The legacy of Darwin

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Darwin and Design: Does Evolution Have a Purpose?
by Michael Ruse
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Human beings are brilliant teleological thinkers. Knowing the laws of newtonian mechanics and the initial positions and velocities of all the billiard balls on the table, we still have a devil

of a time predicting where any ball will go. But when someone picks up a cue, we are stunningly successful at predicting which shot will be attempted. Design, purpose and teleology seem natural to us and it is little wonder that they are hard to abandon in biology. Yet the reasons for doing so may be overwhelming. In *Darwin and Design*, author Michael Ruse addresses this wonderful problem in a very successful way.

For more than three decades, Ruse has been one of the leading philosophers and historians of biology. *Darwin and Design* is the latest offering—a mix of history and philosophy with implications galore for controversial issues in contemporary culture. Like all of Ruse's writings, the prose is graceful and humorous, and the clarity of exposition makes it accessible to a very wide audience.

The book contains much interesting and important historical background pertaining to biology and to notions of design and purpose. When we get to Darwin proper, Ruse discusses a wide range of topics in some detail—including optimality models, punctuated equilibrium and form versus function—that have a bearing on how we see the evolutionary process. Is darwinian selection the sole mechanism of evolutionary change, or are there other factors that are important? While making minor concessions, Ruse upholds traditional Darwinism and argues

that the rival views fit rather easily into the darwinian framework.

As we should expect, Ruse is a thorough-going Darwinian when it comes to design. There are no goals that nature is striving towards and no god that made things for a purpose. Yes, the heart pumps blood, and yes, the heart exists because its function is to pump blood. But the instinctive inference to design and designer must be resisted. As Ruse explains, "A leads to B, but then B in turn leads to A. There is no backward causation here, nor is there ... some kind of intentionality. A does not have B in mind when A is made. It is rather a cyclical situation, where the first leads back to the second and then back to the first. Darwinism does not have design built in as a premise, but the [merely apparent] design emerges as Darwinism does its work and some organisms get naturally selected over others" (p269).

Why then do we persist in the use of design talk? It is a metaphor, and a very useful one, says Ruse. There are live issues here, and Ruse outlines some of the debates. Many want to eliminate all mention of design, claiming that it is not at work in nature and it ought not to be used in our accounts of nature. Ruse, however, takes the view that the metaphor of design yields a "powerful kind of understanding that raises interesting and fruitful questions and stimulates important answers. It should be celebrated, not regretted" (p289). Overwhelmingly, within evolutionary biology, design is not taken literally. It is either eliminated outright or used in merely metaphoric terms. This is the legacy of Darwin. It should certainly be accepted by all, but there are recalcitrants.

But for many, religious convictions stand in the way of giving up design. Of course, many reject evolution outright. Others accept it, but it is evolution by means of divine (non-natural) selection. Ruse gives us a quick history of the religious opposition to Darwin. This type of opposition—religion against science—is, of course, still with us, mainly in the USA. But there is another type that has gained much ground in recent years: so-called 'intelligent design' (ID) theory. Champions of ID do not cast themselves as champions of religion who are rejecting science. Rather they claim to be fel-

low scientists with a rival theory. The facts, they say, require a different kind of explanation. Michael Behe, for instance, claims that complex organisms could not arise in a gradual darwinian fashion, but must come about as an 'all or nothing' affair. A mouse trap would not work at all if any of its parts were missing, so it must have come into existence as a whole. Complex organisms, according to Behe, have the same 'irreducible complexity' and hence can only be understood in terms of some sort of ID. The general claim that accompanies this is that ID is better science than Darwin's theory. ID theorists do not go on to say anything in particular about the designer, such as that he is all loving, all knowing, and so on, or that Genesis is literally true. But we all get the point—it is only a hop, skip and a jump to Jehovah.

Ruse points out problems with this line of reasoning. Some objections are biological and some are moral—yes, moral. After all, if purpose and design with their presuppositions of value are brought in as explanatory tools, then they must be allowed as critical tools as well. Reflect for a moment on, for example, genetic diseases. If the Great Designer could solve the problems of complex biological systems, why didn't He give some thought to biological horrors, too? We may marvel at the 'design' of the eye, but let's give a thought to the spine's blueprint next time we're suffering a bout of backache. ID should take credit for that, too.

The book's subtitle, 'Does evolution have a purpose?', deserves an emphatic answer. I would have expected a firm 'no', a strong denial of design and purpose. There is simply no room for it in the biological realm (except in the metaphoric sense mentioned above). Instead, Ruse pulls his punches and deists are treated to a few encouraging words. After being completely persuaded by almost everything up to this point in this very fine book, I felt like Mrs Thatcher who would famously say "Now don't go all wobbly." This missed opportunity aside, *Darwin and Design* is excellent throughout.

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