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## Weeds<sup>i</sup>

Louise Wright<sup>ii</sup>

### One True Time

It's possible that, until the foreshortening of space and time of the Anthropocene,<sup>1</sup> weeds did not exist. A weed is a plant out of place often thriving on sites of disturbance, in their turn also a phenomenon of the Anthropocene. Somewhere it isn't a weed. Plants have always moved around, their progeny hitching a ride on an animal or the wind, finding themselves "out" of their place. No humans involved. In (geological) time they might adapt.

Consider the deep time of the genus *Microseris* in Australia. The Australian species of this genus is thought to have evolved from one or a few diaspores (seed dispersal units) after a unique event of long-distance dispersal from western North America,<sup>2</sup> perhaps *Microseris paludosa*,<sup>3</sup> a species endemic to California.<sup>4</sup> This seed at some point arrived via the wind or water to Australia. Evolving from a single species in a process called adaptive radiation,<sup>5</sup> it formed several species from its ancestor to occupy ecological niches, becoming *Microseris lanceolata* (and *M. walteri* and *M. scapigera*), also known as the Murnong<sup>6</sup> Yam Daisy. Until very recently (pre-European colonization), they grew in abundance in south-eastern areas of Australia. Considered endemic and central to certain language groups' customs, its tuberous root was a staple food of Aboriginal people, harvested and cultivated by women on the plains grasslands.<sup>7</sup> It was, we might say, a plant out of place that, given time, evolved into

<sup>1</sup> Human activity has accelerated and geographically expanded in the Anthropocene so that "key components of the Earth System have moved beyond the natural variability exhibited in the last 12,000 years, a period geologists call the Holocene." International Geosphere-Biosphere Programme, "New Planetary Dashboard Shows 'Great Acceleration' in Human Activity Since 1950."

<sup>2</sup> Vijverberg, Lie and Bachmann, "Morphological, Evolutionary and Taxonomic Aspects of Australian and New Zealand *Microseris* (Asteraceae)," 128.

<sup>3</sup> This idea is made with literary license of the author after correspondence with Neville Walsh, Senior Conservation Botanist at the Royal Botanic Gardens, Melbourne, Australia, September 15, 2021, where Walsh communicated a theory put forward by Professor Kenton Chambers: "I looked back through emails from Kenton — he rather liked *M. borealis* as a possible ancestor. I guess it's highly likely that whatever made the journey was not an extant species but a recent ancestor. He believes it arrived first in NZ (possibly/probably on birds' feathers — he likes snipe, but others have been tracked to make the USA-NZ trip)."

<sup>4</sup> Chambers, "*Microseris paludosa*."

<sup>5</sup> "Adaptive radiation refers to the adaptation (via genetic mutation) of an organism which enables it to successfully spread, or radiate, into other environments. Adaptive radiation leads to speciation and is only used to describe living organisms. Adaptive radiation can be opportunistic or forced through changes to natural habitats." Knapp, "Adaptive Radiation."

<sup>6</sup> As Walsh observes, "The Koorie name 'Murnong' (or 'Myrnong') has long been applied (e.g. Gott 1983) in Victoria, and 'Garnege' or 'Nyamin' in south-eastern New South Wales (Blackburn et al. 2015)." Walsh, "A Name for Murnong (*Microseris*: Asteraceae: Subfamily Cichorioideae)," 63.

<sup>7</sup> Australian National Herbarium and Australian National Botanic Gardens, "Roots, Bulbs."

at least three endemic<sup>8</sup> subspecies and gained cultural significance. The concept of a weed as a plant out of place is perhaps only possible with the physical disturbance and accelerated displacement of species experienced in the Anthropocene.

Consider the ecological opportunity in Australia of *Hypochaeris radicata* (and *H. glabra*), also known as false dandelion and endemic to Morocco.<sup>9</sup> It underwent a similar migration to evolve over time in Europe and then more recently it was *displaced* to Australia. In the absence of (deeper) time and opportunity to adapt to (now absent) ecological niches, it is now listed as an environmental weed in Victoria,<sup>10</sup> and considered a threat to *Microseris*.

In Australia, genera *Hypochaeris* and *Microseris* have often been misidentified for one another<sup>11</sup>: both in the Asteraceae family, in the order of Asterales, superorder of Asteranae, class of Magnoliopsida, phylum of Tracheophyta, kingdom of Plantae and in the form of life.<sup>12</sup> One imagines these genera met at some point around 1835 when European settlement began in Melbourne in the Port Philip Bay area, attracted by land suitable for grazing sheep — the same plains which sustained *Microseris lanceolata*. Within five years, the overgrazing processes in turn created the disturbance that supported the displacement of *Microseris*. Today, in their place and in many places, *Hypochaeris radicata* grows happily.

Despite the lack of opportunity to be of the place, the weed ironically has in some settings adapted more quickly than it might have to a new kind of ecological niche — the urbanized environment of the Anthropocene — to complicate notions of place and endemism. The fragmentation of plant communities into small isolated patches in leftover unsealed soil of urban environments favors seeds considered to be non-dispersal; that is, seeds that do not go far from the parent plant on, for example, the side of a road because they won't grow on the bitumen a few centimeters away. Rapid evolution within 5-12 generations towards non-dispersal has been shown in studies of plants in the fragmented plant communities of cities.<sup>13</sup> We could say they become *hyper* endemic.

The concept of a plant out of place exists outside of the interconnectedness of the earth's systems capable of transporting a single seed from California to what we now call Australia.<sup>14</sup> It requires a *singular official narrative* of what belongs where at one point in time: One True Place<sup>15</sup> where there is One True Genus at One True Time.

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<sup>8</sup> “Endemic (of a plant or animal): native or restricted to a certain area.” *Oxford English Dictionary*, 2001, s.v. “endemic”.

<sup>9</sup> Popay, “*Hypochaeris radicata* (Cat’s Ear).”

<sup>10</sup> White et al., *Advisory List of Environmental Weeds in Victoria*.

<sup>11</sup> The taxonomy of the Australian *Microseris* was only defined as lately as 2015. See Walsh, “A Name for Murnong.” As observed by Walsh, “Smyth (1876, p. 171) reported at Coranderrk Mission (Healesville, Victoria) that ‘the natives’ ate the roots of non-native *Hypochaeris glabra* L. (‘Nareengnan’ in the local language) which does not have tuberous roots. This is interesting as, today, *Hypochaeris glabra* is not a particularly common plant in these parts (but *Hypochaeris radicata* L. is), suggesting perhaps misidentification. However, Smyth notes that the species listed were identified by Ferdinand Mueller, the Government Botanist at the time, and Mueller was certainly aware of *Microseris* (which he identified as a food plant elsewhere in Victoria in the same work) and *Hypochaeris radicata*. It is possible that, recognising the similarity between *Hypochaeris glabra* and *Microseris*, the Coranderrk Aborigines adapted to the weed as it appeared in the district, suggesting further that they may have been accustomed to consuming non-tuberous species of *Microseris*.” See Friends of Geelong Botanic Gardens, “*Microseris walteri* Murnong.”

<sup>12</sup> Royal Botanic Gardens of Victoria, “*Hypochaeris glabra* Smooth Cat’s-Ear.”

<sup>13</sup> Cheptou et al., “Rapid Evolution of Seed Dispersal in an Urban Environment in the Weed *Crepis sancta*.”

<sup>14</sup> See note 3.

<sup>15</sup> Plumwood, “Shadow Places and the Politics of Dwelling,” 145.



Figure 1. *Microseris paludosa*.  
Source: Photographer Chris Winchell © 2012



Figure 2. *Microseris lanceolata*.  
Source: Photographer Neville Walsh © 2019  
Royal Botanic Gardens Board, Melbourne,



Figure 3. *Hypochaeris radicata*.  
Source: Photographer Alex Watt ©



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<sup>i</sup> Wright, Louise. “Weeds.” *An A to Z of Shadow Places Concepts* (2021).

<https://www.shadowplaces.net/concepts>

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