

# *When Pressed: The National Herbarium of NSW*

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“The strange environment of New South Wales – its residents, its weird animals, its even weirder plants (who knew that trees might shed their bark, rather than their leaves?) - filled the journals and letters of the people sent there... Where some saw ‘rare and beautiful plants’, others saw a place ‘so very barren and forbidding that it may in truth be said that *here nature is reversed*’. However the country looked, its new settlers began their floral gatherings...”

*Herbarium*, Robyn Stacey & Ashley Hay.

We are so used to the “weird” flora and fauna of NSW that it may be difficult to imagine the wonder experienced by an individual like Joseph Banks making landfall in 1770. Banks, a passionate, compulsive plant collector, was thrilled by the Australian east coast’s stands of strange decortivating (bark shedding) Eucalyptus, grass trees (*Xanthorrhoea* species) with their flowering spikes reaching more than two metres high and the tiny, exquisite native violet (*Viola hederacea*) underfoot. Banks’ east coast discoveries so thrilled him that he famously convinced James Cook to abandon the proposed name for one part of the east coast and the proposed “Stingray Bay became Botany Bay instead” (Stacey & Hay 2004, p. 4). Stacey and Hay note that a decade after Banks’ “frenzied week of collection” at Botany Bay, when the English needed a penal colony “Banks heartily advocated Botany Bay” for the purpose, with a view to further plant collection, stressing that further collecting would yield plants that would “no doubt possess properties that might be useful for physical and economic properties” (Stacey & Hay 2004, p. 5). Thus did Australian ecology emerge “from a background of ‘empire science’, which began with the sciences of exploration...especially taxonomy and systematics” (Robin 1997, p. 64).

It would take until 1896 under the directorship of J.H.Maiden for the National Herbarium of NSW to be established at the Royal Botanic Gardens Sydney, eighty years after the founding of the Gardens. The time from Banks’ arrival on the east coast to the present day is rich with stories of individuals driven to collect, classify, name and preserve plant specimens, continually attempting “to discern an underlying order” (Farber 2000, p.2) in the ‘natural’ world. In 1770 we see Banks’ and Daniel Solander drying and storing plant specimens using proof pages of Milton’s *Paradise Lost* (Stacey & Hay 2004, p. 5). In 1845 we encounter Ludwig Leichhardt whose botanical expedition north from Moreton Bay met with tremendous difficulties. Leichhardt is standing over a fire, burning pages of pressed plants his party could no longer carry after the loss of several expedition horses, and “tears were in my eyes when I saw one of the most interesting results of my expedition vanish into smoke” (Stacey & Hay 2004, p. 11). Through all those years, we see hundreds of individual

plant collectors, both “amateur” and professional. The collectors make their characteristic way through Australia’s bushland with a ritual walk, stop, reach then examine. This followed up later with careful, meticulous drying, pressing and preserving of pieces of plant material.

In 2002 as part of my studies in Bushland Regeneration I created a small Herbarium collection of native plants and weeds. Just like Willhelm Baeuerlen in 1892, I found I had to “beg and steal every old newspaper I could get hold of” (Stacey & Hay 2004, p. 17) just to have enough paper to properly dry specimens – sometimes the paper needs to be changed every day. In 2002 I was intoxicated with the order and serenity of plant taxonomy: here was a safe, bounded world where rational, systematic methods could be used “to bring order to the otherwise overwhelming variation found in nature” (Farber 2000, p. 2). But this year I sat in the Public Reference Section of the National Herbarium of NSW and wrote in my notebook: *There is something quite haunting about the shelves and shelves of pressed plants. For the first time I am questioning this vast example of the human endeavour of science, order and classification.*

The National Herbarium of New South Wales is located in the Plant Sciences building in the south-east corner of the Botanic Gardens. The entrance is on Mrs Macquaries Rd. Stacey and Hay in their history and collection of photographs published in 2004, *Herbarium*, evocatively describe visiting the space:

“You can imagine a vast filing cabinet, one that’s large enough to walk around inside. These are big, high rooms, one on top of the other and filled with corridors of shelves stacked ceiling-high with red plastic boxes. It’s dim in here and quiet, and the air is soft with the leftover smell of naphthalene. This is the National Herbarium of New South Wales...repository for more than a million plant specimens...a three dimensional reference work...the Latin name for these collections, *hortus siccus*, is literally a dried garden” (Stacey & Hay 2004, p. 1).

The Herbarium is home to 1.1 million plant specimens, a collection comprised of both Australian native and naturalised plants. The general public is encouraged (by the taxonomists on staff) to use the Public Reference section of the Herbarium to ‘key out’ the pieces of plant they arrive with, in search of identification. Keying out involves using numerous plant guides and pressed plant specimens to discover the family, genus and species of your sample. The public section holds *isotypes*, specimens collected at the same time and from the same plant or localised population of plants as the *holotypes* in the main Herbarium. The holotype specimen represents all of its kind, it is “an individual plant chosen by taxonomists to serve as the basis for naming and describing a species or variety” (Allaby 1998, p. 459). Thus in taxonomic terms, the tiny pressed native violet held in the main Herbarium collection represents all *Viola hederacea* everywhere.

The Herbarium and its practice of taxonomy is profoundly a product of European Enlightenment ideas of reason, rationality, science, and empiricism. Taxonomy, the scientific classification of organisms, is based on the assumption that humans can understand the ‘natural’ world through rational observation and classification. The

truth or underlying order of natural systems is there simply waiting to be discovered. Paul Lawrence Farber in the introduction to his work on taxonomic science *Finding Order in Nature* points to the section in Genesis where God brings his creations (beasts, birds) before Adam “to see what he would call them; and whatever man called every living creature, that was its name”. Farber states that the Genesis story (with its now controversial implication of man’s dominion over nature) “reflects the long-standing importance of naming and characterizing things in nature” (Farber 2000, p. 1). With the European Enlightenment came what must have been a liberating release from the yoke of religious doctrine. A rejection of faith based knowledge and a turning towards reason and empiricism, the powerful idea that the individual has an obligation to discover the truth about the world. Farber argues that we cannot understand a ‘natural’ system such as a wetland “or the interactions within it, until we know something about what is there” (Farber 2000, p. 2). Therefore, until the parts (plants, frogs, fish) of our hypothetical wetland are *named* we cannot begin to understand how they work together.

It should be emphasised that the people who practice what could be perceived as dry, rationalist and reductionist taxonomy usually have a great passion for the ‘natural’ world. Many taxonomists see their work as an essential part of the conservation process. Also, like Farber, they are drawn to questions about the implications of their discoveries, and engage deeply with the anxieties which come with progress and modernity. Farber asks “What is the extent of our ability to understand nature? And, understanding nature, will we be able to preserve it?” going on to state that “naturalists question the meaning of the order they discover and ponder our moral responsibility for it” (Farber 2000, p. 4). The Herbarium and all it signifies stands as a powerful symbol of modernity, with all the joy in discovery, drive for progress, complexity and anxiety modernity entails. The freedom from religious doctrine brought about by European Enlightenment has proven to be a double edged sword, with that freedom has come a new set of uncertainties. In relation to ‘nature’, ‘the environment’ and the ‘natural world’ our sources of anxiety have shifted and are now “bound up with what we have done to the world rather than what God might do to it or to us” (Giddens 1998, p. 114).

The task of attempting to make sense of “what we have done to the world” in relation to the ‘natural world’ or ‘the environment’ is one which is made complex by necessary questions about just what we mean when we say ‘nature’. Raymond Williams has stated that his efforts to critically and historically analyse difficult ideas like culture, society and class seem “comparatively simple” when faced with breaking down the idea of ‘nature’ (Williams 2007, p. 284). Williams asks “when we say nature, do we mean to include ourselves?” (Williams 2007, p. 284). We cannot escape our historical, social and cultural contexts when we speak of ‘nature’. An example is the way that Western capitalism has influenced how we code nature, “namely to separate man from ‘nature’ and think of nature as a resource, or a source of consolation, or as a model” (During 2007, p. 283). Interestingly, this increased separation from ‘nature’ may be a result of our increasing interventions in ‘nature’ under modernity - as we seek to distance ourselves from the results of our actions “the separation is a function of an increasing real interaction” (Williams 2007, p. 295). Along these lines Giddens makes the argument that the ‘natural’ that was once inaccessible to us, “the depths of the oceans and the heights of the skies,” is now a resource that provides food, travel and communication. With the almost unlimited

actions of our progress and science, previously untouched areas are now “saturated with the consequences” of our actions. Indeed “on the bottom of the ocean and in the outer limits of the atmosphere the environmental consequences of modern industrial society continue to accumulate” (Giddens 1998, p. 17).

It can be argued that “complex and contradictory ideas of nature” are “typical of modernity” (Cronon 1996 p. 32). The multiple ways that we ‘moderns’ express our needs, fears, desires and appetites through our ideas of nature are deeply indicative of our time, of our moment in history and our social and cultural contexts. We, sometimes simultaneously see ‘nature’ as a “moral imperative” in environmentalism, preservation and conservation; as “Eden” an ideal ‘natural’ place of innocence and escape from the ‘real’ world; as “avenging angel” when natural disasters occur; as “commodity” with its natural resources to be bought and sold; as “contested terrain” in debates over what nature is and what is not; and even as “virtual reality” (Cronon 1996 pp. 36-51). For the taxonomist it is arguable that there is a release from anxiety into safety in the “very modern undertaking” of “defining, limiting, boundary drawing, categorizing and ordering” (Clegg 2009, p. 2). In the world of taxonomy “a plant pressed onto a sheet has *no official place* until it’s named and classified” (Stacey & Hay 2004, p. 1). Here we see evidence of ‘nature’ as:

“...a profoundly human construction. This is not to say that the nonhuman world is somehow unreal or a mere figment of our imaginations – far from it. But the way we describe and understand that world is so entangled with our own values that the two can never be fully separated. What we mean when we use the word ‘nature’ says as much about ourselves as about the things we label with that word” (Cronon 1996 p. 25).

When we speak of being modern, with the feeling of currently living after some traditional Eden, in the noise after the “long stillness before the machine” (Wright 2004, p. 9) what exactly do we mean? For Giddens modernity is “at its simplest a shorthand term for modern society or industrial civilization”. Modernity is a point in time and place when we hold an “idea of the world as open to human intervention” and importantly “it is a society – more technically, a complex of institutions – which unlike any preceding culture lives in the future rather than the past” (Giddens 1998, p. 94). With the rise of rationality and reason comes a reduction in the traditional belief in fate. Giddens argues that in the place of this belief in fate we now have the concepts of trust and risk. Within modernity trust is “about the binding of time and space, because trust means giving commitment to a person, group or system across future time”. Risk on the other hand is about “the active assessment of future hazards, and becomes a more pervasive notion the more a society seeks to live in the future and shape it actively” (Giddens 1998, p. 101). Giddens suggests that there is a social reflexivity required of us, an ongoing reflection on the “limitations and difficulties of modernity itself” (Giddens 1998, p. 116). This reflexivity is necessary now that we live “after the retreat of tradition and nature” (Giddens 1998, p. 115). Giddens emphasises that the retreat of tradition and nature does not mean we now live without these things. Tradition continues to be inextricably linked to and exist in interaction with modernity. Nature also is not lost, the retreat or “end of nature” does not refer to “a world in which the natural environment disappears, rather it means that there are now few if any aspects of the physical world untouched by human intervention”

(Giddens 1998, p. 207). Giddens also rejects the notion that we have become postmodern positing instead “late modernity” or a “radicalization of modernity”, stating that in place of postmodernity he prefers “to speak of reflexive modernisation”. (Giddens 1998, p. 117).

What of postmodernity then? In the same way that tradition remains bound to and in conversation with modernity; “postmodernity is implicated in modernity, and modernity is constantly big with its postmodernity” (Clegg 2009, p. 4). Thus postmodernity does not follow or stand in opposition to modernity, rather “postmodernism is a complexification, a hybridization and sublation of the modern - not its antithesis” (Clegg 2009, p. 4). Here we are speaking of moments, not eras or epochs or academic lines in the sand. Latour’s hybrids, which in his opinion are neither modern or postmodern, “circulate in networks of translation and mediation” despite modern attempts to “purify them” and place them either in the category of “knowledge things” or “power and human politics” (Porter 1994, p. 2). Similarly Donna Haraway argues for the pleasure to found in fluidity and hybridity, for an embracing of a “confusion of boundaries” and “a responsibility in their construction”. Haraway is scathing of what she refers to as the border wars engaged in by “the traditions of western science and politics...the tradition of progress; the tradition of appropriation of nature as resource for the production of culture”. Haraway sees “postmodern strategies, like my cyborg myth” as charged with the task of subverting “organic wholes”. Here again is a challenge to our ideas of nature, a reminder that machine and organism act “as coded texts through which we engage in the play of writing and reading the world” (Haraway 2007, p. 317).

There are those who perceive postmodern ideas as a threat to ‘nature’. Soule and Lease argue that “certain contemporary forms of intellectual and social relativism can be just as destructive to nature as bulldozers and chainsaws” (Soule 1995, p. *xvi*). These critics see the postmodern analysis of texts as something which will “replace the world with webs of words, sounds, and signs that refer only to other constructions” and will result in a “nihilistic ecology” (Shephard 1995, p. 21). These imaginings of a pure ecology undone by postmodernity seem extreme to say the least. The idea that we impose our own ideas and values onto ‘nature’ is seen by some as very threatening and upsetting to scientists who, in one author’s opinion, believe that the idea of social constructions “threatens the very foundations of science, for it seems to imply that science does not play a privileged role in discovering the truth about reality” (Hayles 1995, p. 47). A far more reflective and subtle perspective on postmodernity and science is offered by scientist Richard Eckersley who is willing to concede the possibility that postmodern thinking on science has brought to light “the possibility that science may have to confront its own intrinsic limitations” (Eckersley 1999, p. 2). This insight is refreshing coming from a professional working in a field often firmly fixated on progress. Eckersley posits that “in losing its ideological dominance as the source of progress, science is losing its own internal coherence and the philosophy and culture that have held it together” (Eckersley 1999, p. 3). In what could be read as nod to Foucault’s power/knowledge, Eckersley acknowledges shifts in power in the production of knowledge so that the culture and norms of science become “those of its users”. For this scientist, at least, “it is increasingly meaningless to talk about a single form of scientific progress... opinion about science depends on which public, which science, who carries it out, and who owns it” (Eckersley 1999, p. 4).

The shifts and challenges produced as modernity continues to fold itself “back upon its own presumption”, question itself and “take distance” (Clegg 2009, p. 4) are without doubt felt by the taxonomists at the National Herbarium of NSW. They are planning an online Herbarium, which will see the edges of this vast three dimensional work shift and blur into the virtual. Herbarium staff are gradually moving away from “identifying themselves as passive guardians of an inherited legacy” and moving towards “celebrating their role in actively shaping collective memory” (Cook 2000, p. 1). In relation to the field of taxonomy, playful, questioning projects have emerged like *A Field Guide to Surreal Botany*, a blend of fictional science and science fiction featuring imaginary cyber-botanic and levitating plant specimens all presented in the format of a serious field guide. One cannot help but be excited at this stretching, folding and exploration of edges. Like an overwhelmed Joseph Banks beneath a stand of strange Eucalypts in 1770, in this moment and place we too have the power to name the things of this world, and to reflect on the time and contexts of that naming.

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