Ereshefsky's pluralism is thus tempered by an intolerance for the sort of classifications that might potentially result from strictly *structural* approaches, such as a pure pheneticism or pattern cladism. If one is prepared to accept ontological pluralism while holding the line against ontological nominalism or nihilism, this restriction seems curiously arbitrary. Evolutionary theory is not the whole of biological theory. We may conceive a legitimate scientific interest in the morphology of organisms—as explored, say, by biophysicists—that might safely ignore their historicity.

Whether or not he is entitled to place such limits on pluralism, Ereshefsky is to be lauded for distinguishing the claim that species are historical entities from the more specific and often confusing thesis that species are *individuals,* as urged by Ghiselin and Hull. And whatever the merits of his views, the "primer of biological taxonomy" given in Chapter 2 provides a clear and much needed overview of several decades worth of competing proposals.

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CYCLES OF CONTINGENCY: DEVELOPMENTAL SYSTEMS AND EVOLUTION. *Life and Mind: Philosophical Issues in Biology and Psychology.*

Edited by Susan Oyama, Paul E Griffiths, and Russell D Gray. A Bradford Book. Cambridge (Massachusetts): MIT Press. $50.00. xiii + 377 p; ill.; index. ISBN: 0-262-15053-0. 2001.

Developmental Systems Theory (DST) is a perspective that rejects the usual emphasis on genes in both determination and inheritance of characters. Instead it stresses that genes and environment interact in complex feedback loops during development, that we inherit DNA methylation, symbionts, and culture as much as genes, and that organisms construct their own niches, introducing evolutionary feedback loops.

The 24 chapters were invited by three of the founding gurus of DST. The result is an open exploration of the field, celebrating the fact that DST is a very broad church, by exposing internal disagreements and tantalizingly alluding to more trenchant external criticism. Unfortunately, the editors have been far more indulgent of long-winded arguments than biologists expect from refereed journals, and some chapters rambled over several disparate topics. This cannot all be blamed on the philosophers (roughly half the authorship), especially since the contribution by the philosopher Godfrey-Smith stands out as a beacon of insight. He admits that DST may be more useful to philosophers than in guiding biological research. Other highlights include Jablonka's review of extragenetic inheritance, Nijhout's discussion of theoretical models of gene interactions and population genetics generating inconsistent genotype-phenotype correlations, and Sterelny's consideration of what inheritance systems can properly evolve. But biologists might not bother to finish some philosophical chapters.

The authors tended to ignore or underestimate how the conventional framework deals with the issues. Do we really need a revolution, or do we risk throwing out the baby with the bathwater? Of course, newspapers oversimplify matters when they report that the latest "gene for xxx" is discovered, but their naivety is a straw man. No biologist would not acknowledge fulsomely that environment and genome interact. We all are fascinated by other modes of inheritance, even if they are seen as oddities. If we do not realize the limitations of heritability measures, then we should learn. But the gene-environment categorization and the primacy of genes have proved practical working hypotheses, and I doubt that they hinder us from recognizing other interacting processes. Simple models allow an analytic understanding that is impossible within the holistic web of interactions into which DST would have us always immerse ourselves. I am the sort of gene-selectionist biologist who had scarcely heard of DST, and I was not inspired to convert.

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LIFE'S INTRINSIC VALUE: SCIENCE, ETHICS, AND NATURE.

By Nicholas Agar. New York: Columbia University Press. $45.00 (hardcover); $25.00 (paper). xi + 200 p; ill.; index. ISBN: 0-231-11786-8 (hc); 0-231-11787-6 (pb). 2001.

This book is a rich source of ideas on what environmental values are, where they come from, how they fit in with the scientific picture of nature, and how they relate to traditional human values. The depth of analysis of environmental ethics is unsurpassed. It will not, however, please many environmentalists since it lacks the kind of inspirational message common to popular works that appeal to feelings of oneness with nature.

Agar's aim is "to show that individual living things are intrinsically valuable and to found an environmental ethic on this value" (p ix). The central problem he poses is: how can the interests and ends of traditional human centered ethics be extended and revised to support an ethic that will serve to preserve environmental values that are increasingly threatened by human activities? To ground a life-centered ethic, he looks to science. Scientific knowledge provides the bridges to extend human centered values