Mold, weeds and plastic lanterns: ecological aftermath in a derelict garden

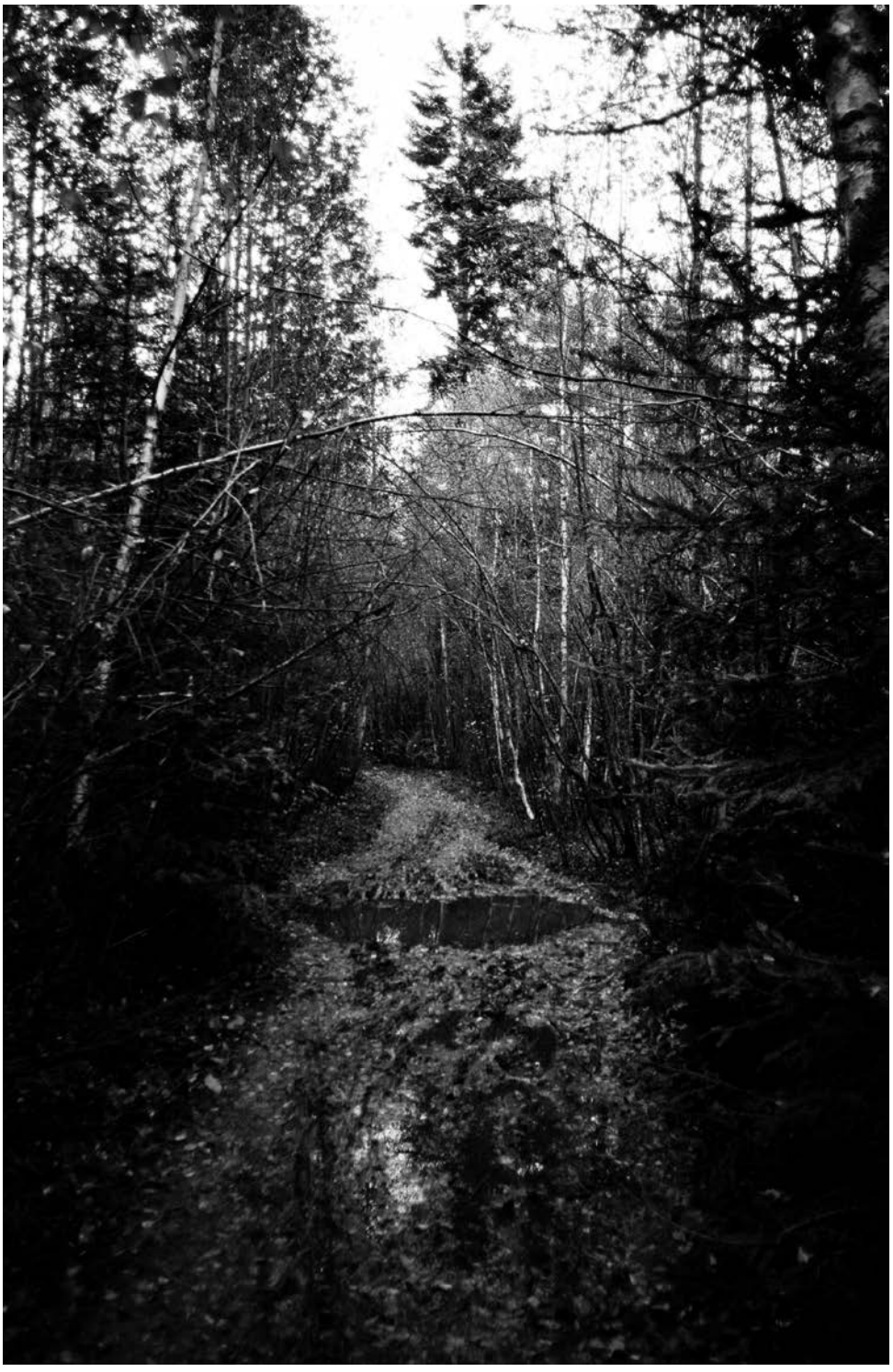
Introduction

Envisage an old landscape garden with impenetrable silver fir (*Abies alba*) thickets and creeping carpets of periwinkle (*Vinca minor*) draping crumbling stone terraces underneath a dense canopy of deciduous and coniferous trees. The anthropogenic presence in the lush landscape is revealed by a cluster of derelict buildings, a dilapidated Swiss chalet villa, a gardener's residence, and a garage, adorned with a rusty corrugated iron roof. This is Retiro, a derelict 19th century landscape garden and summer estate located in Molde, a small town on the north-western coast of Norway. The Spanish noun "retiro", which translates to English as "retirement" or "withdrawal", was the name given to the property by the Danish consul and industrialist Christian Johnsen. The name may indeed sound familiar; the garden is named after the famous Buen Retiro Park in Madrid. In his youth Christian was denied entrance to this wondrous park, which made him swear that he would himself create a garden that was open to everyone (Eikrem 2015, 50). The eight and a half hectare estate and landscape garden were finished in 1874, nestled in picturesque rural surroundings on the temperate and fertile south facing shore of the Fannefjord. True to Johnsen's promise, the garden was open to all, from the common farmer to the German Kaiser. Today however, the jointly entropic and verdant landscape exhibits another form of radical openness in its apparent dereliction that includes beings and objects that never were included on the original guest list.

This text will explore three different facets of Retiro that constitute and continue to shape the place today, namely fungi, invasive organisms, and "feral" artefacts. These examples were chosen because they are rather unconventional in the traditional frame of cultural heritage, but no less importantly because they quite literally brought attention to themselves during several seasons of field survey in the garden. These organisms and things are constituent parts of the material "unconscious" (cf. Olivier 2011) that maintains, reshapes, and inhabits Retiro. They exemplify an archaeological record that exist in parallel with common anthropocentric descriptions and historical heritage-characterizations, but which vitally contributes to the complex ecology that makes the place.

Framing heritage in this a way invites reflection on how it also affects and is affected by non-humans such as plants, animals, minerals and fungi. A descriptive engagement with such entities can foster novel insights into a heritage site as a particular ecosystem. The radical "openness" of ruinous places is an underlying theme in the field of contemporary archaeology (i.e. Olsen 2010, 166–173; Farstadvoll 2016), and though focused on the nature of a feral landscape I hope this text can expand this topic with concrete examples. Concern for this openness has, moreover, mostly been focused on relationships between humans and

derelict places (Edensor *et al*. 2011; Moshenska 2014), on acts of remembering and disclosing hidden and overlooked pasts (González-Ruibal 2008), or on how abandonment and opens affords the wondrous and mysterious nature of things (Pétursdóttir 2014). Here I want to draw attention to interactions between anthropogenic objects and other non-humans and to how these also constitute a part of this ecological openness. Based on fieldwork in Retiro – a heritage site bordering the natural and cultural – my aim is thus to weave an intricate picture of how such places are constituted, maintained and experienced.



The matter of heritage and ecology

For its northerly latitude Fannefjorden has an unusually mild climate, owing to the large hills protecting the area from cold northerly winds and the towering Sunnmøre Alps to the south that intermittently spawn warm föhn winds (Jakobsen 1953, 435; Vestad 1961, 11). These climatic circumstances make this an ideal place for growing a wide variety of plants, from exotic perennials like the castor bean (*Ricinus communis*), to large trees like the Lawson cypress (*Chamaecyparis lawsoniana*) (Vestad 1961). The garden, thus, had both native and non-native plants that created an eclectic landscape exhibiting both a local and foreign character. This hybridity was further emphasized in its adornment, with statues of beings from the Greek pantheon set amidst a timber hunting-cabin folly and ponds emulating their natural counterparts found in the surrounding mountains.

No longer routinely raked and refreshed with new coats of gravel, the serpentine paths of Retiro are today pockmarked and muddy. Some are completely grown over after being blocked off by large fallen trees. Yet there are clues of people still tracing the old passages, some of which have been patched with wooden boards in the muddiest sections. Long gone, however, are the gardener and his neat topiary shaping of the boxwood (*Buxus sempervirens*) and yew (*Taxus baccata*) in the flower garden. The garden's dereliction started in the interwar period when the maintenance became too costly (Vestad 1961, 16; Parelius 1982[1953], 58). During the war, Wehrmacht forces took control over the property. The garden was used to hide vehicles, which damaged it to such an extent that a local historian described it as a ruin in 1951 (Jakobsen 1953, 437–439; Parelius 1982[1953], 58). While the northern half of the property has been owned for several decades by the municipality, the remaining section was sold by a descendant of Johnsen in 2005 to a real estate development company. Today the windows in the villa are boarded up with plywood, and the same goes for the large gardener's residence.

As an unexploited seaside property, plans to redomesticate the feral landscape garden has of course emerged. In a recent assessment, the municipality asserts that "*The old Retiro garden is accessible, but not in a state that invites active use*" (Molde kommune 2014, 13–14, my translation). One of the proposals to rectify this problem involves "rebuilding" the garden and renovating the villa to use it as a kindergarten (e.g. Molde kommune 2014; Molde Eiendom 2014). A part of the property is also currently threatened by plans for building a new roundabout and road extension. Despite these plans, and though not assigned special status by heritage authorities, both private and public interest groups see Retiro as a valuable heritage site that needs to be rescued from its current circumstance (Farstadvoll 2016). Interestingly,

however, this bureaucratic and economic inertia that has for long foreclosed the garden in a state of limbo has, as we shall see, also made it possible for a novel and alternative heritage landscape to develop.

Seeing a grove that once was an open field now covered in birch trees (*Betula pubescens*) stunted by the fierce competition for sunlight, the concerns raised about the future of the property might seem warranted. The sentiment of the municipal planners resonates with the assessment given by biologists that surveyed the area in the early 1990s: "*The efforts to clean up after ravages of the hurricane and nutrient release from the root systems of the trees have meant that the vegetation and appearance of the park now are neither particularly aesthetically inviting nor suitable for moving about in*" (Jordal and Gaarder 1995, 128, my translation). The 1992 New Year's Day Storm is regarded as the most damaging cyclone to hit Norway in modern times. Many of the garden's coniferous trees had grown tall in the absence of pruning, making their towering trunks vulnerable to the strong gusts of wind. Once the colossal organisms fell, the spaces left open in their wake, together with the accumulated biomass, triggered an ecological succession (cf. Franklin, Shugart, and Harmon 1987) – new things started to grow, pioneering species such as raspberry (*Rubus idaeus*), fireweed (*chamaenerion angustifolium*), and birch. This demonstrates that regardless of the biologists' judgment Retiro's present situation might not be as uninviting, aesthetically or otherwise. Some sections of Retiro can be hard for people to move through, but the local badgers (*Meles meles*) and roe deer (*Capreolus capreolus*) traverse the dense underbrush without any problems. The nature of Retiro, thus, raises awareness of a world that extends beyond the usual conceptual frames of cultural heritage use or statutory duties of the municipality.

Retiro is a place that exposes its heritage as an emergent presence that stubbornly continues to exist despite, and because of, the lack of deliberate maintenance. A motivation for engaging with such a place is to disclose the fact that these places are also constituted by non-humans, which often are overlooked (cf. Harrison 2015; Olsen and Pétursdóttir 2016; Kobiałka 2018), and how each one of them, in different ways, is involved in the unceasing formation of heritage sites. The definition of heritage this text operates with includes things that are generally thought not to belong under this term, such as modern trash, spores, and disposable plastic spoons. I regard heritage not as something we inevitably have the chance to define and choose, but as something inherited, whether we like it or not (cf. Edensor 2016; Farstadvoll 2016; Olsen and Pétursdóttir 2016). This may represent an alternative way of understanding heritage. Nevertheless, thinking heritage beyond the anthropocentric is not farfetched.

Tangible heritage is ecological because it cannot be treated apart from the "*discursive and material conditions and practices*" that ensure its maintenance as heritage sites and objects over time (Rubio 2016, 60). In Retiro, fungi, plants, and other non-human entities are part of the material conditions and practices that aggregate the park in its nascent feral state. To think ecologically, one must acknowledge the interplay between things and beings (cf. Bryant and Joy 2014, xi), but ecology also deals with the "*transformation and flux of energy and matter*" that these relationships and interactions create, maintain, dissolve, and become affected by (Begon, Howarth and Townsend 2014, 5). This text also aims to demonstrate that heritage is not a homogenous phenomenon (cf. Fredengren 2015), but rather something that emerges through a wide array of organisms and things. Even though objects should not be reduced to their momentary relations (c.f. Harman 2011), ecology shows us that it is important to see how things and beings relate and interact, or withdraw from each other, in order to begin to understand a place. Ecology thus forms an argument against the perception of purity and separation that often exist in contemporary heritage management concerning both the "natural" and "cultural" environment (cf. Latour 1993; Lowenthal 2005; Harrison 2015; Shotwell 2016). Retiro can be classified as an example of a "fourth nature", "novel ecosystem", or "eco-fusion" (cf. Kowarik 2005; Morse *et al*. 2014; Rotherham 2017), as a place where the anthropogenic heritage is inseparable from what is usually regarded as the natural environment, and vice versa. This "feral" character reflects global developments, such as pollution, habitat destruction, global warming, mass extinction, and so on. However, instead of trying to eliminate presumed historical and organic imperfections, places such as Retiro can invite an opportunity to speculate about what lies ahead. In the following I will trace a few of the feral stories I've come across through my work in the garden, and how these manifests Retiros intricate heritage.

Fungal legacy

In the center of the garden's north-eastern quadrant is a small clearing with an understory crowded with wood ferns (*Dryopteris filix-mas*). The forest floor consists mostly of decomposing leaf litter interlaced with green moss and fallen twigs, which each year become dimmer under an expanding canopy of invasive sycamore (*Acer pseudoplatanus*) and silver fir. In May 2015, a gnarly and truncated branch could be seen propped up against one of the small sycamores growing along the perimeter, its bark, stained with splotches of blue, green, red, and yellow paint. A truly odd and apparently nonsensical object, but what made it even weirder was a gelatinous growth protruding from several places along its surface. The substance was reminiscent of the old folk belief in star-jelly or the "*rot of the stars*", which is a slimy matter found on the ground after shooting stars had been seen striking through the sky (Hughes 1910; Belcher and Swale 1984). Today it is understood that this substance is most likely the fruiting body belonging to some kind of jelly fungus (Nieves-Rivera and White 2006, 24). Based on it's relatively large and lobed body, the specimen inhabiting the painted branch might be the yellow brain fungus (*Tremella mesenterica*). The yellow brain fungus is not itself digesting the branch, but is rather a parasite on other fungi that metabolize the dead wood (Zugmaier, Bauer and Oberwinkler 1994). Its pale-orange, milky white and translucent fruiting body mingles with the topography of the branch, lending its own aesthetic presence to the weird chromatic collage. The astronomer Martin Beech commented that the connection between fungi and meteors in folk belief is not so farfetched, even if the existence of gelatinous meteors belongs in myth, because "*[a]s metaphors of decay meteors and fungi share a common image* …" (Beech 1989).

In October the same year the branch was still there, but the gelatinous growths were gone and replaced with gaping scars exposing moldering heartwood. The holes were the only trace left by the fungi, apart from the rotting wood beneath the bark. The pungent smell of humus, decomposing plant matter, infuses the air in Retiro during the summer and fall. *Geosmin* is the scientific name of the chemical that makes this odor, a name derived from the Greek words for "earth smell". It is commonly a metabolic by-product of fungi and other microorganisms living in the soil (Paterson, Venâncio and Lima 2007). The same chemical is also responsible for the evocative *petrichor* smell following rainfall. Strangely enough, human noses are particularly sensitive to this fungal odor (cf. Polak and Provasi 1992), which can be described as earthy and moldy (Rousseaux *et al*. 2014, 115). The reason for our sensitivity may be that it is a sign of spoiling food, but it is not always a smell we avoid, because geosmin is also what gives red beets their earthy taste (cf. Lu *et al*. 2003). Like an invisible

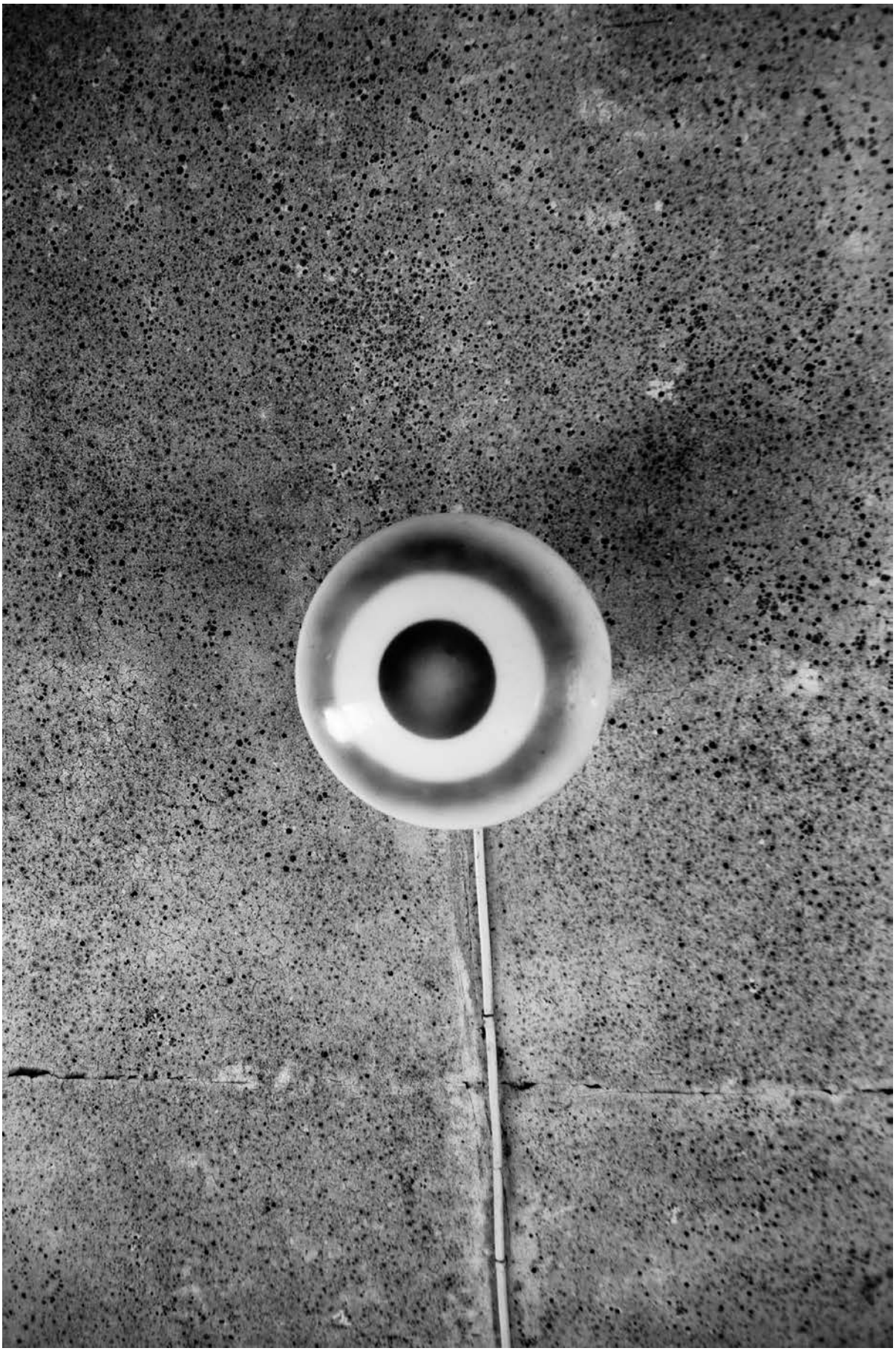
cloud, the odor permeates every corner of the garden, but can also drift with the wind and extend an olfactory presence beyond the borders of the property. Fungi are everywhere in the garden and most other places across the world.

Retiro has an overabundance of cellulose in form of living and dead wood, but also in form of anthropogenic structures such as the villa and the gardeners' residence. The buildings are themselves massive biotic objects, with an inner structure composed of large, horizontally interlocked timber logs. Where there is cellulose, you will find fungi. Under the exfoliating white paint on the walls of the villa, one can gleam the remnants of ochre paint, but there are also other odd transgressions marring the weather-beaten façade. The white paint unintentionally acts as a contrasting agent to highlight the presence of algae and the rather insidious and all around infamous genus of the fungi kingdom – the black mold (*Stachybotrys*). The same effect can also be located in one of the dilapidated bedrooms in the gardeners' residence, where the ceiling is covered in thousands of black spots giving away the presence of sporangiums brimming with black spores. The mold, specifically *S. chartarum*, which is often associated with buildings (Miller 2011, 184), can create health problems for both animals and people by producing airborne mycotoxins (cf. Vesper *et al.* 2000). The fungus thrives in humid cellulose-rich environments, and the buildings offer an irresistible habitat (cf. Miller, Rand and Jarvis 2009). Without being perfectly balanced by keeping humidity in check through heating and maintaining a waterproof layer of paint, old wooden houses such as the ones in Retiro become fungal gardens brimming with readily available nutrients. Humans, thus, are inadvertently talented at creating environments perfect for black mold to colonize.

In the basement of the villa, which consists of meter thick walls of mortar and stone, one of the boarded-up windows and its frame has at some point been ripped straight out of the wall. This had was undoubtedly the work of humans, but the burglars were probably aided by fungal collaborators. Looking closely at the wooden frame, one can observe that the wood is brittle and crumbly, probably facilitating the forced entrance by making the wooden frame more persuadable. This is the blocky mosaic of "brown rot", caused by fungi metabolizing carbohydrates and cellulose in the wood, leaving behind modified lignin (Schmidt 2006, 135–138). Fungi can transform things with its metabolic abilities, making them more malleable in such a way that it literally opens up new paths. Even in a highly fragmented state wood that has been affected by brown rot lasts longer in humus because of its modified lignin (Schmidt 2006, 137). Such lasting fragments and detritus are some of the *nachleben* (cf. Tamm 2015) or "afterlives" initiated by a heterogenic collective of fungi. The derelict garden that we

encounter today is just as much the afterlife of fungi as of human influence in the past, and represents distinct but fused human and non-human legacies (cf. Farstadvoll 2019). An example of this can be encountered on the exterior wall of the privy connected to the gardener's residence. The wall is coated in a biological collage of microorganisms, creating a patchwork of colors consisting mostly of green and black among the remaining patches of pale-pink paint. Human eyes, however, are attuned and attracted to the vibrant blue-green fungal impressions dotting the biotic tessellation. These striking traces probably consist of the pigment *xylindein* produced by fungi of the genus *Chlorociboria* (cf. Edwards and Kale 1965). This "green rot" is a secondary metabolite produced within the fungi's hyphae, which diffuses into and stains the substrate (cf. Schmidt 2006, 120; Robinson and Laks 2010). This kind of "green" wood has been employed in several instances in artistic work, such as in woodcraft (Rolfe and Rolfe 1925, 161), and as a pigment in paint (Blanchette, Wilmering and Baumeister 1992, 230). At Retiro, this pigment recalls a fungal aftermath, as a reminder that also non-humans create redundant pasts affecting the present. Why fungi have different colors is still largely a mystery, which alludes to an ecology that, in our perception, extends beyond simple cause and effect (Karlsen 2014).

Having focused on the "aftermath" it is interesting to note that the fungi inhabiting Retiro can as well be part of an ecological heritage, or mycelium, extending to a time *before* the garden was constructed. A pastureland dotted with meadows, copses, and farmland, as still remembered by remnants of old stone fences and clearance cairns poking through the carpet of moss and accumulated vegetation. Before the garden's construction, the property was described as unkempt, hilly and the least pretty place in the area (Jakobsen 1953, 436), which resonates with the biologists' assessment of the present-day Retiro quoted in the introduction. Parts of this autochthonous landscape were integrated into the landscaped architecture of the garden, interweaving the new organisms with old, instigating ecological upheaval and succession. The early stage of the garden was in a sense defined by an anthropogenically initiated "*throwntogetherness*" (cf. Massey 2005). In the golden days when it was tenderly cared for by the hands of attentive gardeners, the garden was perhaps more thrown together, ecologically speaking, than in its presently derelict character. By this, I mean that a previously unmanaged ecology was replaced with a precarious and artificial ecology that hinged on a balance provided by the constant upkeep by human hands and tools.



Fungi are part of Retiros nutrient-scape (cf. Farstadvoll 2019), a mycological topography of metabolizable tissue and dangerous mycotoxins. Even the gelatinous yellow brain fungus is edible by humans despite its unappetizing appearance. Encountering a place through its nutritional properties and taste is fundamentally ecological, and one might even claim that ecology is the oldest science, because humans have always been driven to understand and adapt to their non-human environment (Begon, Howarth and Townsend 2014, 5). In turn, it is equally important to note that non-humans also adapt and react to anthropogenic influences. Fungi have almost all the sense humans have – they can "taste" chemicals and sense surfaces (Bahn *et al*. 2007). When walking through Retiro, plants, fungi and other organisms sense the soles of our boots, our limbs, and respiration, which comes into contact with the environment. The realization that it is not only we who "sense" a place, but that other beings can also sense our presence and the environment, ought to open up possible reflections on what we think heritage and heritage experience is.

In heritage conservation fungi is seen as one of the major agents leading to degradation of material culture (e.g. Caneva, Nugari, and Salvadori 2008; Sterflinger 2010). In the eyes of ecologists however, fungi are major actors in creating and maintaining biodiversity and general ecological processes such as soil formation (cf. Peay, Kennedy and Bruns 2008; Wallander 2014). Fungi do not discriminate between tree stumps in the forest or venerable heritage architecture. Heritage is nutrition and habitats for fungi, while mycophagy is part of the culinary heritage of many human cultures (cf. Pieroni *et al.* 2005). In some interpretations of Leviticus, fungi damaging buildings is even mentioned as "*leprosy on houses*" (Kauserud *et al*. 2007), which is a reminder of the ever-present fungi, even in ancient circumstances. As they literally permeate every environment on earth, fungi can be unruly and impossible to control (cf. Money, 2007; Tsing 2015). As such, it is an inseparable and inherent part of the aesthetics and ecology of Retiro, facilitating patterns and interactions that necessitate and create the presence of the garden, and which playfully overflow and percolate into neighboring places. Without fungi Retiro would not be, or at least it would be something else. When structures as Retiro are assembled, with its biotic landscape architecture and massive wooden buildings, ecological relationships and struggles are inevitably established. Cohabitating with black mold is not necessarily preferable, but it is an unavoidable part of every entanglement with wooden buildings. As such, fungi are emphatic reminders that heritage can't be excised and placed alone on its own pedestal, elevated above and beyond the very stuff it consists of.

Abducted aliens

The fungi growing in Retiro are generally endemic to the local environment or cosmopolitan species found around the globe. In contrast, a substantial amount of the plants found here are species translocated from foreign biotopes. After the gardener and the dutiful "weeding-women" ceased their work, many of these non-native plants succumbed to the alien climate and were outcompeted by other plants. However, some of them survived and even flourished (e.g. Vestad 1961, 16). After being left to its own device for half a decade Retiro has therefore become an unintended "laboratory" for studying the spread of introduced species (cf. Jordal and Gaarder 1995, 62, 128). In a recent survey of the biodiversity on the property, the biologists recorded several alien species such as silver fir, sycamore, and lesser periwinkle (Gaarder and Vatne 2013, 8). In conclusion, the report recommended exterminating the non-native species that exhibit high risk for the local environment. Many of the original plants that survive thus have the double characteristic of being both heritage and pests.

One of the most notorious inhabitants found in the garden is the Japanese knotweed (*Fallopia japonica*): a hardy perennial that annually grows smooth stems that form near impenetrable thickets. As the name implies, the plant was originally native to East Asian countries such as Japan (Conolly 1977). It is sometimes described as a plant that can outlive the gardener and the garden itself (Bailey and Conolly 2000, 93). The most substantial part of the knotweed is its network of rhizomes, a large web of roots located underground that enables a knotweed colony to spread out and infiltrate its surroundings. Its rhizomes can extend as long as seven meters away from the stand and reach as far down into the soil as two meters (Child and Wade 2000). It has an amazing ability to adapt to different soil and climate types (e.g. Rouifed *et al*. 2012). In an old catalogue from the mid-19th century knotweed is said to have many positive properties, such as being both ornamental and medicinal, and not least inextirpable (Bailey and Conolly 2000, 94). In non-native habitats, it usually propagates and spreads asexually through vegetative fragments from its rhizomes and other parts of the plant (cf. Conolly 1977; Hollingsworth and Bailey 2000). This ability to grow clonal colonies through vegetative fragments is one of the reasons the plant is so hard to exterminate and is, thus, viewed as a terrible pest, listed among *100 of the World's Worst Invasive Alien Species* by the International Union for Conservation of Nature (Lowe *et al*. 2000). In Norway, it is recorded on the so-called "black list" as a highly invasive and foreign species, and placed in the "severe" impact category (Gederaas *et al.* 2012).

The Japanese knotweed was probably introduced to Norway in the 19th century (Schübeler 1886, 592; Fremstad and Elven 1997, 7), making it an enduring addition to the

biodiversity of the region, even if it at the same time threatens it (e.g. Goodenough 2010; Schlaepfer, Sax and Olden 2011; Richardson and Ricciardi 2013). It is not known when the knotweed was first introduced at Retiro, but its presence was first recorded in the early 1960s in the flower garden by the villa and the landscape garden west of the carriage entrance (Vestad 1961). The knotweed inhabiting Retiro today is not one hegemonic blob, but consists of several separate stands. The colonies are mostly located in the southern part of the garden, which has open areas with a lower density of trees. The places where the knotweed grows mark the general areas where they were planted, and function as lingering memories of an aesthetic order of the past. It is quite rare to see the Japanese knotweed bloom in Norway, and for some reason it is becoming an increasingly scarce phenomenon (cf. Fremstad 2012). But Retiro remains one of the places one can see the small white flowers in full bloom in late autumn.

Recently a large number of the knotweed colonies in Retiro started to wither and disappear. It turned out the colonies had been sprayed with herbicide. Not many days after the colonies were sprayed, however, the brown patches of wasteland quickly became botanical battlegrounds of pioneering species fighting to inherit precious square meters of sunlight. In a twist of irony, one of the pioneer species was the herbaceous perennial creeping jenny (*Lysimachia nummularia*), which is listed in the "high impact" category, just below the knotweed (cf. Gederaas *et al.* 2012). Moreover, several smaller colonies of knotweed have survived the attack, hiding amongst the dense vegetation around the gardener's residence. Small patches have also moved beyond the property border, temporarily escaping the poison. Being an example of heritage that fights backs with a rhizomeatic persistence, there might still be a possibility to see the knotweed bloom in the garden. Thus, because of their autopoietic persistence, plants such as knotweed can be regarded unforeseen futures, memories of consequences that overlooked or underestimated their ecology.

The Spanish slug (*Arion vulgaris*) is another sticky alien that has made the garden its home. In northern Europe, the brown slug is frequently found in gardens, wastelands, cemeteries, ditches, and small grasslands (cf. Kozłowski and Kozłowski 2011; Slotsbo 2014), which are usually anthropogenic landscapes. The slugs eat a wide range of plants and animals it can catch (Hatteland *et al*. 2013, 14). In Norway, this rather insidious slug has become one

of the most reviled icons of invasive species, probably because of massive media coverage and the animal's recognizable appearance (cf. Qvenild, Setten and Skår 2014). The narrative regularly repeats stories about the slug as a pest in gardens and the attempts and methods to exterminate the gastropods.

The slug is a rather recent inclusion to Retiro. Being first recorded in Norway in 1988 (Hatteland *et al*. 2013), the town of Molde was one of the three places the species was first recorded (see von Proschwitz and Winge 1994). Partly similar to the knotweed, slugs of the *Arion* genus can self-fertilize and start colonies from one individual (Hatteland *et al*. 2015, 317). The Spanish slug took advantage of an inviting opening in the local ecology, but was not alone in its actions. The eggs of the slug are usually found in soil and can consequently be dispersed through dirt sticking to shoes or as stowaway in potted plants (cf. Slotsbo 2014), which makes their distribution ecologically intertwined with our movements and artefacts. The slug is certainly not unique to this particular garden, but it is nevertheless one small piece in the material composition, ecologically rewiring the place through its sluggish rhythms and materiality. Whatever definition one may give tangible heritage – as places – it will always and inevitably be spaces that are shared.

In the instance of Retiro, the knotweed did not invade a pristine ecology, but was rather "abducted" and grafted into a different environment. Retiro has never been "pure", not even before the garden was built. These alien species were translocated to a place that already was in some way different from an imagined pristine environment, untouched by humans and their non-human entourage (e.g. Tassin and Kull 2015). If the foreign plants and animals didn't belong here, then Retiro can be categorized as an invasive place. The knotweed and all the other non-native organisms that make Retiro can represent a sort of virulent or perhaps "pathogenic" aesthetics. If you are not learned in botany, exotic and aesthetically alluring species such as the knotweed or goat's beard (*Aruncus dioicus*) might not seem that out of place. However, the Anthropocene and current global ecological crises can in a paradoxical way appear disquietingly "attractive" – from enormous algal blooms draining lakes of oxygen triggered by agricultural runoff to beautiful red sunsets created by anthropogenic aerosol suspended in the atmosphere. Just as we cannot always control what we inherit (cf. Olsen and Pétursdóttir 2016; Pétursdóttir 2017), it also follows that we do not always know whom or what is the "heir" of a place. Consequently, memories are ecological objects if they are given room to be intertwined with a material environment (e.g. Olsen 2010; Olivier 2011).

Feral artefacts

The first things that come to mind when delving into the ecology of a garden are "natural" objects, such as trees, flowers, and soil. However, Retiro is also inhabited by a diverse range of anthropogenic artefacts and structures, such as the ruins of a Victorian hothouse, stacked stone terraces, man-made ponds, drainage channels, clearance cairns, and broken chain-link fences. These objects all have their own respective places in the local ecology: for example, the fences dictate the movement of large mammals and the efflorescent concrete of the hothouse slowly leaches mineral nutrients into the surrounding soil. At the dawn of the Anthropocene, the presence and interaction of manmade objects with ecosystems has come into focus. An interesting manifestation of this is that display cases in the zoological exhibit at the natural history museum in Oslo have been infiltrated with modern trash. One of the displays shows a taxidermied male mallard (*Anas platyrhynchos*) swimming in a pond accompanied by a plastic bottle. Similar to the duck the bottle has been given a placard with taxonomic information, such as species, family, order, offspring, size, and distribution. The placard for the "species" *plastic utrem*, is certainly more illustrative and metaphoric than a serious attempt to make an artefact taxonomy. Nevertheless, this placard is a subversion of a nature/culture dichotomy, by treating an anthropogenic artefact in the same way as living organisms.

When the last swan (*Cygnus olor*) that graced the ponds in Retiro died and ended up as stuffed animal on a wall in the villa (Parelius 1982[1953], 58), new organisms as well as things moved in. In the course of surveying Retiro, the aforementioned *plastic utrem* had a ubiquitous presence, not to mention its close relative *alum utrem* and *vitrum utrem*. While plastic and aluminum bottles are relative newcomers, the glass bottles have run wild in the garden since its construction. Their presence is vaguer than the newcomers' because most of them have had the time to sink into the soil thanks to the tilling of earthworms, and not least because they have become substrates for a range of different organisms. When seen as part of an ecosystem, regardless of their potentially damaging qualities, objects such as plastic bottles can be understood both as invasive and pioneering objects. Ecosystems take time to incorporate and react to new objects. A good example is when windows constitute a collation hazard for birds because they have not had the time to adapt their senses to the materiality of glass (e.g. Martin 2011).

Within a grove of spruce trees (*Picea abies*) in the south-western quadrant of the garden, I stumble over the remnants of plastic lanterns, a recent example of invasive objects. A large cemetery borders Retiro in the west, which is a likely origin for these lanterns, but the

question is how they ended up under a spruce tree. The most likely explanation lies in a known phenomenon of birds such as crows, magpies, and seagulls discovering that the stearin in lanterns and candles is edible (e.g. Higuchi 2003), even if it is not digestible like tallow. The lanterns found at cemeteries is usually made out of brittle plastic that birds have learned can be smashed open by dropping them from heights. This example of animal vandalism has been observed at the local cemetery (cf. Heen 2012). Birds are important for the dispersal of seeds for a large range of plant species (e.g. Howe and Smallwood 1982), but as seen in Retiro they can also disperse manmade objects. Though not seeds, the lanterns are objects that affect the environment in different ways, such as by dispersing involuntary memories, absorbing and leaching chemicals, or sheltering small ponds of water forming habitats for microorganisms. Birds, modern mortuary practices, and dense vegetation create a strange ecological interplay with weird mixtures of anthropogenic and organic components.

As a contrast to the recent material inclusions drifting into Retiro, there are older remnants persisting in the evolving landscape. These objects are often well established, meaning they have had the time to become integrated with the local ecology. One notable example is an assemblage of creamy-white statue fragments inhabiting the undulating depression that once was the "Atlantic Ocean" pond, now a mire covered with grass and small saplings drawing nutrients from the old sediments. The busiest paths in the garden congregate towards the pond, where the brim forms a natural roundabout. The creamy-white fragments were originally part of a statue depicting Triton riding a hippocamp while blowing into a conch. There is evidence that these vestiges draw the attention of passersby, for example, that the more ornamental fragments have been poached while the unwieldy and indistinct pieces have been left alone. This is one example of environmental selection and sorting found at Retiro, where sometimes it is the least "attractive" things that persist. After observing the haphazard collection of fragments over four years, it is evident that they are moved, mostly by humans. Some have probably been posed to create picturesque scenes for photography, and other times they have evidently been played with by children. The remaining fragments have however not yet strayed far from the original pedestal.

It is not only humans that have been drawn towards the ceramic shards, as apparent by the layer of biofilm covering their surfaces. These microscopically thin layers consist of algae, cyanobacteria, lichen, and other microorganisms, which act as a living and dynamic patina. On specific types of substrates, some types of biofilms have been documented to have bioprotective properties (e.g. Cutler *et al*. 2013), in other words they can help preserve the object they grow on. Inadvertently, these microorganisms care for the substrate they extract nutrients from and live on, and are in turn preyed upon and generate a habitat for creatures such as the Spanish slug. In the center of the curly tail of the hippocampus, a small pond regularly forms from rainwater. In this artificial cavity, the fake marble is stained green from the algae and bacteria taking advantage of the humidity. On closer inspection, the surface of the ceramic material is porous and rough, inadvertently creating a topography where organisms such as lichen, algae, bacteria, and moss can literally get a hold. Anthropogenic materials regularly interface with other non-humans, as for example through microscopic pores on the ceramic surface of the statue fragments, or the depression of the "Atlantic Ocean" collecting organic detritus that decompose and become a source of nutrients for plants. Retiro has a reciprocal and inherent relationship with a "heritage biota" (cf. Viles and Cutler 2012), which make it the place it is today. Autopoietic organisms and allopoietic

objects such as disposable plastic lanterns are both equally important in their own unique ways for the being and becoming of a place.

Conclusion

Regardless of what the future may bring, "Retiro" is neither retiring nor retreating, but rather developing and advancing, notwithstanding the inevitable ecological upheaval that looms on the horizon in form of urban "revitalization". This text has engaged with Retiro as it is encountered today in its derelict state. The presence of fungi demonstrates that the heritage of Retiro in many ways depends on the very matter it is made of – organisms that usually go unmentioned or are even regarded as damaging. The introduced plants and Spanish slug highlight the tension and dichotomy between foreign and native, and demonstrate that heritage may exist as open places leading to unforeseen "heirs". The many fragments of distant and recent pasts that constitute the landscape allude to the complex afterlife of anthropogenic objects, where they gain unintended roles in the local ecosystem.

These examples demonstrate a small piece of the complex non-human undercurrents, originating both in distant and recent pasts, which make up the specific ecology of a place like Retiro. The artefacts that contribute to the feral landscape can infiltrate consciousness as well as bodies, like black mold spores clinging to lungs. The human presence at Retiro is ephemeral, activated and partly dictated by Retiro's ecological character. Despite their disproportional impact on the environment, there are mostly no people present within its boundaries, and they make up an unsubstantial part of the biomass. As heritage, the coagulating collage of human and non-human presences, reflect an ecology in transition, heading in unknown directions. Heritage definitions that also include non-humans forces us to acknowledge the intricate ecology of a site also inform on the human experience, but without reducing a place to human conclusion – there is always something more just behind what we currently experience. This thought also correlates with an idea that science and other endeavors seeking to understand things are often more about discovering and broadening the number of known objects than reducing them to exactitudes (cf. Harman 2013, 97–99).

This begs the question of how places of heritage can be explored as inseparable from a diverse non-human realm, crisscrossed with the strange *umwelts* of black mold, knotweed, and fragments of ceramic statues. Retiro is an inviting place, but not only for the reasons that most likely become highlighted in context of history, archaeology or municipal planning. To grasp the full extent of heritage places and their ecologies, it is, I would argue, necessary to establish connections also to things that might usually be seen as inconsequential or even

irrelevant. This ecological practice is one of joining futures, of holding different loyalties and severing bonds, of acknowledging the particular presence of fungi and polystyrene packaging. The derelict garden, as observed by the biologists surveying it is, I would claim, an unintended experiment for the dispersal of plants and other introduced lifeforms. But it is also a heritage experiment, absorbing some of the material aftershocks of the modern and prosperous society that envelops it. Like a mire that can absorb torrential rain and avert floods, or a mangrove forest that protects the land from devastating storms, Retiro may from an ecological perspective also hold an absorbent and filtering character, inviting things in while rejecting others. In one way, Retiro is reconstructing, or perhaps more succinctly, *growing* dynamically without any clear plan for an imagined future. The appreciation some ecologists have started to show for the potential beneficial aspects of novel ecologies on the preservation of some species (e.g. Maclagan, Coates and Ritchie 2018), can serve as an inspiration to look closer at the ecological complexity of heritage environments that sometimes get left behind in the hunt for a pristine past. This is not a heritage that asserts comforting histories about who we were or are, but rather one that makes visible the inheritance of an uncertain future.

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