

Haeckel's hierarchies

The now-familiar concept of drawing lines of descent as trees seems harmless enough. But it led Ernst Haeckel (who bent the evidence to prove his Darwinian theories) into believing in the evolution of a Germanic super-race.

Martin Kemp

The tree as a schema for lines of descent is one of those devices that have become so familiar as to give us little pause for thought. Yet it is often rich in implicit meaning, far beyond its immediate graphic utility.

The leading designer of evolutionary trees was the fervent German Darwinian, Ernst Haeckel. Famed for his beautifully illustrated publications of the Radiolaria — those geometrical masterpieces of micro-engineering — and as an anti-Catholic polemicist, Haeckel sought to so extend and consolidate Darwin's theory that it would brook no contradiction. He insisted that "ontogeny is a short and rapid recapitulation of phylogeny" — to the extent of bending his visual evidence to demonstrate identical stages in the embryological development of different species.

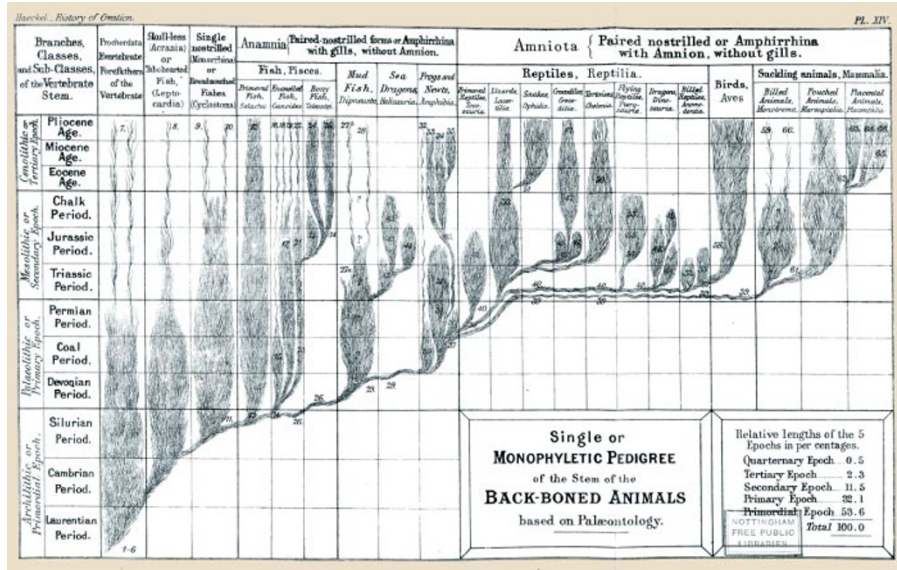
For Haeckel, every act of drawing was simultaneously an act of observation, analysis and demonstration in which appearance and interpretation were blended.

Haeckel aspired to a monist philosophy which dissolved the traditional dualisms of science and religion, reason and revelation, soul and body, mind and matter, man and animals, living and non-living, and organic and inorganic. His monism, unifying on the surface, was nevertheless suffused with hierarchical values, not least in his trees.

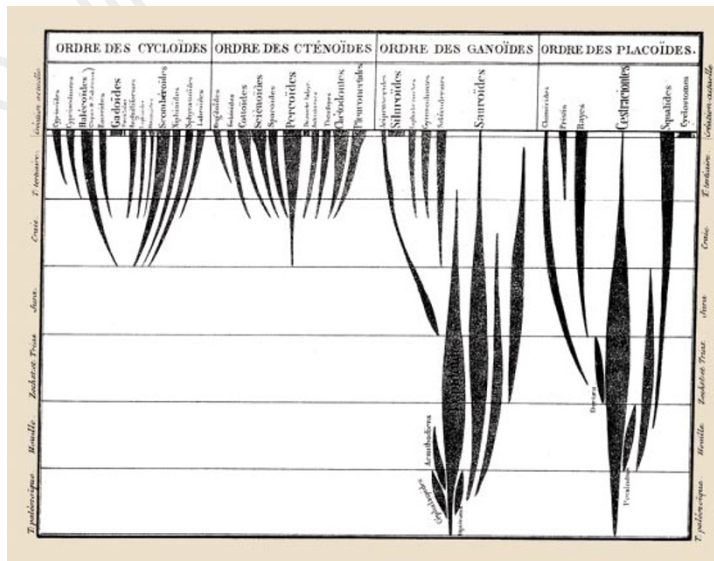
In his first major contribution to evolutionary theory, his *General Morphology of Organisms* in 1866, the tree assumes its most organic guise, with nicely rounded trunk and convincing ramifications, while in *The History of Creation* (translated by E. Ray Lankester in 1875–6) the trees are transformed into fern-like structures, with a degree of impressionistic suggestiveness commensurate with the uncertainties of the fossil record.

Such trees were not the inevitable outcome of an awareness of the successive phases of the appearance of species. Louis Agassiz's elegant spindle diagram in his book on fossil fish in 1833, eloquently expounded by Stephen Jay Gould, resists the joining of the branches to the trunks, because Agassiz was "convicted that they do not descend, one from the other". If Agassiz's scheme is concerned with special creations and descent, Haeckel deals with the remorseless ascent of humankind.

Acknowledging that "man is separated from the other animals by quantitative, not



Ernst Haeckel, 'Single or Monophyletic Pedigree of the Stem of the Back-Boned Animals based on Palaeontology' from *The History of Creation*, 1875–6, vol. II, opposite page 233.



Louis Agassiz, 'Diagram of the Evolution of Fishes' from *Les poissons fossiles*, 1833, vol. I, p. 170 (in S.J. Gould, *Eight Little Piggies*, p. 431).

qualitative, differences", Haeckel recognized the continuity of all natural things. However, he argued that:

"if one must draw a sharp boundary, it has to be drawn between the most highly developed and civilised man on one hand, and the rudest savages on the other, and the latter have to be classed with the animals".

Unhappily, on the eve of the First World War, he was inclined to agree with the physicist Wilhelm Ostwald that the Germanic race was leading the way into new evolutionary uplands, having "discovered the factor of organisation", whereas "other peoples live

under the regime of individualism".

Haeckel's hierarchical trees all too readily lent themselves to such forms of social Darwinism and eugenic perfection. However, it would have behoven him — and it certainly repays us — to reflect that the unbroken persistence of some 'primitive' species from the lowest ramifications of his trees can just as readily suggest that the human race, as a newcomer on the evolutionary stage, has a long way to go to demonstrate comparably sustained durability.

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