

2009.02.08 Darwin: A Bicentennial

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On February 12th 1809, two individuals were born, one in Great Britain, one in the United States, one born to wealth and a prestigious family, the other in poverty, a log cabin and rough hewn frontier—two men whose life work in the sciences and politics, respectively, had a profound impact on shaping the substance, issues, and identity of the modern world. On another occasion, perhaps, I'll talk about Abraham Lincoln, one of our two bi-centennial men. I would speak of him, not just for his impressive leadership; rather, it would be for his profound, self-critical, unsparingly deep reflections on theology. That's what I would explore about Lincoln; I think that he was one of North America's most important public theologians.

Instead, today, I want to observe with you the bi-centennial of the birth of Charles Darwin. It will be difficult this year to avoid Darwin; 2009 marks not only his 200th birthday, it is also the 150th anniversary of the publication of his *On the Origin of Species*, a book whose thesis and argument for natural selection as the principal agent for the evolution of all life and living things, has been described as one of the most important ideas in human culture, and as having created the grammar, the very science of biology. This year it's estimated that 50 new substantial books on Darwin and his legacy will be published; in Great Britain alone, over 300 events are planned to celebrated Darwin and the publication of *The Origin of Species*.

Indeed, you may not even have to go out looking for Darwin this year; he may be coming right at you. About three weeks ago, I was working in my office when the telephone rang. On the other end of the line, an articulate young UBC student asked me if I knew about the upcoming events of the "Vancouver Evolution Festival," and whether I, as a member of the clergy, would be interested in resources from the web in helping me to create a worship service celebrating Darwin's anniversary. (for the Vancouver Evolution Festival, see www.vanevo.ca)

There are obvious good reasons for making such a fuss about Darwin this year. Along with Freud and Marx, Darwin is frequently cited as one of the three great intellectuals of the 19th century who shaped modernity; but unlike the others, whose reputations have been seriously battered in the past thirty years, Darwin's standing now is higher than ever. Much of what he argued for has been proved right. Scientists, and others, are full of awe for a man whose thinking and work was so meticulous, so full of original insight, and astonishingly ahead of his time. But celebrating intellectual history doesn't usually provoke such an enormous outpouring of publications, museum exhibitions, radio and television programmes, and coming-soon-to-your-local-theatre big budget movies about Darwin's life. There's an almost missionary zeal about it all that I find quite fascinating.

When I was a missionary, the point of my endeavors was to introduce, persuade and convince; it was work toward changing worldviews and sensibilities. I find the same programmatic urgency and conviction at work in the Darwin bi-centennial; and the reason isn't surprising: for despite the mountain of scientific evidence and the truth of Darwin's great discoveries, there is still considerable skepticism and hostility to Darwin and to his great idea about the evolution of living things by natural selection. In Great Britain and the US, though dissimilar in their rates of public religiosity and church going, polls in 2006 revealed that less than half of the respondents accepted the theory of evolution as the best description for the development of life. (for this discussion, see Madeleine Bunting, "Darwin shouldn't be hijacked..." *The Guardian*, 29 Dec. 2008)

What's going on here? Why is it, that 150 years after the publication of *On the Origin of Species* controversies rage, and huge numbers of people in the English speaking world (let alone in other cultures)

reject the thesis and the overwhelming evidence that confirms evolution of life by means of natural selection?

To answer that question, let's recall Darwin's revolutionary assertions: first, all forms of life are related, interconnected and descend from a common ancestor. That's the point of the illustration of a tree of life sketched by Darwin as early as 1837 and printed on the cover of the order of service. Second, the extraordinary array and diversity of all these living things, past and present on the tree of life, from microbes to plants to animals, from countless extinct species to those presently flourishing, can be accounted for by a process called *natural selection*. That process consists of three parts: the first is *variation*; that is to say, for any kind of organism whatsoever, there will be variation in the descendants produced in each generation. Think of a new antibiotic resistant generation of microbes; think of the children of two parents. Variation. The second part of the process is natural *selection*. Some variations will better enable organisms to survive the challenges of the environment, to mature, and to produce offspring; others will not. Nature automatically "selects." If the new characteristics that underlie success in adapting and surviving are passed on, the descendants possessing those favourable characteristics will enjoy the same good fortune of survivability, and the characteristics will spread. Selection is at work naturally, ceaselessly, tirelessly, everywhere. And finally, you need *time and space*; gradually, over a sequence of generations, this process brings forth organisms specially adapted for particular ecological niches, a process that may result in the emergence of new species; countless new and distinct forms of life, including the eventual appearance of human beings on this earth.

Interconnection and descent from a common ancestor by means of gradual, natural processes; that is, the evolution of all living things by means of natural selection. This is what the naturalist Tim Flannery has called the "simple, elegant hypothesis with enormous power to explain the world we live in." That hypothesis has come to provide the theoretical and empirical bedrock for an ever-expanding range of academic disciplines. Indeed, it is impossible to give an accurate account of the origin and nature of life without Darwin's law of natural selection. In the words of geneticist Theodore Dobzhansky, "nothing in biology makes sense except in the light of evolution."

If that's the case, why is it that so many today continue to demonize Darwin and reject his work? What's the problem with this picture?

To cut to the chase, I think there are two principal reasons for resistance to Darwin, and why those promoting events like the Vancouver Evolution Festival have their work cut for them.

The first is a *philanthropic* objection, one that arose almost immediately after the publication of *On the Origin of Species*, based on a warped notion of the slogan "the survival of the fittest." As early as 1838, Darwin came to believe that living things were not placed harmoniously on this earth as a result of divinely created, fixed, static and eternal categories and species. Rather, there is a war in nature, a struggle for existence; those organisms best adapted to survive and flourish endure, while those that are not cease to exist, and fail to pass on their traits to subsequent generations. The natural history of this planet is filled with the death, wreckage and waste of countless individuals and species that have perished and gone extinct in the struggle for existence. This is Alfred Tennyson's nightmare of Nature "red, in tooth and claw."

Darwin's own principal ally, Thomas Huxley, promoted this gladiatorial view of life in a series of popular essays on nature in the 1860s, where he wrote: "the strongest, the swiftest, the most cunning live to fight another day." Ignoring Darwin's own majestic view of life that says our "elaborately constructed forms...are dependent on one another," Huxley then, and our own present-day financial masters of the universe, have mistakenly believed that evolution is driven solely by ruthless competition. *With good cause*, if people believe *this* is what Darwin and evolutionary biologists and naturalists teach, then there *is* a problem. This quasi-religious belief is called Social Darwinism; and you see it on the march under slogans of "survival of

the fittest," "greed is good," laissez-faire market capitalism, and that this is a "dog-eat-dog world," where the poor and the marginalized have no one to blame for poverty and misery but themselves—a view that has disastrous consequences for public policy making.

This I would contend is the unwritten, unofficial religion of much of the modern world, and that we are arrayed against this species of idolatry and bogus religion just as much, if not more, than we protest against the fundamentalist project of closing down the human mind in worshipful deference to tradition and supernaturalist dogma. But this gladiatorial, this each-against-all, reductive myth of brutish aggression is an incomplete mis-understanding of what Darwin understood by evolution by natural selection. Since Darwin's time, science has revealed time and again, that species practice both mutual struggle and mutual aid. The biologist Frans deWaal has observed that: "I have found many instances...evidence so rich that I am convinced that survival depends not only on strength but also on cooperation and kindness...The struggle for existence has produced amazingly cooperative species with character traits such as loyalty, trust, sympathy and generosity." Reproductive success is evident in bigger, faster, brutishly competitive organisms *and* those that are smaller, slower, and socially cooperative. Darwinism, properly understood, gives us a dual disposition of selfishness and selflessness, competitiveness and cooperation. (see Michael Shermer, "A Skeptic's Take on the Public Misunderstanding of Darwin," *Scientific American*, Feb 2009; Frans De Waal, in *Chronicle of Higher Education*, 7 Aug. 1998)

Passing from the *philanthropic objection*, we encounter the second enduring problem that many experience with Darwin. Let's call it the *theological objection*. The problem comes in two parts; one more serious than the other. Let's take the relatively minor one first: *biblical authority*. In order for evolutionary biology to account for the extraordinary diversity of living things, and the incremental steps necessary for life to have evolved from the simplest original organism to our present, innumerable complexity—in order for this to make sense, what is required is an *immense* passage of time. And the Bible, as read and understood by most people in Darwin's era and by many today, just didn't provide it. It was widely believed that all species, the hundreds of thousands of them, whether plant and animal, had been individually created by God in their first pairing not so long ago in the Garden of Eden. Descent by natural selection needed hundreds of millions of years (several billion we would later learn) to make credible its claim; not the six days, or six relatively short creative periods, furnished by the book of Genesis.

Evolution by natural selection undermines a *literal* reading of the Biblical account of creation and the history of organic life, including, and especially, the human family. You can't have both. I've seen it; and many are the individuals and religious communities who've had to struggle, and who continue to wrestle to square this impossible circle. For if you capitulate on this challenge to a literal, traditional reading of scripture, it opens the floodgates and calls into question the authority of the Biblical text and the authority of those who guard its inerrant sanctity.

The second theological problem is more acute, more daunting I believe; because it cuts to the very quick one's belief in a benevolent deity, or the goodness of creation, and the belief in providence: that is, that there might be a plan, a goal, a purpose to it all—and that providence tends to be all about us and our ultimate salvation or blessed good. In essence, belief in providence asserts both divine foreknowledge of all things and events, and divine governance and provision, divine sustaining activity in and through nature and its creatures. If the first theological objection to Darwinism is the way it challenges biblically authoritative accounts of creation, the second objection arises from its assault on the *doctrine of providence* and our deeply embedded self-love.

Now I must say that along with you, I stand before nature full of awe and reverence for its grandeur, laws, and beauty. However, upon closer inspection and reflection, when I think about the reality of nature and its workings—it's a troubling picture indeed. The waste and the suffering, the general *inefficiency* of the process, the periodic mass extinctions, the extreme length of time, the undirected variations, the cruel

competition, the general and individual nastiness through which selection frequently works—when we look at the machinations of nature with a clear eye—well, the just-so-story of providence, along with our fulsome enthusiasm and praise for the beauty of nature can strike me, in my dark moods, as thoughtlessly naive, if not cruel. All this carnage and waste, all this death—*foreknown, planned and governed*, either close up or remotely by some overarching, beneficent designer or design? I think not. Once I believed that ultimately all tears would be wiped away, all wrongs compensated according to the laws of providence. No longer.

There is genuine pathos, genuine tragedy in this view of nature's processes that no doctrine of providence or design can assuage. When George John Romanes agonized, after comprehending what Darwin had revealed, that "the universe had lost its soul of loveliness;" and George Bernard Shaw wrote "when natural selection's whole significance dawns on you, your heart sinks into a heap of sand...There is a ghastly reduction of beauty and intelligence, of strength and purpose, of honour and aspiration," well believe me, I feel real and substantial empathy; I struggle myself.

However, in returning to the words Darwin wrote in the closing lines of the *Origin of Species* that I shared with you for the meditation, another feeling, other thoughts, other feelings, well up within me. Listen: "It is interesting to contemplate an entangled back clothed with plants of many kinds, with birds singing in the bushes...with worms crawling through the damp earth. And to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner have all been produced by laws acting around us. There is a grandeur in this view of life...[that] from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved."

I believe that Darwin's theories of evolution are rich with aesthetic and ethical inspiration for the environmental and human issues of our time. Common descent provides scientific foundations for the kinship of all human beings, and that all of us are connected to all other living things on earth; our relationship with the natural world is not one of dominion but intimate interdependence. Darwin may provoke outrage for displacing human self-aggrandisement, but he also hugely widened the scope of our understanding into how the earth has come to be, and thus our responsibility for how it evolves from here.

I want to bring these words to an end with a brief visit to Darwin's own garden at Down House, southeast of London. Nothing could be further from the truth that Darwin spent the remaining twenty-three years of his life after the publication of *On the Origin of Species* just pottering around the garden with no plan or purpose. He carried out a massive, world-wide scientific correspondence, seriously revived his *Origin of Species* several times, and authored 70 scientific articles and seven books all with the aim of buttressing the theory of natural selection with a mountain of closely observed and empirically verified facts. His garden and greenhouses, full of vegetables, orchids, climbing and insectivorous plants provided the raw materials for his subsequent experiments, writing, and discoveries.

For example, remarkable as it may seem, before the 1850s, people assumed that flowers were self-pollinating; the comings and goings of insects emerging from blossoms laden with pollen and then trundling off to parts unknown was thought of no importance. Darwin suspected otherwise, for he reasoned that if plants were ever to evolve, cross-fertilization was crucial. But how, or who was responsible for this to occur? Theorizing isn't enough; one needs facts. And here, he enlisted his many children as able research assistants, sending them out into the gardens, grounds and nearby fields to track and map out the flight routes of bumble bees and other insects and to observe their behaviour. Can you see them running, laughing; can you see them taking down the field notes that would become crucial to their father in establishing the role of insects in the cross fertilization of plants and flowers; one more key building block in proving that evolution was both sensible and real? Can you see them studiously, delightedly running after bumble bees and creating a map? What had once been a mere pretty picture of insects buzzing about was now revealed as an essential part of the drama of life, full of biological depth and meaning.

Darwin did not ban meaning from the world. Darwin's tree of life, with its "brachiating shape, so archetypal and potent," shows at a glance the antiquity and the kinship of all living organisms: from trilobites to bumble bees to us. I rejoice in this knowledge, even with its tragedy, even if it is without design and designer, for it roots me, it allows me to feel at home in the natural world. (on Darwin and his garden work, see Oliver Sacks, "Darwin and the Meaning of Flowers," *New York Review of Books*, 20 Nov. 2008)

For this I thank Darwin and those who continue his work. I hope we have numerous occasions this year to celebrate his bi-centennial and to deepen our appreciation for the circle of life and the processes and rhythms of nature.

(a couple of fine, recent books on Darwin: Janet Browne, *Darwin: Voyaging*, and *Darwin: The Power of Place*—a two part magnificent biography; see also Janet Browne, *Darwin's Origin of Species: A Biography*—excellent short introduction; Adrian Desmond and James Moore, *Darwin: The Life of a Tormented Evolutionist*; and David Quammen, *The Reluctant Mr. Darwin*)