ago, was among the first to comment on the importance of studying the evolution of gene networks. His book is aimed squarely at professionals. It makes few concessions to naïveté, assuming a fairly extensive background in molecular and developmental biology and a passing familiarity with the evolutionary history of animals.

Davidson's approach, however, is far less mainstream than that of Carroll *et al.* Rather than weaving his narrative around simple lessons drawn from a handful of familiar studies, the author builds his case from the ground up. He is concerned with general principles of genomic information management in embryos, and he emphasizes the reasons why diverse regulatory strategies are used at different times during development and by different kinds of animals. In the last chapter, Davidson directly tackles the *Hox* Paradox. He argues that the diversity of *Hox* gene expression domains among extant animals (in limbs, gut, nervous system, and reproductive organs) makes it difficult to reconstruct the original developmental function of these genes. He presents an ingenious explanation for why homologous genes are sometimes expressed in nonhomologous but functionally analogous structures (such as the eyes of insects and vertebrates).

Davidson does not discuss what kinds of mutations are likely to rewire gene networks. This is a surprising omission given his empirical contributions to our understanding of the organization and function of the DNA sequences that regulate transcription. In contrast, Carroll *et al.* raise this important issue in their final chapter. Their largely theoretical discussion is thought-provoking and highlights just how little concrete information exists regarding the evolution of regulatory DNA sequences. Both books make a persuasive case for the need to fill this large gap in our understanding of how genomes evolve.

That these books were written by developmental, as opposed to evolutionary, biologists is clear throughout. One manifestation is the restricted taxonomic focus on model systems, despite a growing body of pertinent information from diverse groups of animals. This is particularly true of Carroll *et al.*'s book, whose title belies an almost exclusive focus on a handful of species in just two phyla. Evolutionary biologists may also wish that population-level variation had received more attention in both books, and they may miss the rigorous phylogenetic argumentation that is now routinely applied to comparative data in their discipline.

These are relatively minor concerns, however, and they do not detract substantively from two outstanding books that should be on the shelf of every aspiring practitioner of "evo-devo." The publication of these books marks an important transition in our thinking about the evolution of developmental gene networks. Just a few years ago, the dominant research agenda

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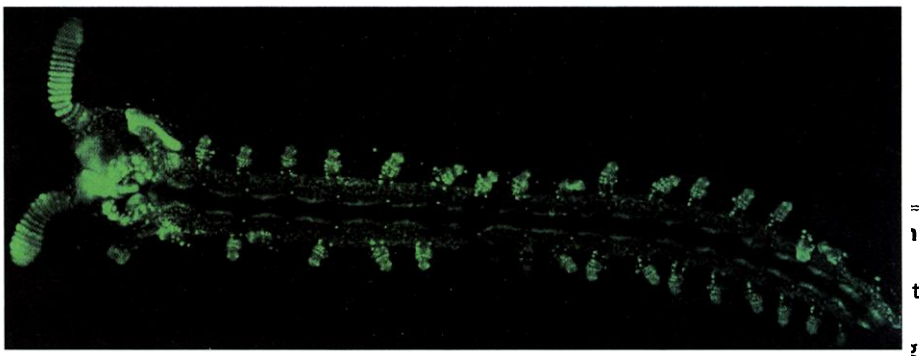
BROWSINGS

Light! The Industrial Age 1750–1900. Art & Science, Technology & Society. ***Andreas Blühm and Louise Lippincott.*** **Thames & Hudson, New York, 2001. 272 pp. $55. ISBN 0-500-51029-6.**

The authors survey the changes in artistic perception, depiction, and symbolism of light that occurred as first gas and then electricity revolutionized illumination. Besides discussing representative paintings, they present a selection of the scientific instruments, practical inventions (such as the 1835 example of a Fresnel lens, left), and household articles that transformed human understanding and uses of light. The book accompanies an exhibition Blühm and Lippincott organized for the Van Gogh Museum in Amsterdam and the Carnegie Museum of Art in Pittsburgh, where it continues through 29 July (www.cmoa.org/html/light/light.html).



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If someone were to charge that textbooks present atomic theory using evidence that is erroneous, misleading, and even fraudulent, and that we should therefore question whether matter is composed of atoms, eyebrows would be raised—at least at the accuser. If someone further claimed that distinguished physicists crassly participate in this fraud to keep the research dollars rolling in or to promote a materialist philosophical agenda, scientists would be angry at the attempt to besmirch the reputations of respected scholars. And if the same person proposed that citizens should encourage local school boards to insert anti-atomic theory disclaimers in science textbooks, discourage Congress and at least one lawsuit against a local school board (*1*). Unlike atomic theory, evolution has obvious theological implications, and thus it has been the target of concerted opposition, even though the inference of common ancestry of living things is as basic to biology as atoms are to physics.

Wells claims "students and the public are being systematically misinformed about the evidence for evolution" because high school and college textbooks rely on invalid or misleadingly interpreted "icons": the peppered moth, the Miller-Urey experiment, vertebrate limb homology, Haeckel's embryos, *Archaeopteryx*, Darwin's finches, the tree of life, four-winged fruit flies, fos-

by Jonathan Wells

Regnery, Washington, DC, 2000. 352 pp. $27.95. ISBN 0-89526-276-2.