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## **“But where the danger lies, also grows the saving power”: Reflections on Exploitation and Sustainability**

### **I**

Few historians have thought more deeply about exploitation and sustainability than Jane Carruthers. Her interest is in the preservation of flora and fauna, in the story of national parks and the parks’ “saving powers.” Her engagement is in the potential of setting aside land to create a better world; and her concern is for the destruction of natural wonders and human livelihoods.

### **II**

In March 2013, German Chancellor Angela Merkel spoke at an official ceremony to celebrate the tricentenary of the German term for sustainability—*Nachhaltigkeit*. “The term has become a principle of survival,” she said. And, as is always the case on such occasions, Germany’s achievements in the area of sustainable development were roundly praised. “In the beginning,” according to Merkel, “was Carl von Carlowitz”, a baroque aristocrat in Saxony with a long, curly wig and a knight’s armour. He was the first to use the term *Nachhaltigkeit* in his massive tome on “sylvicultura” (forest culture), published in the early eighteenth century. His ideas of sustainable forestry were an export hit. They conquered the world.

Carlowitz was in charge of the royal Saxonian silver mines. For the process of mining and smelting he needed a large amount of charcoal and a huge number of trees. Sustainable growth—the regrowing of trees—was a necessity for Carlowitz: because he wanted to efficiently exploit one resource (ore), he needed to conserve another one (wood). How much, if anything, does Carlowitz’ notion of *Nachhaltigkeit* have to do with the idea of “sustainable development” and the spell of Rio 1992?

### **III**

Carlowitz may have been the inventor of the term “nachhaltend” but he was not the inventor of sustainability. Long before him, the Venetians had done everything to conserve their forests. They had an insatiable appetite for wood. The reason was simple: without wood they had no ships, and without ships no trade, no ability to put up a fight, no power,

no riches. For hundreds of years they had set aside spaces—reservations—for trees. But in the sixteenth century, when both the fleet and the ships themselves grew larger (and thus also the fear of wood scarcity), they changed their thinking. Time became their new category of thinking, time instead of space. How long, they asked, will specific trees take to grow, providing us with enough wood for oars and for masts and for the body of ships in one hundred or two hundred years' time? And how can we ensure the growth and re-growth of our trees? Venetian forestry was better than its reputation suggested, and surely better than that of the French or the British in later centuries, whose forests disappeared at record speed. Indeed, in the end, the decline of Venice had little to do with a lack of wood. The Venetians lost the spice trade to the Portuguese who had better ocean-going ships. And, of course, Napoleon played no small part in the downfall of Venice

#### IV

In their attempt to prognosticate growth and to increase forestry yields, the Venetians had excluded local (peasant) users from most of the state reserves. The focus of the state foresters was on the production of high-quality wood, not on the livelihood of villagers. In fact, in the eyes of forest superintendents, the rural population had to be prevented from “abusing” the forest: from collecting firewood and thatch and fertilizing plants, from gathering fruits and berries. Strangely, however, despite all the planning and calculating, state forest yields declined much more rapidly than those of the locally used forests. The narrow focus on production materials for ships discriminated against the local communities in the countryside. Why were the voices of the peasants not heard?

#### V

The invention of sustainability was inextricably linked to the awareness of scarcity. Those with few resources soon learn that they can run out. Do the origins of our modern environmental consciousness really go back to the colonial world of small islands, as Richard Grove would have it? Was it really the colonies that taught the Portuguese and Spanish and British that there are limits to growth? The opposite might in fact be true, or at least be another way of looking at the truth. Colonies, in fact, were the drivers of greed. Is a complacent empire the logical consequence of too many colonies?

#### VI

It is one of history's great surprises that variously Carlowitz, the Venetians, the colonial British, and the colonial French were able to overcome their various wood shortages.

How did it come to pass that the West was able to summon enough energy for the huge industrialisation of the nineteenth century? All the forests of England could never have produced enough for this revolution. The Europeans' new hunger for energy far outpaced the rate at which trees grow. The largest factor here was the shift from solar to fossil fuels: from wood to coal. The changes that drove the world in recent centuries were made possible by the colonization of the vertical, of layers deep under the surface of the earth. But colonisation of the horizontal was just as important, the expansion into the landscapes of new worlds: the Americas.

Nature played into the hands of the colonising Europeans. Bacteria and viruses from the Old World decimated the indigenous population of the Americas. The settlement of the New World spelt doom for the "Natives" (and subsequently also for hundreds of thousands of Africans) but as far as the Europeans were concerned, they had struck gold. They occupied America. The European colonists transformed the new world radically and irreversibly; and the environmental riches of the New World transformed Europe. Crops such as sugar and cotton from the New World, and minerals picked out of the earth, were a vital factor in Europe's development. Without the discovery of coal, and without the "discovery" and colonization of America, Europe would probably be something like China, by which I mean a largely rural continent. The discovery and storming of the Americas made not just this continent into a new world, but Europe too. But what kind of world was it? What was so new about America?

## VII

All of the Old World's worries about sustainability were brushed aside with the sudden availability of land in the New World. America provided an almost unimaginably vast canvas, rich in all kinds of resources. The continent became an "immense gaming table" (James T. Callender). The winners in the game were those who could make the highest bids. The plantation owners and frontier farmers progressed rapidly: if the harvests began to falter or fail, there was always fresh land to be had further west, new perspectives. The speedy process of land acquisition, preparation, cultivation, and sale to a new owner—the transformation of land into commodity—was a recipe for economic success. The creed of the "land of unlimited possibilities" has its roots in the American space, in the apparently boundless landscapes of the continent. Stories are reductions of reality, but they boil things down to their essence. From the European settlement of the Americas right up until the end of the Second World War, the Americans didn't want to hear

anything about limits to growth or prophecies of downfall. The “American way of life” was founded on a belief in wealth as a means to happiness, on the right to an ever-higher standard of living, on consumption and economic growth. That prosperity is something everyone can aspire to (at least those who are on the right political side) was and is the essence of the American dream. This dream spread, initially from the New to the Old World and subsequently outwards in all directions, to Korea and Australia and South Africa, to Brazil and China. Without the European discovery of the Americas, history would have run a very different course. Would we have recognised our limits sooner? In discovering America, which gave us both the sentimental and intellectual notion of boundless abundance, perhaps we Europeans did not strike gold after all.

### VIII

The illusion of having sufficient space and sufficient resources was perhaps the tragedy of modern Western history. It gave us the feeling of boundlessness and took away any sense of urgency. It also prevented us from realising that our exploitation of resources was accelerating at record speed. Extraction and exploitation of our environment had always been the price for a life and livelihood on this planet. It’s nothing new. Even the utilisation of non-renewable resources is old hat. What is new is only the revolutionary acceleration and global reach of human meddling in the environment.

Humans consume oil in what is, in geological terms, the blink of an eye, oil that nature took billennia to produce. The Venetians, and Carlowitz, were able to think in terms of generations and centuries and in categories of sustainable regrowth. Aside from the centuries, people in the Early Modern period knew only one other unit of time: eternity. How very different are the units of time by means of which humans map themselves and their impact in the twenty-first century. Traces of the quicksilver used in the American West in the second half of the nineteenth century in the hydraulic mining of gold has spread via remote streams and rivers, via marine organisms and fish, and is today to be found in human bodies in all corners of the globe. Nuclear waste and poisonous substances are produced in such high concentrations and in such amounts that they will still be unfolding their fatal effects in tens of thousands of years. The half-life of the radiated fuel elements put into the world’s first final storage facility for nuclear waste in Finland is a minimum of ten thousand years. Who can secure Pandora’s nuclear box for our ancestors one hundred thousand years from now?

## IX

The speed and the extent of our meddling in our environment have increased rapidly in the last two hundred years. Almost two thirds of the surface area of our planet are cultivated or pasture, 90 percent of plants have been bred by humans, cities are becoming the most frequent ecosystem (and therefore a new soil layer), plastic has become a new kind of sediment, and geologists tell us that anthropogenic changes to the surface of the earth—through agriculture, settlement, and the construction of roads and canals—will result in a rate of erosion some 30 times greater than the historical average. Many of these changes are irreversible. Many have fatal consequences. CO<sub>2</sub> emissions lead to species extinction, the acidification of oceans, the death of ecosystems, deforestation, the loss of livelihoods and habitats. Knowledge gleaned from fossil finds indicates that 98 percent of all species that ever existed are now extinct.

Our intellect allows us, in contrast with all other species on this planet, to recognise that we (along with all other creatures) must eventually become extinct. We want to avoid it, but while some courses of action will prolong our earthly existence, many will hasten the end of humanity. The poet Friedrich Hölderlin, in his classically inspired hymn “Patmos,” calls on human hope in the face of imperilled creation: “But where the danger is, also grows the saving power.” In retrospect, with reference to history, we know that this sentence is also true when reversed: “where the saving power is, danger grows.”

Environmental history is full of stories of the “conquest of nature” (David Blackbourn). The transformation of riverscapes, for example, took place in the name of rationality, progress, and modernization, but the unintended consequences of these actions were ever new vulnerabilities and disasters. Stories of the technical domination of rivers are everything but sustainable. Their protagonists have more in common with Sisyphus than with “divine engineers”—for again and again, nature turns against those who would be victorious over it. Often it is precisely the principles that should ensure stability that lead to collapse—the fixation on a solution, rather than experimenting with alternatives.

## X

Talk of “sustainable development” must not just take account of those risks that humanity itself has created, and which have been around for millennia; it must also keep in mind the fact that the conditions under which we live are not enduring: it must include in its reflections the fragility of the system. We have our gaze set increasingly on the

future, and on ever shorter periods of time. Unlike Carlowitz and our ancestors in the Early Modern period, who took the time of nature seriously—the duration of human lives and the regrowth of the forests—we mark time from agenda to agenda, from one electoral cycle to the next, and from the second-by-second fluctuations in the exchange rates on Wall Street. At least as important as our gaze into the future is our view of the past, which helps to remind us what we have achieved, and, more importantly, what—in recent history and in *longue durée*—we have lost.

The history of the New World, which for a century and a half was the history of sustainable growth (recessions hardly dent the upward curves), shows that this game has produced not only winners but also many losers—soils and buffalo and minorities, who today live with the stench and the poisonous waste of progress. If we are to use the experiences of history for our future good, it is important that our narratives do not only reflect the permanent flux in the relationship between humankind and the environment, but also that we inscribe the ambivalence of danger and salvation into both our stories and their interpretations. Jane Carruthers' stories do just this. Sustainable stories. Stories of vanishing herds and of the survival of wildlife in altered circumstances—on farms and parks in South Africa; stories that take a stand against the discrimination of weaker groups in the name of large-scale meddling in the environment; stories that show that major historical changes almost always follow the observation of smaller spaces and local transformations, and that ideas of a better environment travel across both time and space, and shape-shift as they do so.

Sustainable stories are characterised by their evocation of positive images alongside their warnings against destructive changes in the world; in this way they can reveal to us both faulty decisions and new courses of action. We need more stories of the kind told by Jane Carruthers.

## Further Reading

In 2013 the German term for sustainability—“Nachhaltigkeit”—was much discussed because of its tricentenary: Carl von Carlowitz’ work, in which he discussed the principles of sustainable (“nachhaltend”) forestry, was published in 1713 under the title *Sylvicultura oeconomic oder Haußwirthliche Nachricht und naturmäßige Anweisung zur wilden Baum-Zucht* (Leipzig: Johann Friedrich Braun, 1713). For a discussion of the conceptual history of sustainable development see Ulrich Grober, *Deep Roots: A Conceptual History of Sustainable Development (Nachhaltigkeit)* (Berlin: Wissenschaftszentrum Berlin für Sozialforschung, 2007). For a more recent and global discussion see Iris Borowy, *Defining Sustainable Development for Our Common Future: A History of the World Commission on Environment and Development* (London and New York: Routledge, 2014).

I borrowed my argument about sustainability in Venice from Karl Appuhn, in particular from his essay “Inventing Nature: Forests, Forestry and State Power in Renaissance Venice,” in *Journal of Modern History* 72 (2000): 861–89. For a comparison of industrial Europe with China see the works of Kenneth Pomeranz, in particular *The Great Divergence: Europe, China, and the Making of Modern World Economy* (Princeton: Princeton University Press, 2000). For a recent discussion of ecological imperialism and transatlantic history see John R. McNeill, “Envisioning an Ecological Atlantic,” in *Nova Acta Leopoldina* 114 (2013): 21–33. Other works by authors mentioned in the text include the ground-breaking books by David Blackbourn, *The Conquest of Nature: Water, Landscape and the Making of Modern Germany* (London: Jonathan Cape Press, 2006), Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (Cambridge: Cambridge University Press, 1995), and Jane Carruthers, *The Kruger National Park: A Social and Political History* (Pietermaritzburg: University of Natal Press, 1995).