**Happy Birthday, Charles Darwin**

February 12, 2013 marks the 204th birthday of naturalist Charles Darwin, whose lifelong work established the scientific theory that all species of life have descended over time from common ancestors through a branching pattern of evolution. The Arnold Arboretum celebrates the life and achievements of one of the foremost thinkers in science.

**Darwin's quotes about trees**

* "It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us."  
  **― Charles Darwin, *The Origin of Species***
* "The affinities of all the beings of the same class have sometimes been represented by a great tree. I believe this simile largely speaks the truth. The green and budding twigs may represent existing species; and those produced during former years may represent the long succession of extinct species."  
  **― Charles Darwin, *The Origin of Species***
* "Every one has heard that when an American forest is cut down, a very different vegetation springs up; but it has been observed that the trees now growing on the ancient Indian mounds, in the Southern United States, display the same beautiful diversity and proportion of kinds as in the surrounding virgin forests. What a struggle between the several kinds of trees must here have gone on during long centuries, each annually scattering its seeds by the thousand; what war between insect and insect—between insects, snails, and other animals with birds and beasts of prey—all striving to increase, and all feeding on each other or on the trees or their seeds and seedlings, or on the other plants which first clothed the ground and thus checked the growth of the trees! Throw up a handful of feathers, and all must fall to the ground according to definite laws; but how simple is this problem compared to the action and reaction of the innumerable plants and animals which have determined, in the course of centuries, the proportional numbers and kinds of trees now growing on the old Indian ruins!"  
  **― Charles Darwin, *The Origin of Species***
* "The death of a tree, that has attained gigantic dimensions, is recorded; the slow growth of smaller trees and their increase in number excite no attention."  
  **― Charles Darwin, *The Origin of Species***
* "Hence I can see no reason to doubt that natural selection might be most effective in giving the proper colour to each kind of grouse, and in keeping that colour, when once acquired, true and constant. Nor ought we to think that the occasional destruction of an animal of any particular colour would produce little effect: we should remember how essential it is in a flock of white sheep to destroy every lamb with the faintest trace of black. In plants the down on the fruit and the colour of the flesh are considered by botanists as characters of the most trifling importance: yet we hear from an excellent horticulturist, Downing, that in the United States smooth-skinned fruits suffer far more from a beetle, a curculio, than those with down; that purple plums suffer far more from a certain disease than yellow plums; whereas another disease attacks yellow-fleshed peaches far more than those with other coloured flesh. If, with all the aids of art, these slight differences make a great difference in cultivating the several varieties, assuredly, in a state of nature, where the trees would have to struggle with other trees and with a host of enemies, such differences would effectually settle which variety, whether a smooth or downy, a yellow or purple fleshed fruit, should succeed."  
  **― Charles Darwin, *The Origin of Species***
* "In treatises on many kinds of cultivated plants, certain varieties are said to withstand certain climates better than others: this is very strikingly shown in works on fruit trees published in the United States, in which certain varieties are habitually recommended for the northern, and others for the southern States; and as most of these varieties are of recent origin, they cannot owe their constitutional differences to habit."  
  **― Charles Darwin, *The Origin of Species***
* "Analogy would lead me one step further, namely, to the belief that all animals and plants have descended from some one prototype. But analogy may be a deceitful guide. Nevertheless all living things have much in common, in their chemical composition, their germinal vesicles, their cellular structure, and their laws of growth and reproduction. We see this even in so trifling a circumstance as that the same poison often similarly affects plants and animals; or that the poison secreted by the gall-fly produces monstrous growths on the wild rose or oak-tree. Therefore I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed."  
  **― Charles Darwin, *The Origin of Species***
* "The weather is quite delicious. Yesterday, after writing to you, I strolled a little beyond the glade for an hour and a half and enjoyed myself--the fresh yet dark green of the grand Scotch firs, the brown of the catkins of the old birches, with their white stems, and a fringe of distant green from the larches, made an excessively pretty view. At last I fell asleep on the grass, and awoke with a chorus of birds singing around me, and squirrels running up the trees, and some woodpeckers laughing, and it was as pleasant and rural a scene as I ever saw, and I did not care one penny how any of the beasts or birds had been formed."  
  **― Charles Darwin, *The life and letters of Charles Darwin***
* “There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.”  
  **― Charles Darwin, *The Origin of Species***
* "Multiply, vary, let the strongest live and the weakest die."  
  **― Charles Darwin, *The Origin of Species***
* "...I found a clump of petrified trees, standing upright, with the layers of fine Sandstone deposited round them, bearing the impression of their bark. These trees are covered by other Sandstones & streams of Lava to the thickness of several thousand feet. These rocks have been deposited beneath water, yet it is clear the spot where the trees grew, must once have been above the level of the sea, so that it is certain the land must have been depressed by at least as many thousand feet, as the superincumbent subaqueous deposits are thick.— But I am afraid you will tell me, I am prosy with my geological descriptions & theories.—"  
  **― Charles Darwin, [letter](https://www.darwinproject.ac.uk/entry-275" \t "_blank) to Susan Elizabeth Darwin, 23 April 1835**
* "You ask about my doctrine which led me to expect that Trees would tend to have separate sexes.f5 I am inclined to believe that no organic being exists which perpetually self-fertilises itself. This will appear very wild, but I can venture to say that if you were to read all my observations on this subject, you would agree it is not so wild as it will at first appear to you, from flowers said to be always fertilised in bud &c &c &c.— It is a long subject to which I have attended to for 18 years!"  
  **― Charles Darwin, [letter](https://www.darwinproject.ac.uk/entry-2060" \t "_blank) to Asa Gray, [after 15 March 1857]**
* "I am taking “Weeping trees”, as an example how inexplicable the laws of inheritance are; some weeping trees reproducing themselves almost truly by seed, & some quite failing to do so.—"  
  **― Charles Darwin, [letter](https://www.darwinproject.ac.uk/entry-3962" \t "_blank) to Thomas Rivers, 1 Feb [1863]**
* "I was led by one of my wild speculations to conclude (though it has nothing to do with geograph. distribution, yet it has with your Statistics) that Trees would have strong tendency to have flowers with dioicous, monoicous or polygamous structure. Seeing that this seemed so in Persoon, I took our little British Flora, & discriminating trees from Bushes according to Loudon, I have found that the result was in species, genera & Families, as I anticipated.f8 So I sent my notions to Hooker to ask him to tabulate N. Zealand Flora for this end, & he thought my result sufficiently curious, to do so; & the accordance with Britain is very striking, & the more so, as he made 3 classes of Trees, Bushes, & herbaceous plants.—f9 (He says further he shall work the Tasmanian Flora on same principle.) The Bushes hold intermediate position between the other two classes.— It seems to me a curious relation in itself, & is very much so, if my theory & explanation are correct."  
  **― Charles Darwin, [letter](http://www.darwinproject.ac.uk/entry-2034" \t "_blank) to Asa Gray, 1 Jan [1857]**

**Did you know?**

One of the most famous quotes attributed to Darwin was not said by Darwin? "It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change." [The Darwin sculpture in the Royal Botanic Gardens](http://www.rbgsyd.nsw.gov.au/welcome/feature_stories/previous_feature_stories/darwin/the_darwin_sculpture" \t "_blank), [Friends of Charles Darwin](http://friendsofdarwin.com/2009/01/18/" \t "_blank)

**Related Links**

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* [GoodReads - Origin of Species Quotes](http://www.goodreads.com/work/quotes/481941-on-the-origin-of-species-by-means-of-natural-selection)
* [Botanical quotes](http://www.darwinproject.ac.uk/bright-seeds) from the Darwin Project

**Arboretum Library Holdings**

*On the Origin of Species*  
*The different forms of flowers on plants of the same species ([HOLLIS](http://nrs.harvard.edu/urn-3:HUL.FIG:000670840" \t "_blank))*