This book has refreshing ideas to offer for those who enjoyed a traditional neo-Darwinistic education and thought that the theory of evolution exists irrespective of who explains it. I learned from Niles Eldredge that scientists such as Maynard Smith, Williams and Dawkins (geneticists) are in fact ultra-Darwinists. He himself, Gould, Stanley and Vrba are presented as the naturalists, all being paleontologists.

Reinventing Darwin is well written and centres on the conflicting views on evolutionary theory of those naturalists and ultra-Darwinists. There is indeed debate in the book. Niles Eldredge does not recognise 'Normal Darwinists', but probably he would classify evolutionists as Dobzhansky, Mayr and Simpson in that group. Anyway they are neither in the ultra-Darwinist group nor in the naturalist group.

Eldridge is a critic of neo-Darwinism. Neo-Darwinism is a 'gene-centered and essentially reductionist approach to evolutionary explanation' and a 'distortedly oversimplified view of the natural world' (page 4). Next we encounter a criticism well-known to creationists: the unjustified extrapolation from generation-by-generation change to change on a geological time-scale. Neo-Darwinism is OK in its proper domain, but when extrapolated outside its proper domain things go wrong. Ultra-Darwinians transform natural selection from a filter to a creative force that shapes organic form. Naturalists however take the existence of large-scale ecosystems seriously. They can't be reduced to changes in gene-frequency.

'Ultra-Darwinians are strangely silent about why adaptive change occurs when it does and why adaptive change does not seem to occur' (p6). If evolutionary change is inevitable, why do 'living fossils', like Limulus, stay unchanged for 200 million years? Naturalists suggest as a possible explanation in some of such cases 'habitat tracking', that is species move to a suitable environment, in stead off changing their anatomy.

I placed Eldredge in the category 'Non-religious critics of orthodox neo-Darwinism' (in fact: 'anti-ultra-Darwinism') and 'pro-evolution', because he does not doubt evolution (common descent).
Overview of participants in the great evolutionary debate.

Further Reading

- Niles Eldredge (1985) "Unfinished Synthesis: Biological Hierarchies and Modern Evolutionary Thought".

- Email from actionbioscience.org