

## Book Reviews

### **The New Biology: Discovering the Wisdom in Nature by Robert Augros and George Stanciu. Boston: Shambhala, 1985**

#### **Review by Stanley Krippner**

This provocative book takes the point of view that organisms live in harmony with their environment rather than struggling with it, that Darwin's "survival of the fittest" is not a useful metaphor in explaining evolution, and that nature is efficient, economic, and purposeful. Both authors teach in New Hampshire; Robert Augros teaches philosophy at St. Anselm College, while George Stanciu heads the departments of science and mathematics at Magdalen College. Both reject the "mechanistic scheme" they attribute to Marx, Freud, and Skinner - that humans cannot act for a conscious purpose. Further, they claim that this mechanistic scheme cannot explain life in general because living organisms share the capacity for some kind of self-movement. They do not reject the search for mechanisms of behavior, nor do they claim that one need postulate a nonmaterial entity that directs organisms' vital operations. They simply take the position that the hallmarks of life - reproduction, growth, self-regulation, nutrition - are associated with a natural *form* that acts throughout the physical and chemical properties of matter and is not separable from it.

In their discussion of the consciousness of higher organisms, Augros and Stanciu propose that the root cause of each of the actions of these organisms is awareness of some kind, and illustrate this position with such examples as the "honey dance" of bees and the protective behavior that the male three-spined stickleback fish exhibits towards its nest. However, only the human exhibits intellectual understanding. The authors use dreams as an example of this type of activity:

"If we did not experience dreams ourselves, we would never suspect that dreams occur in animals, no matter what their behavior during sleep, and no matter how much data we collected on rapid eye movement." (p. 84)

Objecting to the model of nature as "red in tooth and claw," Augros and Stanciu claim that it is difficult to find examples of mutual harm between natural species undisturbed by humans. Instead, they coin the motto "Work smarter, not harder" to describe the efficient, cooperative way in which they see every living thing attuned to its environment (p. 138). They speak eloquently of the beauty that can be seen in a bird's skull, metacarpal bone, and flight pattern. Although not all organisms demonstrate the same kind of beauty, "some show simple charm, while others are elaborately decorated; some please the eye by a stark plainness, others overwhelm it with a gorgeousness of color" (p. 149). Nature, then, is not only a superb engineer but a master artist.

In discussing Darwin's theory of evolution, the authors claim not to find data supporting his notions of unlimited population growth in natural populations, competition between individual organisms, and new species being produced by selecting from natural differences. This "does not mean that natural selection is false. It simply means that we cannot use Darwin's argument ... to establish natural selection as a means of explaining

the origin of species" (p. 160). For them, Darwin's description of gradual evolution does not explain the fossil evidence; instead they propose the consideration of such phenomena as "chromosomal doubling" which is "known to be responsible for scores of new plant species both natural and artificially bred" (p. 176). Based on this and other phenomena, they propose as the mechanism for evolution "systematic differentiation," which is an internal cause of change arising from potentialities within the organism itself. It operates by jumps, producing new species immediately, and plays out the possible variations on a theme, acting like a creative artist. Systematic differentiation is economical and efficient, operating with minimum energy, minimum material, and minimum waste.

Finally, Augros and Stanciu discuss the role of purpose, not only in humans but in life generally, claiming that genetic material seems to head toward a predetermined goal, whether in an organism or in the production of new species. They point out how often two or more functions are served by the same organ (tree roots absorb nutrients as well as anchoring the tree firmly in the ground; a whale's blubber stores food, insulates the whale, and provides buoyancy). In pointing out how important the concepts of purpose and will are in understanding human beings, the authors turn to quantum physics; they might also have cited the positions taken by humanistic psychologist who have long advocated the necessity of new theoretical models and novel research methods in studying human beings. Augros and Stanciu echo this concern: "The human sciences are autonomous and cannot take their first principles from physics and chemistry ... Man's understanding and will belong to the independent realm of the human sciences" (p. 15). In searching for the causes of living forms, genetic codes, and the beauty and purpose seen in nature, Augros and Stanciu conclude: "The artist is God, and nature is God's handiwork" (p. 191). But they give no description of this God-concept, except as a First Cause. When it comes to the problem of human overpopulation, they merely cite "natural population regulation," not pointing out that the mechanism may work for other forms of life but has yet to demonstrate its efficacy with humans. In addressing ethics, they claim humanity can "look to nature" - and that this topic will be described in another book. It is true that nothing prevents both nature and God from being the causes of new species, but one would have expected a more thorough description of the authors' God-concept in a book that otherwise is replete with convincing detail, sound argument, and insightful analyses.