

## DARWINISM: FOUNDATION FOR AN ETHICAL SYSTEM?

by *Robert S. Morison*

Last year's\* centennial interest in Charles Darwin refreshed our minds on the importance of his place in the development of modern biology, and indeed of modern thinking generally on the nature of man. Familiarity with the doubts, misgivings, and outright hostility with which his ideas were first received by defenders of traditional morality still makes it hard to notice that what Darwin destroyed with one hand he may well have restored to us with the other—and in a form considerably more appropriate to man's present needs. Darwin's theory of evolution makes at least two important contributions that fall squarely in the field of man's historical preoccupation with religious and ethical speculation.

First, he came up with a thoroughly rational and acceptable explanation of death. In fact death is the very heart of his entire system. The death of all living things is not only required to make room for new and better experiments in living; it becomes the directing force of the creative process. In the long run, the less satisfactory organism dies earlier and therefore has fewer offspring than do his superior contemporaries.

Admittedly this is a hard rule, and carried to extremes, as it was in the nineteenth century, it gave too facile a sanction to the iron law of *laissez faire* economics. Nevertheless, for many of us it is a good deal easier to accept than the classical theological paradox of an all-wise, all-powerful God, giving and taking away life with random inscrutability.

The Calvinist attempt to justify the ways of God to man as pre-ordained punishment for an equally contrived incident of original sin had a certain grandeur, it is true. Nevertheless, its ultimate effect was to reduce human life to an endless and seemingly futile effort to recover lost ground. Darwin's evolutionary hypothesis, rigorous though it might be for the weak, incompetent, or maladapted, at

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least had the merit of opening up endless possibilities. Every living thing was given an important part to play in the very process of creation. Every death became in a sense a hero's sacrifice for the greater good of the species.

In spite of its dynamic and essentially optimistic character, Darwinism has never been comfortably accepted as a base for the construction of ethical and moral systems. There is no getting around the fact, for example, that it tends to lead to a relativist philosophy. Goodness can only be judged in relation to prevailing circumstances. There is no absolute scale of righteousness against which the individual can measure himself for all time.

Worse than this, considered purely as an ethic for the individual, the emphasis on survival as the highest value seems to permit a range of aggressive behavior completely at variance with the teaching of all the great religions. But Darwinism was, of course, not designed as an individualistic ethic. Its intent was merely to provide the best available explanation of the variety we find in life. It is left to us to draw what ethical lessons we may.

As we attempt to construct an ethic that does not ignore the best that science can tell us about the nature of life, we come to Darwin's second important contribution: his emphasis on the species, its survival, and continuous "improvement." In this sense Darwinism may be said to be centered on the community rather than on the individual. A given biological character is judged only in part by its effect on a given individual; the overarching consideration is what it contributes to the survival and continued development of the community or species. This community consciousness places Darwinism within the tradition of all Western religions and some Oriental philosophies.

Individual self-sacrifice for the good of the community is frequently looked upon as evidence of man's dual nature and as testimony to his spiritual advancement over the rest of the animal kingdom. But Darwin showed the secular moralist that there is no need to run the gauntlet of metaphysical dualism in order to find man's finer feelings. Self-sacrifice is built into the material roots of his biological system.

### SELF-SACRIFICE: A BUILT-IN BIOLOGICAL FACT

A convenient example of what one means by "built in" is provided in the recent work on sickle cell anemia. This disease, which involves a peculiar deformation of the red blood cells, has been known for some time to be particularly prevalent in Africa and certain other

tropical areas. It has recently been shown to be due to a single gene that conditions the development of an abnormal hemoglobin.

Persons who inherit the gene from both parents (homozygotes) develop such severe anemia that most of them die in childhood. On the other hand, those who inherit this gene from only one parent (heterozygotes) exhibit few symptoms of the latent disease and, as a matter of fact, gain a considerable advantage over normal people in being relatively unsusceptible to severe malaria.

The over-all result is that certain African tribes in which the critical gene occurs with high frequency are better prepared to survive in a malarious environment (because of the protection afforded the heterozygotes) than are groups in which only the normal form of hemoglobin is found. Here we have a situation in which it is only a slight overstatement to say that the community survives because it possesses a built-in biological character that dooms a considerable percentage of its members to early death.

Other recent work has seemed to generalize this principle to the point of establishing at least reasonably well that communities survive because of the variety of characters present in their so-called gene pool. The process of natural selection does not operate to produce *ideal individuals* possessed of some theoretical combination of "best" traits, each present in the highest degree of intensity and purity. What it concentrates on is the production of gene pools with an assortment of characters that can be drawn upon to produce a community, race, or species with the combination of capacities necessary for survival in a slowly but steadily changing environment. Technically known as "balanced polymorphism," this dynamic equilibrium between "good" and "bad" genes within a given pool gives scientific sanction to the philosophical insight that we are all doomed to suffer the defects of our virtues—and that society as a whole is therefore better off.

The future of man is thus entirely bound up with the future of his gene pool, which in turn is made up of an extraordinary combination of relatively simple chemical compounds. The exact shape and pattern of the genetic units within this chemical structure are the result of hundreds of millions of years of evolution. Each one of us holds a part of it in trust for the future. Not knowing what the future holds, we cannot foretell what will be the best combination of genes for our grandchildren. All we can do is to pass down to them the selection that nature (or God) finds most appropriate at

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the moment, in the faith that normal mutations and the beneficent hand of death will mold the selection to future requirements.

### A PRIMARY MECHANISM OF SURVIVAL

In the preceding paragraphs I have tried to sketch how the selective process operates primarily to produce a species or group with an assortment of characters, rather than a particular individual with a specific set. There is another development of the Darwinian hypothesis that emphasizes the importance of the community in any consideration of the nature of human life. This is the fact that man uses his community membership as a primary mechanism of survival.

Most other orders of living things have developed highly specialized means of winning the struggle for existence. The herbivores are particularly good at digesting cellulose and at running away from danger. The predators are especially good at catching and eating other animals and defending themselves by tooth and claw. Plants can take energy from the sun and turn it into their own chemical structure.

Man does none of these things superlatively, and some he cannot do at all. But man can do more kinds of things reasonably well than can any other single species. In this sense man may be said to be specialized for unspecialized behavior. Furthermore, few even of his most basic patterns, like reproduction and maternal behavior, are inherited in the fixed or predetermined way that is characteristic of the lower animals. As La Rochefoucauld pointed out, many of us must even learn how to fall in love by reading about it; similarly many career women of the present day have had to learn from Dr. Spock how to become satisfactory mothers.

Man owes his place in nature to the fact that he is much better than all other animals at learning from experience and, above all, at sharing his experience with other members of his species. It is this which has enabled him not only to survive but to dominate every corner of the earth and even to make plans for living in the uncongenial environment of the moon. Few of us could now live all by ourselves even on the most salubrious South Sea island, but as a group our range appears to be limited only by the speed of light.

It is clear that the long-run advantages of social life are gained only at the sacrifice of the individual's immediately felt needs. Some sort of balance must be struck between what the individual desires here and now and what will forward the over-all interests of the community of which he is a part. Over the years man therefore developed the

means of identifying community interests with his own; in short, he acquired a conscience. Since the individual ultimately gains more than he loses by co-operating with others and the species as a whole becomes more competent in the struggle for survival, conscience—the *sine qua non* of social life—may be seen as a product of evolution.

As an extension and ritualization of social concern, what the anthropologist calls "culture" further orders relations between human beings and facilitates the transmission of information.

As Dr. Caryl P. Haskins has pointed out in his provocative account of the evolution of animal societies, the evolution of cultures is in many ways analogous to biological evolution. New ideas may be likened to mutations that may be selected and passed down to succeeding generations. The evolution of culture is many orders of magnitude faster than conventional biological evolution, and its course and direction are at least partially under conscious human control. It is this that places the burden of *responsibility* on man's shoulders.

#### THE DANGER OF OVERSPECIALIZATION

In discharging his responsibility, man must be constantly aware of some of the hazards that attend the evolutionary process. Perhaps the most serious is the danger of overspecialization. As mentioned above, man has avoided the intense morphological and biochemical specializations found in lower forms. Useful as such specialization may be in the short run, highly specialized species often come to dead ends when there is a slight shift in the environment or when a better adaptation is worked out by a competing species.

Although man's body remains admirably unspecialized, his culture has not always escaped the risks that brought the magnificent dinosaur to his knees. For example, as Haskins points out, the highly integrated totalitarian society may be spectacularly successful for a generation or two, but it never can succeed for long. The rigid specialization of function within the society entails too great an atrophy of individual abilities, and the equally rigid over-all structure prevents adaptation to changed external conditions.

Another more subtle danger in the evolution of cultures is their tendency to specialize on meeting the desires of but a limited fraction of the human species. A specific culture has always been cherished at least in part because of its survival value in the face of attack from other cultures. Even the visions of human brotherhood characteristic of the great religions have too often been at least tacitly restricted to

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the members of a particular group. In extreme cases, salvation becomes tied to some specialized form of sacrifice, and the Lord's work becomes identified with obliterating those who prefer to sacrifice in some other way.

Perhaps the crucial Darwinian question for our time of crisis is whether or not man can broaden his culture, his concept of human brotherhood, and his tolerance of variation so that it becomes coextensive with his gene pool. For important though the evolution of culture has been for the advancement of human welfare, it can only work with the biological stuff of which man is made. And this, in turn, is all contained in a few hundred milligrams of genetic material spread throughout the entire human race. Until this moment in history its composition and development were entirely controlled by the impersonal forces of natural selection, but it now seems to stand at least in part at the mercy of man himself.

The physicist and the biologist were the first among us to grasp the essential change that has come over the conflict of cultures in our time. War is no longer the continuation of policy—it is the continuation of natural selection by other means. Millions, perhaps billions, of years of orderly reshaping of genetic material has brought man out of the primeval slime to his present grand estate. And all this the same man proposes to put at stake in a cosmic game of Russian roulette. It is because they know that the atomic gun used in this game can destroy in the twinkling of an eye the chemical bonds that nature has taken so long to join together that the Schweitzers, Russells, and Paulings are trying to save us from presumptuous sin.

Clearly this is a problem for everybody, not just Christians, not just Communists, not just the innocent bystanders. But as inheritors of the Christian tradition we have a special obligation to inquire whether our Christian culture is fully ready for the job.

### NO IDEAL MAN

As a Darwinist might see it, the actual code of ethics and morals enjoyed by Christianity—the golden rule, the sacrifice of self, the emphasis on human brotherhood—all seem admirably fitted to present needs. But the realization of these ideals seems frequently to have been hampered by a cultural overspecialization that is essentially philosophical in nature. The Graeco-Christian tradition, in spite of much argument, some vagueness, and a good deal of confusion, is essentially idealist-realist rather than empirical-nominalist in outlook. At base, man de-

rives his sense of dignity and his brotherhood from participating, however imperfectly, in the ideal image of man which is God.

Out of this view has come most of what is fine in our Western tradition, but the position has always left the door too wide open for those who wish to grade men by their closeness of fit to the idealized image. It permits, if it does not actually encourage, the heresy that some people are more "chosen" to represent God than others. No matter how broadly tolerant the holders of such views may be, they must always cherish the lingering hope that the salvation of the world depends on converting the unbelievers to a more ideal image.

The nominalist biological position is that there can be no such thing as an ideal man. Men are brothers simply because they all draw their assortment of genes from a common pool. Each individual owes his survival and general well-being partly to his own limited assortment of characters and partly to the benefits received through cultural interchange with other individuals representing other assortments. It follows that the brothers in such a human family have a sacred obligation to maintain the richness and variety of their heritage—their human gene pool and their common culture. Every man in a sense must become his brother's keeper, but the emphasis is on keeping and expanding what both hold in common, not on converting one brother to the ideal image held by the other.