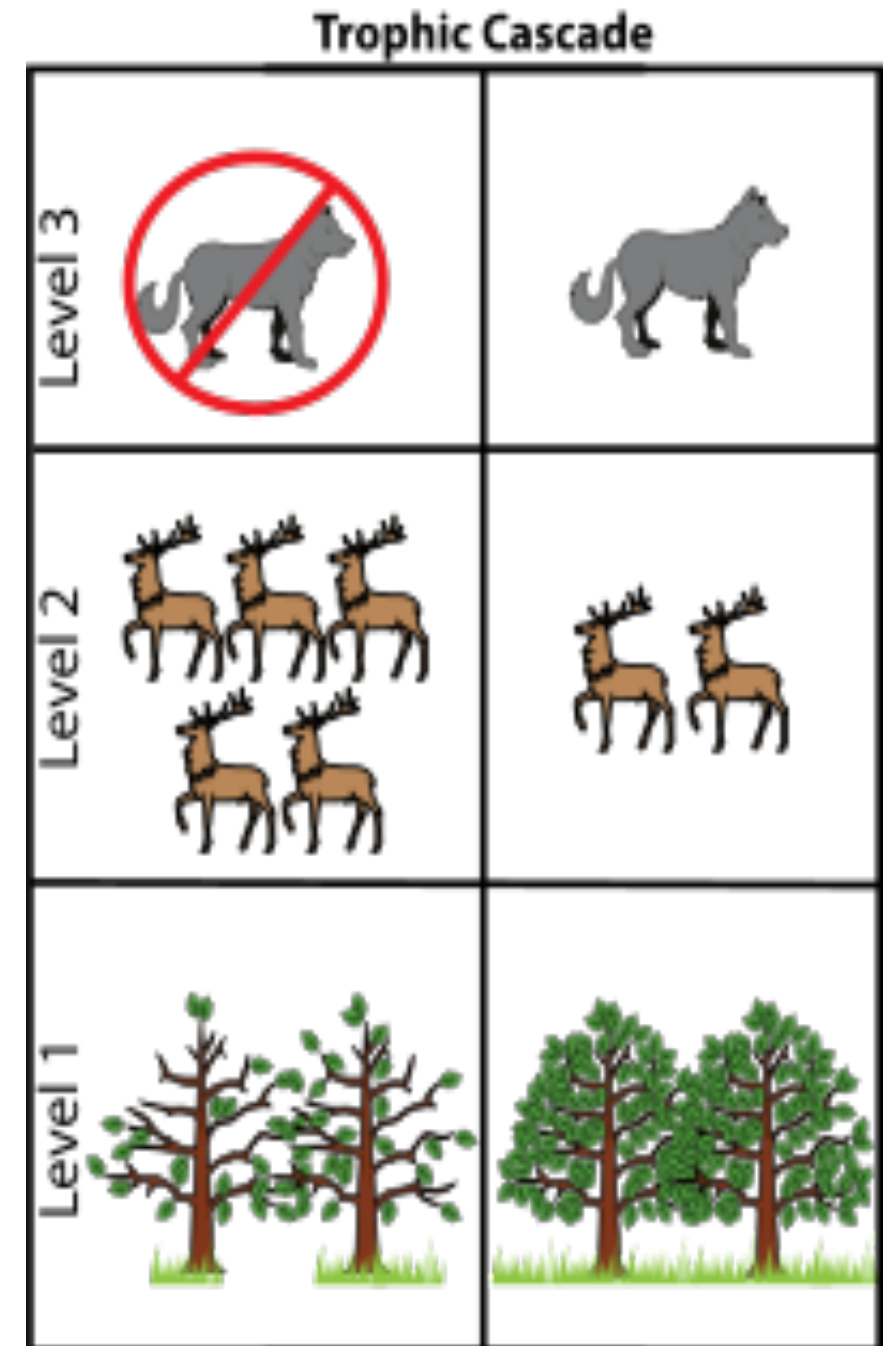
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- Robert Paine's research on sea urchins, however, suggested that ecosystems are also maintained from the **top-down**, by **predators**. Predators feed on herbivores, who feed on plants.



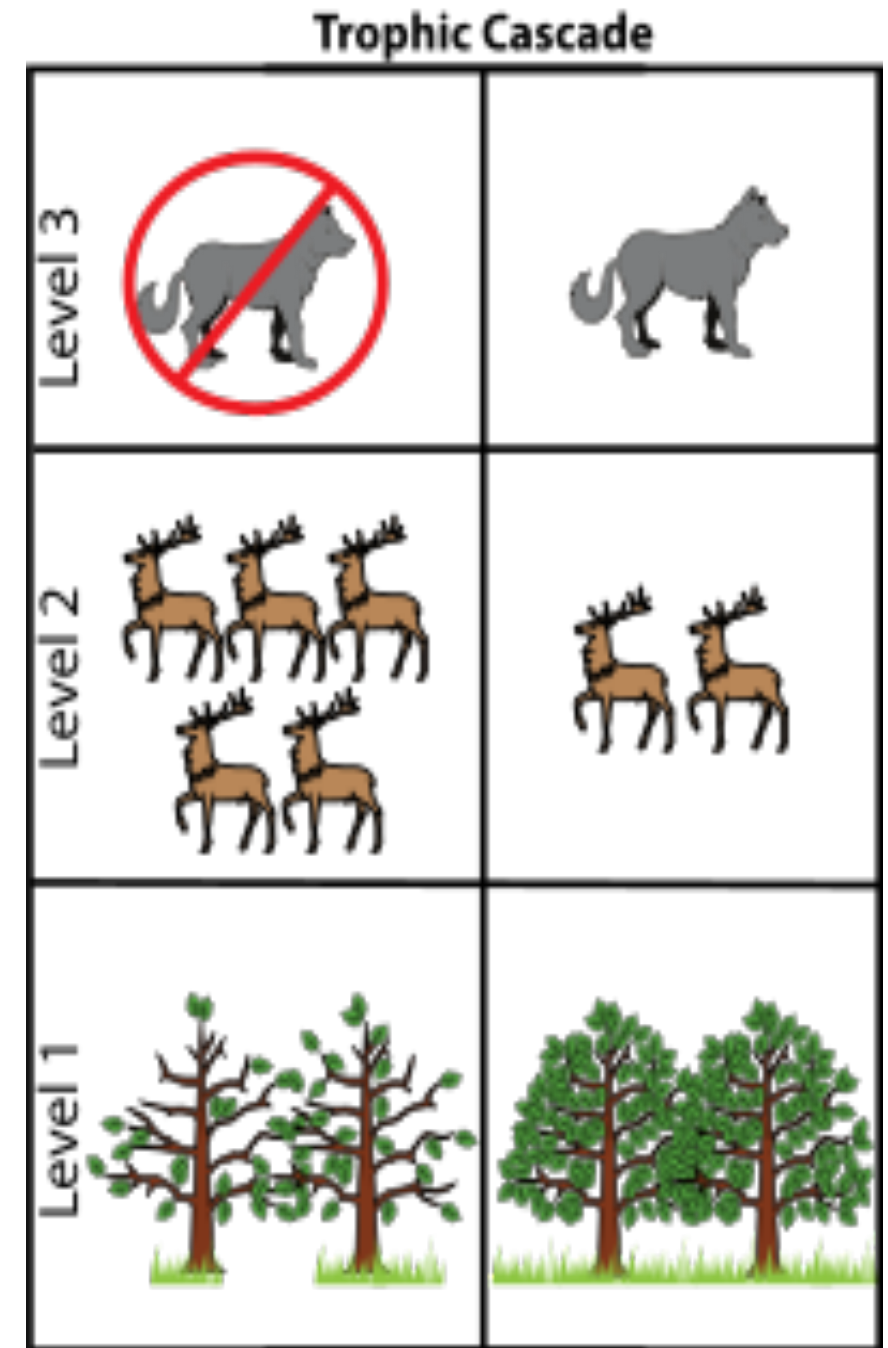
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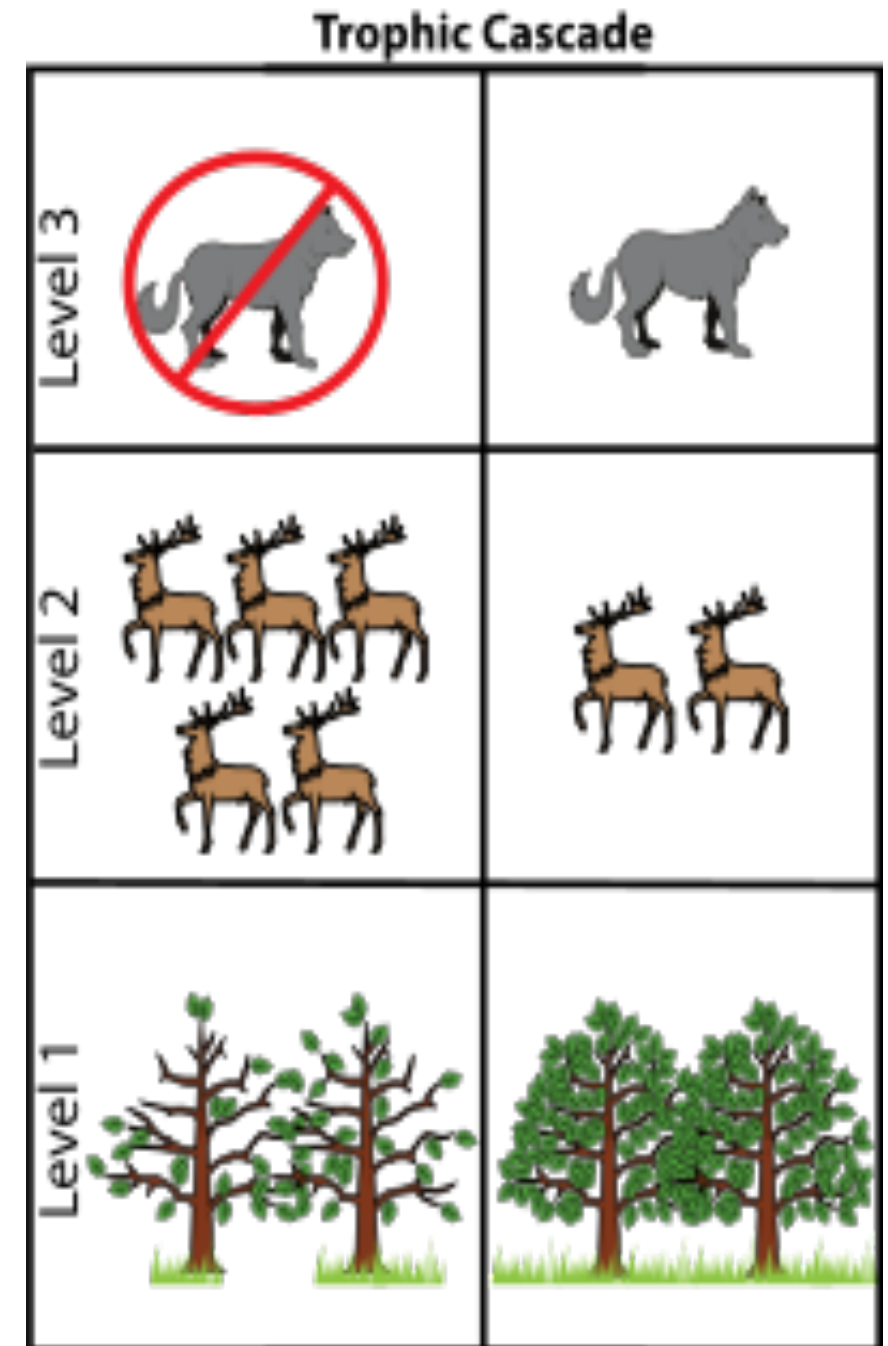
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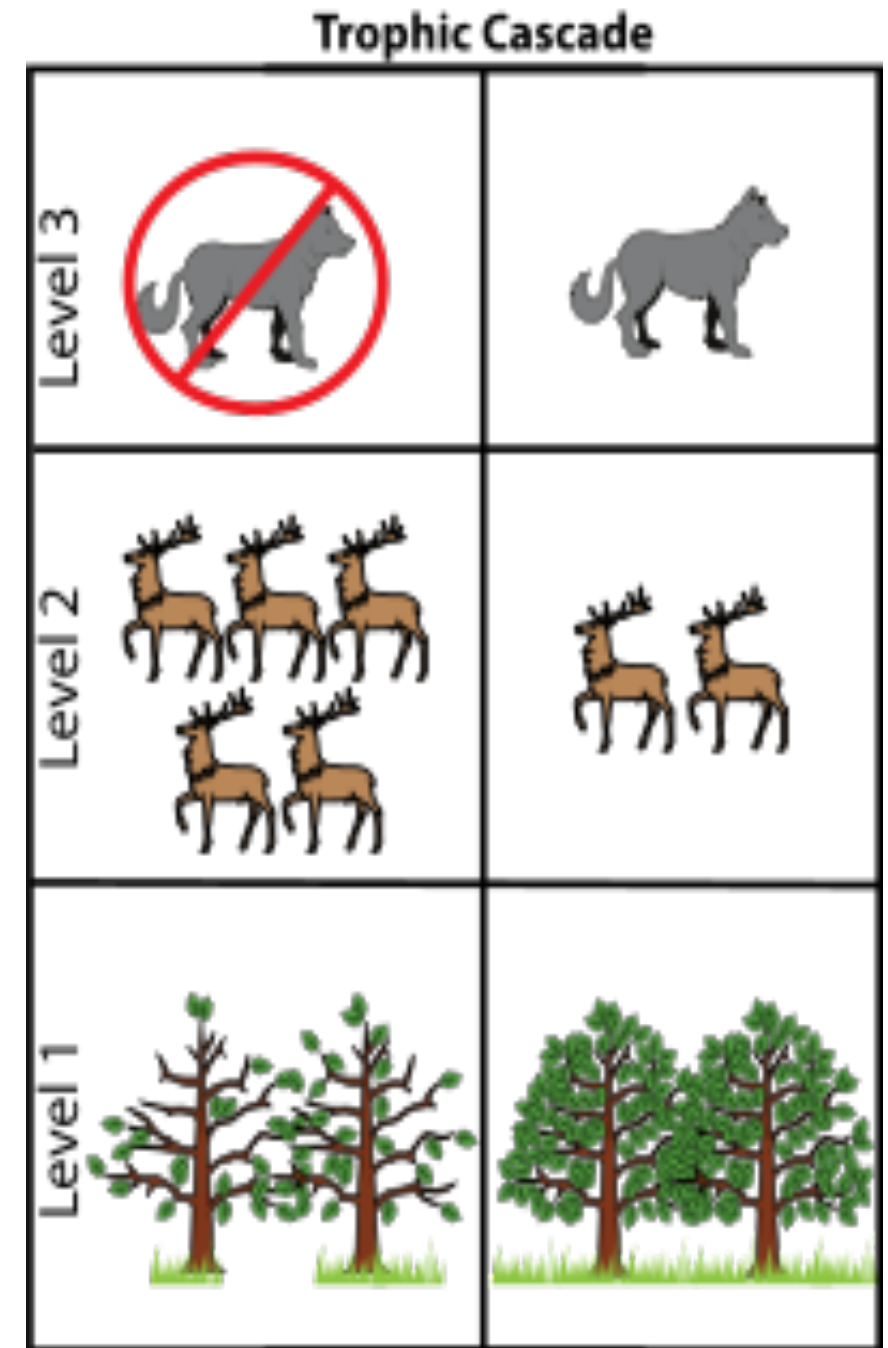
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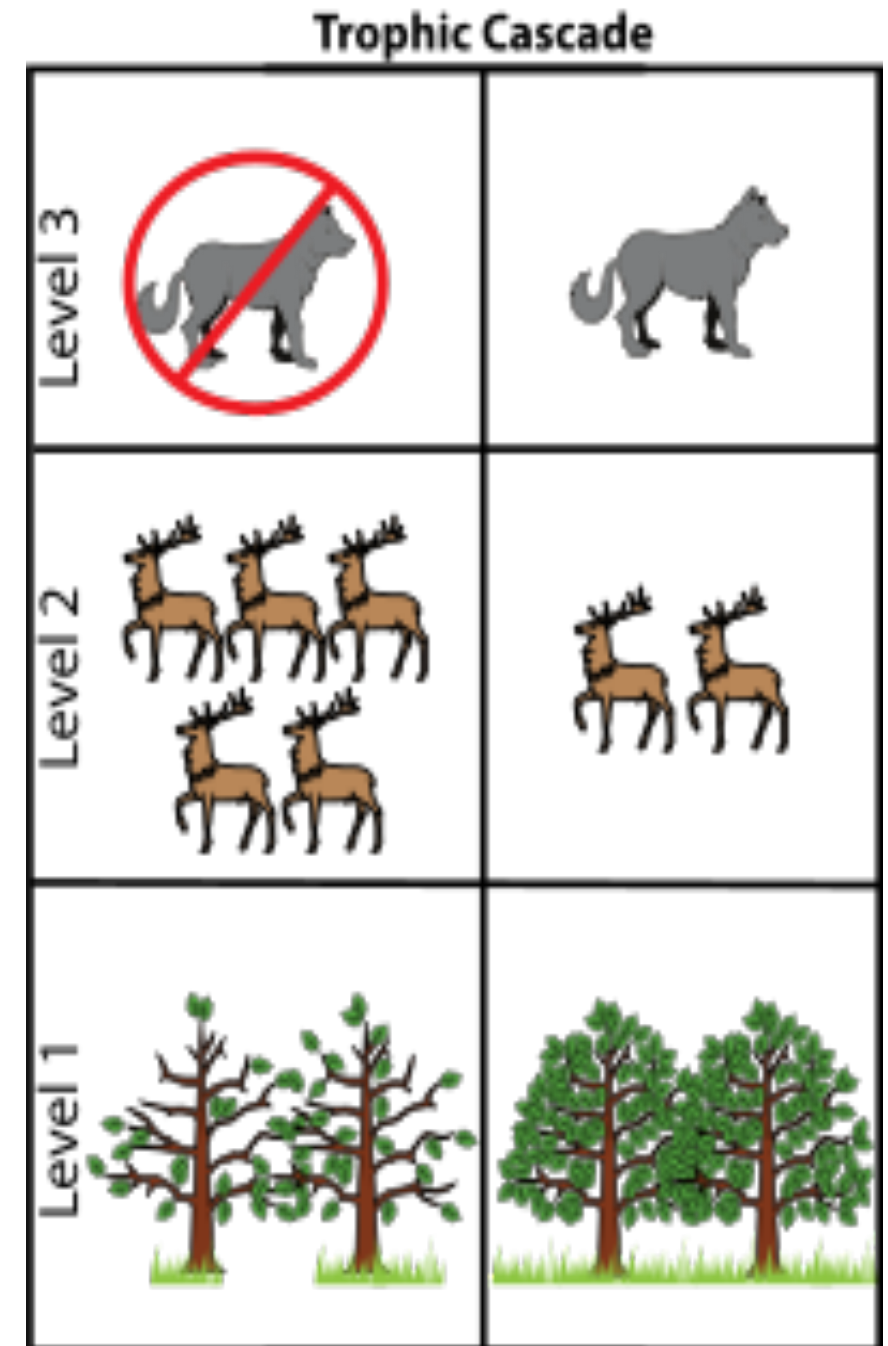
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- This means that biodiversity depends on predators.



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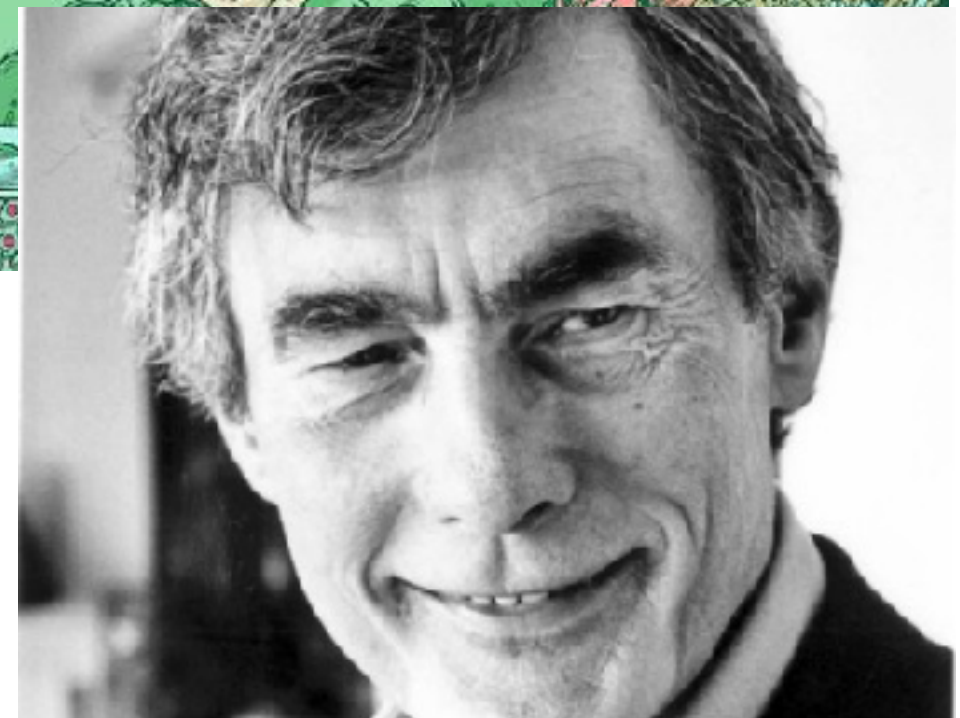
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- What are the wider social and cultural implications of our interpretations of ecological processes?



Gaia - Cooperation

- “...living things, once they appeared on our planet, took charge of the global environment in a creative way. They became fully fledged partners in the shaping of the Earth, its rocks and water and soil...The goal of life is global homeostasis, and toward this end it transforms the planet into what might be viewed as a single self-regulating organism”

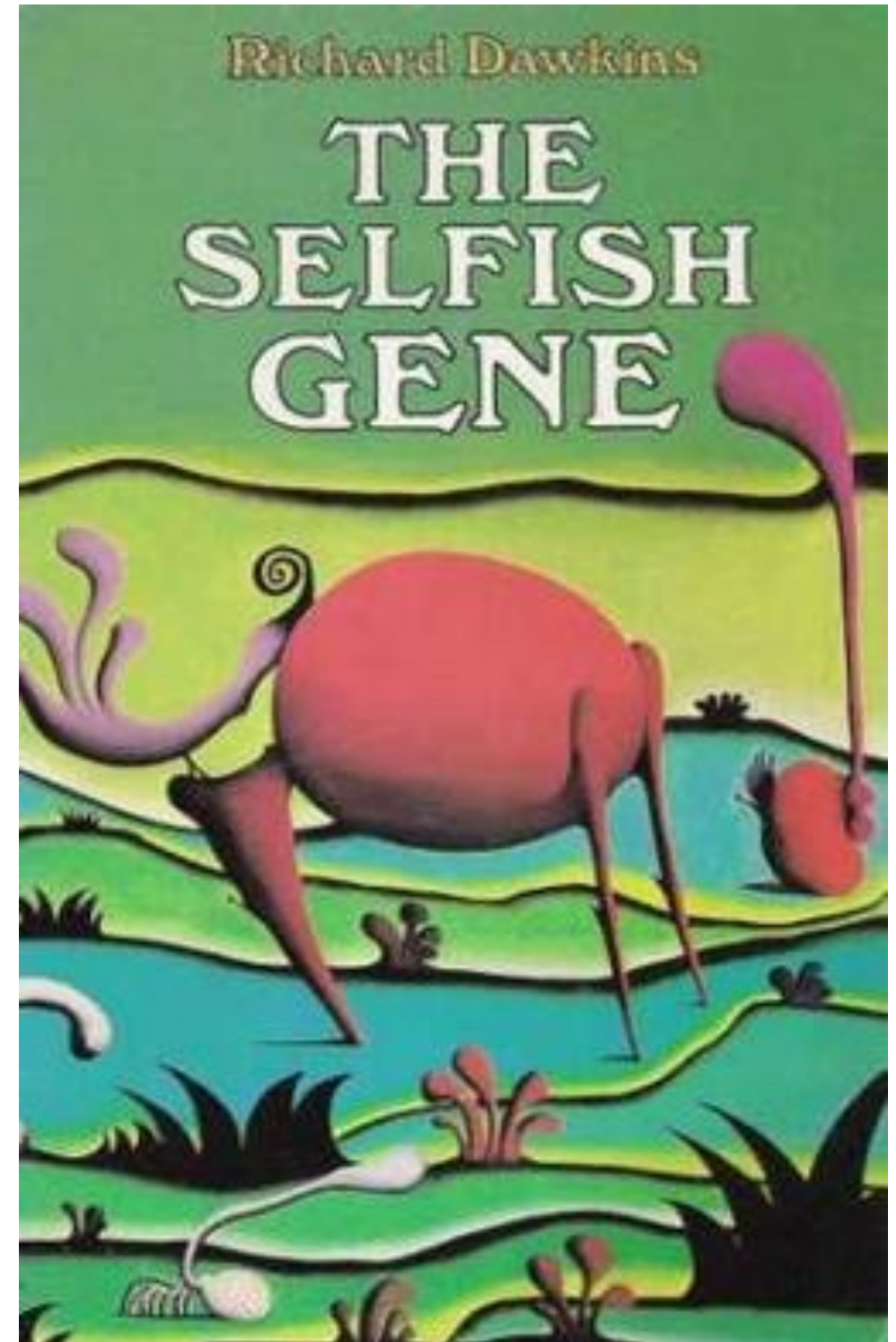
(Roszak, 1993, p. 147).



Gaia - Competition

- “A network of relationships there may be, but it is made up of small, self interested components. Entities that pay the costs of furthering the well being of the ecosystem as a whole will tend to reproduce themselves less successfully than rivals that exploit their public-spirited colleagues, and contribute nothing to the general welfare.”

(Dawkins, 1982, p. 237).



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- There are many different interpretations of ecology.
- There are ‘cultural ecologies.’
- Our cultural models and understandings of ecology influence the way that we behave in the world.
- The ecological crisis is also a cultural problem.



References

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Student Discussions

- **Week 2:**

Taylor - 'Earth and Nature-Based Spirituality (Part I): From Deep Ecology to Radical Environmentalism.'

Kimmerer - 'Weaving Traditional Ecological Knowledge into Biological Education: A Call to Action.'

- **Week 3:**

White Jr. - The Historical Roots of our Ecological Crisis

Plumwood - 'Gender, Eco-Feminism and the Environment'

- **Week 4:**

Taylor - The Greening of Religion Hypothesis (Part One).

Botelho et al. - "I made a pact with God, with nature and with myself": exploring deep ecology.'

- **Week 5:**

Matthews - 'Community and the Ecological Self.'

Bird-David - 'Animism Revisited: Personhood, Environment and Relational Epistemology.'

- **Week 6:**

Alley - 'River Goddesses, Personhood and Rights of Nature: Implications for Spiritual Ecology.'

Bird Rose - 'An Indigenous Philosophical Ecology: Situating the Human.'

- **Week 7:**

Harrild & Luke - 'An evaluation of the role of mystical experiences in transpersonal ecopsychology.'

Schroll - 'From Ecopsychology to Transpersonal Ecosophy: Shamanism, Psychedelics and Transpersonal Psychology.'