# John Muir, John Ruskin and the Anthropocene:

## *Modern Painters IV* and *Studies in the Sierra*

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### Why Muir and Ruskin?

"Among the pantheon of American environmental writers, no single figure looms larger than John Muir (1838-1914)," wrote James C. McKusick in his pioneering book *Green Writing: Romanticism and Ecology* (McKusick 171). Although Thoreau scholars might be at the front of a long queue to challenge such a claim, it is easy to understand why an American ecocritic, making the first study of the transatlantic influence of Romanticism upon canonical American environmental writers, would write this of John Muir, the founding father of the American conservation movement, "inventor" of national parks in the popular American imagination and founder of the Sierra Club. Partly because McKusick is concerned with the influence of Romantic poets on Muir's work and vision, he makes no mention of John Ruskin. But there is a strong and complicated claim for the influence of Ruskin's writings on Muir's vision, and particularly on one of his early but neglected works, *Studies in the Sierra* (1874).[1]

That John Muir came to be reading Ruskin in a little cabin in the Yosemite Valley of California in 1872 should not come as a surprise. Ruskin's works were obviously creating quite a frisson of interest in America, as perhaps is indicated by the fact that Muir's first reading of Ruskin was in copies loaned to him by his friend the Oakland superintendent of

1 Michael P. Cohen is the only Muir scholar to give serious consideration to *Studies in the Sierra*, although he takes Muir's comments on Ruskin at face value (Cohen 39-40).

schools, J. B. McChesney (Muir, *Life and Letters* 186). Another Californian nature writer of the next generation, Mary Austin, records in her autobiography that her father bought first editions of Ruskin's works as they were published (Austin 34). In the "Conclusion" to *Ruskin and Environment* (Wheeler 187-194) I first suggested that Ruskin's influence upon the environmentalism of John Muir deserved further research, Ruskin's notion of the earth as "a great entail" (Ruskin 8.233), for example, being similar to Muir's conception of National Parks. In the chapter titled "Muir's Mode of Reading Ruskin" in *Reconnecting with John Muir* (Gifford, *Reconnecting* 75-85) I argued from the evidence of Muir's annotations in his own volume of Ruskin's *Modern Painters IV* (1856) that Muir's repeated dismissal of Ruskin in his letters was a strategic distancing from what had actually been a major influence. A straw man had been created by a deliberate misrepresentation that might provide a classic example of what Harold Bloom characterised in his book title as *The Anxiety of Influence*.

Ruskin's purpose in writing *Modern Painters* was to defend the paintings of J. M. W. Turner and to explain the reality behind Turner's unpicturesque impressions. Volume IV focused upon mountains as Turner's subject, but became an explanation of mountain forms that was as much geological as aesthetic. The conception and form of Muir's essay series *Studies in the Sierra* (1874)[2] appears to have been closely modelled on Ruskin's *Modern Painters IV* (1856) and, although Muir's purpose was more scientific than aesthetic, its tone is often lyrical, poetic and even spiritual. My interest here is to bring an ecocritical close reading to both the literary and the ecological similarities and differences between these two writers in these texts, which, for each of them, are early works, somewhat aside from the rest

2 These seven essays were published in serial form in the *Overland Monthly*, San Francisco, in 1874-5 and republished in the *Sierra Club Bulletin*, Vols IX-XI (1915-1921), but were not published in book form until 1950 by the Sierra Club, which may account for their neglect by Muir scholars. They are now in Muir, *Life and Letters*, 393-478.

of their later *oeuvre*, yet consistent with both their early stage of thinking and their larger vision.

It is significant that Muir and Ruskin were writing during the development of early forms of the concept that is now known as "the Anthropocene" which were being proposed at that time on both sides of the Atlantic. We might now suggest that Muir and Ruskin were writing in the Anthropocene without knowing it, but actually seeming to sense its nearness. Yet despite the fact that we are now struggling to control the consequences of the era of human influence upon the planet, the Anthropocene still awaits an official acceptance from geological authorities. But as a result of what we might now recognise as Ruskin's and Muir's engagement with a growing awareness of human responsibility for the forces of change in nature, I want to conclude by suggesting that five features or strategies arising from the work of Ruskin and Muir might speak pertinently to us as we confront the Anthropocene today.

**Transatlantic John Muir**

In 1849 when John Muir was eleven years old, doing his homework at the fireside in Dunbar, Scotland, his father came into the room and said to John and his brother David, "Bairns, you needna learn your lessons the nicht, for we're gan to America the morn!"(Muir, *Wilderness Discovery* 42). This is how John Muir told the story to the secretary appointed by the American railway magnate Edward Harriman to get Muir's autobiography out of him in the book that became *The Story of my Boyhood and Youth* (1913), published in the year before Muir died. Several features of the old man's telling of this story are striking. Firstly, the abruptness of the announcement by an autocratic father, a stern puritanical man for whom the established Church of Scotland was too liberal. A member of the dissenting Secession Church

in Dunbar, Daniel Muir had heard Thomas Campbell speak in 1847 of the further breakaway religious group, the Disciples of Christ, that he had established in the Appalachian uplands and along the American frontier. Campbell had returned to Scotland to recruit further immigrants to the Campbellite groups who rejected the authority of any established church, preferring laymen to preach, and embracing the spirit of democratic nature-inspired American modes of religious freedom.

Secondly, the two brothers were immersed in their studies. The young John Muir had already developed the kind of Victorian wide-ranging curiosity that could be applied to the wildlife of the surrounding fields and woods as much as to books. Books, especially by Scottish writers, would remain essential to him in his life in America. In his later famous explorations of the American wilderness he always carried with him a volume of the poetry of Burns. Thirdly, Muir emphasises the Scots vernacular in his father's voice. As the famous American wilderness sage at the time he dictated his autobiography, Muir still spoke with a strong Scottish accent and valued his Scottish identity, despite having finally become an American citizen at the age of sixty-five. Indeed, after moving with his family to the woods of Wisconsin where the young boy helped his father to carve out a farm, his education continued to have a strongly Scottish quality as he borrowed the books of Scottish explorers from neighbours who had also emigrated from Scotland to a Campbellite community.

After studying geology and botany at the University of Wisconsin, Muir declined to accept that the American Civil War was his war and escaped conscription by botanising and working in Canada until he could return home and embark upon a journey that became, with the posthumous publication of his journals from the trip, the book *A Thousand Mile Walk to the Gulf* (1916). In this journal Muir was exploring ideas that distanced him from his father's literal belief in the bible and feeling his way towards his own philosophy of nature. Recent scholarship by Andrea Wulf has revealed the full extent to which, in undertaking this trip, he

was actually under the strong transatlantic influence of the German naturalist and explorer Alexander von Humboldt (Wulf, *The Invention of Nature* 315).

First, Muir's intention was eventually to follow Humboldt's journey to Cuba and the great South American rainforest as described in Humboldt's book *Personal narrative of travels to the equinoctial regions of America, during the years 1799-1804* (1805; English translation 1852) which Muir had annotated and personally indexed on the endpapers in his usual way. Second, it is probably true to say that Humboldt's view of nature as a web of interconnected organisms conceived "as a natural whole, animated and moved by inward forces," as he put it in his book *Cosmos* (1.45), was the greatest influence on Muir's thinking at this time, as it was on the thinking of Thomas Jefferson, Charles Darwin, William Wordsworth, Samuel Taylor Coleridge and Henry David Thoreau.[3] Third, in his journal this new vision was expressed in language that echoed Humboldt's, as Andrea Wulf has recently argued:

> Where previously he had been a collector of individual specimens for his herbarium, [Muir] now began to see connections. Everything was important in this grand big tangle of life. There existed no unconnected "fragment", Muir thought. Tiny organisms were as much part of this web as humankind. "Why ought man to value himself as more than an infinitely small unit of the one great unit of creation?" Muir asked. "The cosmos", he said, using Humboldt's

3 "Thomas Jefferson called him 'one of the greatest ornaments of the age'. Charles Darwin wrote that 'nothing ever stimulated my zeal so much as reading Humboldt's *Personal Narrative*,' saying that he would not have boarded the *Beagle*, nor conceived of the *Origin of Species*, without Humboldt. William Wordsworth and Samuel Taylor Coleridge both incorporated Humboldt's concept of nature into their poems. And America's most revered nature writer, Henry David Thoreau, found in Humboldt's books an answer to his dilemma on how to be a poet *and* a naturalist – *Walden* would have been a very different book without Humboldt." Wulf*, The Invention of Nature* 5-6.

> term, would be incomplete without man but also without "the smallest transmicroscopic creature".[4]

Muir's biographer, Donald Worster, misrepresents Humboldt's anxiety to see the presence of civilization in the South American wilderness where, as Humboldt put it, "one may almost accustom one self [sic] to regard men as not being essential to the order of nature" (Worster 118). Armed with Humboldt's breathtaking new perspective, Muir was attempting to reduce the hubris of an anthropocentric view of nature by valuing the smallest microcscopic creature within a universe that displaced the centrality of human beings. This was important preparation for the later influence of John Ruskin and the reading of the glaciated mountains of California where small signs revealed huge and historic forces at work in nature.

In Florida Muir succumbed to a serious fever which recurred when he reached Cuba, so he decided to take a side-trip to explore what he had seen in an advertisement, probably for Hutchins Hotel in Yosemite Valley, featuring the vertical walls of a wondrous valley which he first entered in 1869. There he stayed to become a country diarist, a tourist guide, a scientific discoverer, and a conservationist. He also became, most notably, the champion of the first National Park to be preserved for future generations to re-create themselves in informed and enquiring direct contact with the dramatic shaping forces of the cosmos. The Valley that Muir entered was a fruit orchard and pig farm leased out by the State of California. As Muir explored the high backcountry of the Sierra for the next six years he came to feel that there should be national protection of this mountain ecosystem with its forests and glaciers, rock domes and wild flower meadows – which he named "the Range of Light." But there was a prior need to interest the public in its dramatic features and to educate them in the amazing

4 Wulf, *The Invention of Nature* 318.

processes of its formation that could still be seen at work in the living landscape. The view of the geologists of the California Geological Survey, led by Josiah Whitney and his mountaineering assistant Clarence King, was that Yosemite Valley had been formed by a single seismic event that caused the Valley floor to fall. Muir proved to himself by empirical measurement that glaciation, the process that had actually carved the Valley, was still at work in the high Sierra. Muir's first publication produced the evidence and the argument in "Yosemite Glaciers" in the *New York Tribune* in 1871. But in 1874 Muir began to publish a series of four essays that provided a popular explanation of how mountains are shaped; *Studies in the Sierra* – not produced as a single book until 1950 by the Sierra Club – remains one of the most vivid commentaries on the effects of glaciation ever written. However, the similarity of these essays about the Sierra Nevada to John Ruskin's *Modern Painters* Vol IV (1856) about the formation of the Alps has never been closely examined.

**Two books: American and European mirrors**

Three times in his letters Muir had dismissed Ruskin for his phrase "mountain gloom," which Ruskin contrasted with "mountain glory." This was a deliberate misreading of Ruskin's complaint that it was human culture in the Alps, in the form of wayside crucifixes and shrines, that created a sense of mountain gloom for walkers of mountain paths. In fact, Muir's personalised index on the endpapers of his copy of *Modern Painters IV* reveals a series of page numbers alongside which are written "Yo," Muir's abbreviation for "Yosemite." Here was Muir, at probably his third reading of the book which had been loaned to him twice at earlier dates, noting points made by Ruskin that were relevant to Yosemite. It seems likely that Muir's desire to prioritise his own insights and discoveries had led him to create the impression that Ruskin was a flawed commentator on mountain scenery. Ever the celebrant of

mountain glory, Muir would have no time for mountain gloom in any form, even though Ruskin's use of the words "darkness," "foulness" and "evil" were actually referring to morbid Catholic culture in the Alps. It was in his "Mountain Gloom" chapter that Ruskin made his distinctly Humboldtian statement that the "tendency to dismember and separate everything is one of the eminent conditions of a mind leaning to vice and ugliness; just as to connect and harmonise everything is that of a mind leaning to virtue and beauty" (Ruskin 6.401). At one point Muir wrote "No. Nearly all mtns carved from the [?] created by the gls" in the margin of *Modern Painters IV* as though Ruskin had not given sufficient credit to glaciation. Yet the more closely one looks at the two texts the more striking are the similarities, given that the two writers are describing two quite different mountain landscapes – the comparatively arid granite mountains of California and the geologically more complex humid mountains of the European Alps. A detailed case study is required.

Perhaps a challenging way to begin a discussion of these two works would be to ask if one might be able to distinguish which of the following ten sentences taken from the two books was written by Muir and which by Ruskin?

1. In the hand of the great Architect of the mountains, time and decay are as much the instruments of His purpose as the forces by which He first led forth the troops of hills in leaping flocks – the lightning and the torrent, and the wasting and weariness of innumerable ages, all bear their part in the working out of one consistent plan.

2. The Master Builder chose for a tool, not the earthquake nor lightening to rend and split asunder, not the stormy torrent nor eroding rain, but the tender snowflowers, noiselessly falling through unnumbered seasons, the offspring of the sun and sea**.**

3. And the Builder of the temple for ever stands beside His work, appointing the stone that is to fall, and the pillar that is to be abased, and guiding all the seeming wildness of chance and change, into ordained splendours and unforeseen harmonies.

4. In general, the grain of a rock determines its surface forms, yet it would matter but little what the grain might be – straight, curved, or knotty – if the excavating tool were sharp, because in that case it would cut without reference to the grain.

5. I call these the governing or leading lines, not because they are the first which strike the eye, but because, like those of the grain of the wood in a tree-trunk, they rule the swell and fall and change of all the mass.

6. Glacial denudation is one of the noblest and simplest manifestations of sun-power [...] a wheel, constructed of water, vapour, snow, and ice, as irregular in shape as in motion, is being sun-whirled against a mountainside with a mechanical wearing action like that of an ordinary grindstone.

7. So that a glacier may be considered as a vast instrument of friction, a white sandpaper, applied slowly but irresistibly to all the roughnesses of the hill which it covers.

8. It would appear that rivers more nearly resemble certain gigantic *algae* with naked stalks, and branches webbed into a flat *thallus* [...] The gently gliding rain-*thallus* fills up small pits as lakelets and carries away minute specks of dust and mica.

9. To call it the thousandth part of the glacier waters, would give a ludicrous under-estimate of their total power; but even so calling it, we should

find for result that eighty thousand tons of mountain must be yearly transformed into drifted sand, and carried down a certain distance.

10. But for us the intelligible and substantial fact is that the earth has been brought, by forces we know not of, into a form fitted for our inhabitation: on that form a gradual, but destructive, change is continually taking place, and the course of that change points clearly to a period when it will no more be fitted for the dwelling-place of men.

It seems possible to imagine that these ten sentences might form continuous sense written by one hand, such is their consistency of style and content. In fact, the first sentence is from *Modern Painters IV* and the second from *Studies in the Sierra* and thereafter they alternate in authorship until the last two sentences which are from *Modern Painters IV*.[5] Perhaps the neologism of "snowflowers" is a clue to the writing of John Muir, but, this apart, how is it possible that the impression of a single author could be created? What literary features do the two writers have in common? Five qualities could be identified from these sentences alone. First, both writers deploy the notion of a creator as "Architect" or "Master Builder" directing evolution (1 and 2 above). Just as Humboldt avoided mention of God, so these two writers here prefer a more anthropocentric metaphor for the processes of creation. Humanising the complex and challenging notion of evolution was a strategy that both writers used to bring nineteenth-century readers on both sides of the Atlantic towards an acceptance of gradual rather than seven-day creation. They do not embrace the idea of chaos, as would twenty-first century scientific writers, but emphasise a long-term purposeful evolution that is still ongoing. Second, both writers regard mountains as "temples" (3), using a religious

5 Sources of the ten sentences: 1 – Ruskin, *Modern Painters IV*, 6.180; 2 – Muir, *Studies in the Sierra*, in Muir, *Life and Letters* 395. (All further references to *Studies in the Sierra* will be to this edition.); 3 – Ruskin, *Modern Painters IV* 6.180-181; 4 – Muir, *Studies in the Sierra* 406; 5 – Ruskin, *Modern Painters IV* 6.231-32; 6 – Muir, *Studies in the Sierra* 433; 7 – Ruskin, *Modern Painters IV* 6.211; 8 – Muir, *Studies in the Sierra* 452; 9 – Ruskin, *Modern Painters IV* 6.176; 10 – Ruskin, *Modern Painters IV* 6.179.

metaphor to induce awe and admiration as well as a sense of the sacredness of a natural form. One of the criticisms of Muir's early writing is that his depiction of mountains as "temples," like his use of the word "noble," becomes almost a cliché from sheer repetition. For Muir this expressed a radical alternative to his father's commitment to a church (however dissenting from the established church it might be), but also an almost pantheistic extension of his sense of the sacred in nature.

Third, there is the personification of processes in phrases such as the "leaping flocks" (1) of hills and in snow as "the offspring of the sun and sea" (2). This may now be regarded as suspect and unscientific, but in the nineteenth century such a lyrical strategy was an attractive way of bringing sceptical readers towards quite radical new ways of conceiving of living landscapes that were more than simply to be consumed in the picturesque manner of the previous century, or, indeed, created in seven days in the biblically authorised version of creation. Muir, in particular, is inventive in his use of metaphors to help public understanding of huge processes. The image of "an ordinary grindstone" (6) for "glacial denudation" actually represents the invisible process of "a wheel, constructed of water, vapour, snow, and ice" as an everyday machine for wearing down a mountainside. Both writers use the metaphor of the grain of wood to suggest the way dominant lines of weakness in the rock determine the erosion of mountains (4 and 5).

Fourth, Muir and Ruskin have a talent for lyrical alliteration, rhythmic sentence construction, and striking neologisms that enlivens their writing and holds the attention of readers. Ruskin's "first led forth the hills in leaping flocks" (1) is exquisite in the pattern of its alliteration, but also in its rhythmic onomatopoeia of the two beats of "leaping," rising above the single beats that surround it. Muir's single sentence about glacial denudation (6) rings with the sound of his whirring grindstone in "wheel," "water," "whirled" and "wearing action. " Ruskin's sentence about "governing or leading lines" (5) comes to a splendid

rhythmic climax that has the effect, again, of onomatopoeia in “they rule the swell and fall and change of the mass.” Ruskin is less prone to invent neologisms, although his use of “inhabitation” (10) where “habitation” might be expected has the effect of prompting a second enquiring glance that Muir certainly achieves with his “snowflowers” (2) and “sun-whirled” grindstone of water erosion (6). Although Ruskin has a preference for the reflective or analytic over-view carefully explained in long sentences (9 and 10), even in this he seeks to surprise and provoke the reader with a fact such as “eighty thousand tons of mountain” (9) being eroded by a small stream each year, or an idea such as that of mountain erosion leading “clearly to a period when it will no more be fitted for a dwelling-place for men” (10).

Fifth, both authors attempt to convey huge contrasts of scale in an accessible manner. Ruskin deals with “time and decay” (1) by discussing what Muir calls “glacial dust” (8) carried by mountain streams in “a thousandth part of the glacial waters” (9). In *Studies in the Sierra* Muir’s major image for the large-scale patterns of glaciers and rivers of the Sierra is that of a tree, but here he compares talus and moraine patterns to those of “gigantic *algae* with naked stalks” (8). Ruskin is at pains to explain that what appears to be a landscape determined by chance – “the seeming wildness of chance and change” (3) – is being worked upon by large-scale forces “into ordained splendours and unforeseen harmonies.” He admits that the original forces that created the globe “we know not of” (10), but Muir follows Ruskin in being certain that the tools and processes of creation and decay can be observed at work in the present by a reader who is taken by their writing to a closer, one might say “scientific,” examination of what remain sacred splendours and aesthetically inspiring mountains.

It should not be surprising that Muir’s illustrations in *Studies in the Sierra* are similar to those of *Modern Painters IV*. But it does seem that Muir has taken his model of page design from Ruskin, although this may simply be the standard nineteenth-century way of integrating illustrations into text, the small difference being that Muir’s illustrations are boxed

in. Muir's diagram of the directions of ice movement that formed four different domes in the Sierra (Muir, *Life and Letters* 417), for example, looks superficially similar to Ruskin's image of a two thousand foot high dome in *Modern Painters IV* which is similarly the result of glaciation (Ruskin 6.183). But there are two significant differences. Ruskin's image is of folded limestone beds, so only the face has been cut by ice. Ruskin, however, does not mention glaciation, being more interested in the folding, and is at a loss to explain the sliced rock face, deeming it one of those mountain forms "utterly inexplicable on any theory whatever." There is no question that Ruskin is aware of the signs and effects of glacial action, as his diagram of the effect of "white sandpaper" on the shaping of the centre of a mountain chain demonstrates (Ruskin 6.212). Even more visually striking is the similarity of Ruskin's diagram of the section of mountains separating Chamonix and Courmayeur (Ruskin 6.220) and Muir's "mechanical structure of two peaks in the Lyell group" (Muir, *Life and Letters* 471), except that actually Muir's demonstrates continuity of structure and Ruskin's discontinuity.

All these textual comparisons endorse the impression that Muir's purpose and design in *Studies in the Sierra* was heavily influenced by the model provided by Ruskin's *Modern Painters IV*. The transatlantic influence seems undeniable, although there is no evidence that it was reciprocated by Ruskin having read Muir. More important, perhaps, is their shared concern to use their writing to induce in the public on both sides of the Atlantic a respect for and interest in the works of nature with a long-term view towards their taking responsibility for their natural home planet – Ruskin's "great entail" (Ruskin 8.233).

**Writing the Anthropocene**

In 1922 the Russian geologist Aleskei Petrovich Pavlov first proposed that the longer Quaternary period be renamed as the "Anthropocene" (*Great Soviet* 2.139-144), but the

modern use of the term is attributed to the Dutch atmospheric chemist Paul Crutzen who revived the term in 2000 and popularised it in the journal *Nature* in 2002 (Crutzen and Stoermer; Crutzen). American environmental scientist William Ruddiman suggested in 2005 that the Anthropocene began when warming from the advent of farming increased carbon dioxide and methane to the extent that it "arguably stopped the initial stage of a glacial cycle" (Davis, "Inventing the Present" 78). Timothy Morton dates the epoch's beginning to April 1784 when James Watt patented the steam engine and carbon (soot) was deposited on the earth's crust on what became a "geophysical force on a planetary scale" (Morton 7). Morton recently coined the term "hyperobject" for a concept like global warming that is so vast and distant that it is hard to grasp and engage with. Ruskin came to recognise that a hugely significant change was underway as he observed, from his house at Brantwood on the shores of Coniston Water, soot being carried from the industrial works at Barrow on the Cumbrian coast on clouds propelled by the dominant Atlantic westerly winds, providing the title and moral metaphor for his 1884 lecture "The Storm Cloud of the Nineteenth Century." But Muir believed that there was still time for humans to pull back from deep pollution through the newly conceived conservation movement. So perhaps my transatlantic comparison, which began with a declaration of difference on Muir's part, and proceeded through what they had in common stylistically, now demands a step back to compare the larger vision of these two writers. Despite their slightly different original purposes in these two early books, Ruskin's major influence on Muir is perhaps reflected in a comparison of the ultimate trajectories of their careers as cultural figures on each side of the Atlantic. Indeed, their prescient literary expressions might help us to understand something of the nature of the Anthropocene. Just what were the values that Muir and Ruskin thought were needed to counter the momentum that we now call the Anthropocene? What can we learn from them as we struggle to deal with life in the Anthropocene now? What is the role of ecocritics in a world where the

Anthropocene is still not widely accepted by a Western neoliberal juggernaut that is speedily being reproduced in China, India and elsewhere?

Both Ruskin and Muir were accounting for glaciated alpine landscapes. Muir actually measured glacial advance to prove that living glaciers were still at work in the high Sierra. In 2011 the retreat of mountain glaciers was the evidence considered by three groups of scientists who confirmed the Anthropocene by recognising the human influence on climate change. The report of the working group assembled by the Pontifical Academy of Sciences referred to "a new man-made [sic] geologic epoch we are living in" (Hansen 288). A symposium of Nobel laureates in Stockholm concluded that "we are the first generation with the insight of the new global risks facing humanity" (Hansen 289). And the *Philosophical Transactions of the Royal Society* published a themed issue on research "consistent with the suggestion that an epoch-scale boundary has been crossed within the last two centuries" (Hansen 289). In the nineteenth century there was a debate about how to name the period that would come to be recognised in the late twentieth century as "man-made."

Charles Lyell, the great Scottish geologist whose work Ruskin and Muir both eagerly absorbed as young men, proposed in his 1830 *Principles of Geology* that a new term was needed for the postglacial era – the long slow processes of which were still at work in the present – and came up with "Recent." He defined humans' relationship with the earth by analogy with European colonialism: "The greater part of the inhabited surface of the planet remains still as insensible to our presence, as before any isle or continent was appointed to be our residence" (Lyell 158). Both Ruskin and Muir knew that this was no longer actually true, although they were attracted to the essential humility of the stance. But when, in the *Principles of Geology* Lyell came to consider the future, he seemed to concede that human agency could change the geological record, as Robert Davis observes: "Lyell was willing to

speculate that geological modifications in the future might 'be produced by the progressive development of human power' or 'where man has interfered'" (Davis 73).

In the late 1860s the French geologist Paul Gervais proposed changing Lyell's Recent to Holocene. But in 1854 the English congregational minister Thomas W. Jenkyn coined the term "Anthropozoic" in the geology lessons contained in his *Popular Educator.* This was endorsed by the Dublin geology professor Reverend Samuel Haughton in his *Manual of Geology* in 1865 and further expanded upon in Christian terms by the Italian priest and geologist Antonio Stoppani who argued that the Anthropozoic began, not when God created man, but when man emerged from pagan darkness to the light of year one *anno domini*. (Hansen 291). So the term "Anthropozoic" was already established within a Christian view of the creation of the human species when the Berkeley professor of geology Joseph Le Conte, an American of Huguenot descent, proposed "Psychozoic" to name "the age of man" in a paper published in the *American Journal of Science and Arts* in 1877. Le Conte was unequivocal in his view of the human species as a dominant ecological influence, justifying the naming of a new geological epoch through the capacity to "modify the whole fauna and flora of the earth. With the establishment of his supremacy the reign of man commenced" (Le Conte, "On Critical Periods" 114). This might appear to contradict what he had earlier published from his Sunday lectures on religion and science in 1874: "Completed individuality – separation from the all-pervading forces of Nature – this is the distinctive characteristic of man." But Le Conte saw this "supremacy" as a religiously determined evolutionary achievement by the forces of nature as a self-conscious human species "struggles upward and attains Divinity in Christ" (Le Conte, *Religion* 261).

In July 1870 Professor Le Conte and ten of his students had been guided through Yosemite for ten days by John Muir and shown the empirical evidence of glaciations that Muir had been studying, contradicting the view of Professor Whitney's Geological Survey of

California at the time that the valley was formed by a single cataclysm of seismic activity. I have written elsewhere of how Muir felt that Le Conte had stolen the evidence and new theories which Muir had been sharing with him (Gifford, *Reconnecting* 44). Muir was quite aware that the claims he was making for the dramatic erosive powers of ice in Yosemite challenged the conventional views of professional geologists like Le Conte: "He evidently doesn't [know] what to think of the huge lumps of ice that I sent him. I don't wonder at his cautious withholding of judgement. When my mountain mother first told me the tale I could hardly dare to believe it either, and kept saying 'what?' like a child half awake" (qtd. in Gisel 179-180). Muir believed that he could himself better expound upon these new ideas for the public if he had had Le Conte's platform for what Muir characterised as Le Conte's "second-hand re-hash" (Muir, *Life and Letters* 189). But Muir diplomatically maintained his friendship with Le Conte and later recruited him as a founding member of the Sierra Club that was parallel to Ruskin's Guild of St George with its museum for the education in Natural History of working men among the steelworkers' terrace houses in Walkley, Sheffield, and its experimental self-sustainable community at Totley Grange outside Sheffield.

The writers of *Modern Painters* and *Studies in the Sierra* were young men developing their fundamental understanding of huge and complex natural processes at work in the mountain environments they knew intimately. They both combined an aesthetic with an empirical curiosity expressed with both scientific clarity and lyrical engagement. Ruskin measured glacial sediment from a wine bottle to calculate the 80,000 tons of mountain transformed to sand each year by a single Alpine glacial stream (Cook and Wedderburn 6.175). Muir placed his five stakes in the glacier of Mount McClure to measure a movement of 40 inches in 46 days and prove that live glaciers were still at work in Sierra (Muir, *Life and Letters* 174). Ruskin thought that he was writing art criticism to educate the public as an advocate for the controversial painter Turner. Muir thought that he was writing landscape

history for the education of the San Francisco public – the readers of *The Overland Monthly* – as an advocate for Yosemite Valley as a place of re-creation. Both were actually undertaking detailed observations on the ground, reflecting upon what this taught them about large-scale unified processes, and developed theories that led them to become in their later lives what we would now call "public intellectuals." Of course, they would think of themselves as writers warning society against the environmental consequences of the industrial drive towards materialistic wealth. They both, later in their careers, sought to change public policies in their time for the good of future generations who would inherit the planet.

This is the position that ecocritics find themselves in today as the inheritors of the actions of what Muir called the environmental arrogance of "Lord Man" and Ruskin saw in the stormclouds of the nineteenth century. And this position has uncanny similarities to those of the writers of *Modern Painters* and *Studies in the Sierra*. When in 1922 Aleskei Petrovich first proposed the name "Anthropocene," even he might not have anticipated the glacial pace which it took for its acceptance as a concept. In the 2011 *Philosophical Transactions of the Royal Society* climatologist Will Steffen and colleagues claimed that the Anthropocene challenges notions of progress, neoclassical economics and the place of humanity in the natural world, and that its revolutionary impact will equal Darwin's theory of evolution.[6]

**Writing beyond transatlantic environmental discourse**

What I finally want to draw attention to here are five features of the writings of Ruskin and Muir that speak to the current role of the environmental humanities and its praxis in transatlantic environmental discourse and beyond.

6 For more on the Anthropocene and its 'long history of precursors' (57), see Schwägerl, *The Anthropocene*, 48-69.

1. They began as empirical observers with a scientific approach and became engaged with what they saw as a cultural crisis. In their time, Muir and Ruskin were able to transcend the separation of science and art – in the education system, the Arts and the Sciences – that has been so disastrous in the twentieth century for discussion of environmental ethics and social policy. Their Victorian notion of natural history as a broad field enabled them to push further their detailed examples of Humboldtian webs of dynamic forces in nature and in their specific landscapes.

2. At the base of their writing was a fundamental awe, a pantheism and rejection of human hubris that fuelled their concern for what was being lost. Muir and Ruskin addressed through their writing the arrogance of human centrality in nature and urged a responsibility for what would come to be called the Anthropocene.

3. Their concern for the health of nature was indivisible from their concern for human physical, cultural and spiritual health. Ecocritics now call this "environmental justice" in the sense of seeking fair treatment for exploited human minorities and exploited environments at the same time since the two are so often closely linked.

4. They deployed a variety of different discourses for different purposes and audiences. The scientific and aesthetic purposes may have differed between *Modern Painters IV* and *Studies in the Sierra*, but each writer went on to find quite distinct forms of political discourse in the service of their passionate modes of environmentalism. Muir would conclude *Our National Parks* (1901) with the words "God has cared for these trees, saved them from drought, disease, avalanches and a thousand straining, levelling tempests and

floods; but he cannot save them from fools – only Uncle Sam can do that" (Muir, *Wilderness Discovery* 605). Ruskin would write in *Fors Clavigera*, his letters to the working people of England, in a letter of 1 May 1871, "your power of purifying the air, by dealing properly and swiftly with all substances in corruption; by absolutely forbidding noxious manufactures; and by planting in all soils the trees which cleanse and invigorate earth and atmosphere, – is literally infinite" (Ruskin 27.92).

5. They formed organisations to promote praxis in the Sierra Club and the Guild of St George.[7] Cultural movements were important to them because they had begun to recognise that the environmental crisis was a cultural crisis, although Ruskin would have emphasised its moral dimension and Muir its conservation dimension. Only in the last two decades has the environmental humanities been focussed and invigorated by the formation of scholarly groups such as the Association for Studies in Literature and Environment (ASLE) which began in the land of John Muir's life's work and was taken up by a branch in the land of Ruskin (ASLE UKI) before becoming a global dialogue with branches in Europe, Canada, Australia and New Zealand, India, Japan, Taiwan, and South Korea. The transatlantic dialogue between John Muir and John Ruskin not only continues to shape contemporary discourses within ecocriticism, but offers, in these five features of their writing, pointers for current global debates about culture and environment.

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