



## Our Animal Heritage

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EARLY a century has passed since the publication of Charles Darwin's *The Origin of Species* laid the foundations of our present understanding of the evolution of organic forms and functions. Today practically all serious biologists believe that the more complex organisms arose through gradual modification, in the course of geologic ages, from simpler, primitive forms; and no alternative explanation of their origin presents a serious challenge to this view. But despite the firm establishment of the evolutionary theory, there has been a widespread emotional reluctance to accept its full consequences; it is felt that man is somehow degraded by his derivation from simpler or, as we often say, "lower" forms of life.

Even Alfred Russel Wallace, co-author with Darwin of the theory that evolution proceeds through the natural selection of slight individual variations, believed in his later years that certain features of mankind, including our moral sense and more or less hairless skin, could be explained only by assuming that human evolution has been directed by a superior intelligence, not operative in the evolution of other forms of life. A recent book that attained great popularity, *Human Destiny* by Lecomte du Noüy, made the curious distinction between Adaptation, of which the criterion is *usefulness*, and Evolution, with its criterion of *liberty*. On this view, the line of organisms which culminated in man can alone be said to have evolved; the others simply became adapted to their environment.

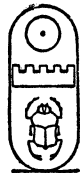
The assumption that a special principle has been at work in the evolution of mankind is fatal to serious, honest thought upon the problems of evolution. Either an evolutionary theory must

be adequate to account for the origin and present condition of *all living things*, or it is to be regarded with the greatest suspicion.

This does not mean that our present knowledge of evolution permits us to trace in detail the origination of all the features which the living world presents. Probably every biologist of wide experience is familiar with many structures and habits, in plants no less than in animals, for which he can hardly begin to account. As a rule, he attributes his perplexity to the bewildering complexity of the forces at work and the immensity of the periods through which they have acted. He does not divide organisms into two or more classes, some as having evolved according to one set of principles and some according to radically distinct principles; this would throw his thinking into confusion.

The underlying reason for this persistent attempt to remove man from the general evolutionary scheme is revealed by the statement of Max Otto that "The hopelessness about himself into which contemporary man has fallen is reinforced by the belief in his animal ancestry." Naturally, we resist any view which intensifies our hopelessness about ourselves. Although the evidence that man has descended from nonhuman ancestors is too strong to be resisted, some thinkers have supposed that to believe that we have been lifted above our animal forebears by the operation of a special principle, or the guidance of a superhuman intelligence, should diminish the shame and despair engendered in certain minds by knowledge of our origin.

Far from causing us to despair about ourselves, the evolutionary view, even in its standard form, should be more heartening than the older, Biblical view which it has been slowly supplanting in the Western mind. To believe



that I have arisen from a simpler form of life, however low and brutal it might have been, makes me far more hopeful about the ultimate possibilities of myself and my kind than to believe that we fell from the higher state of uncorrupted innocence in which God created our first ancestors. And there is certainly no necessary connection between hopelessness about ourselves and the view that mankind is closely allied to other forms of life.

#### *Life Shares its Traits*

In many years devoted to observation of animals in their natural state, I have seen far more to make me proud of that close relationship to them which the evolutionary theory posits than to make me ashamed of this affinity. It has become evident to me that many of the most admirable traits which I share with other men I share also with birds, quadrupeds, and even "lower" forms of life; and the recognition that these attributes are not restricted to mankind, but are far more widely diffused through the realm of life, helps bolster an optimism which is often difficult to preserve in these troubled times. Let us briefly enumerate some of the valuable traits which we share with other animals.

**Perseverance.** Whatever our aim in life, whatever goal we set for ourselves, we are most unlikely to attain it without the capacity to persist in the face of the many obstacles which inevitably arise to block our advance. All great accomplishments have been achieved through perseverance. But this is not a purely human trait. We witness it in the spider which again and again reconstructs its broken web; in the pair of birds who after the loss of eggs or young start afresh to rear a family, repeating this perhaps half a dozen times before they succeed—and, in remarkable degree, in the migratory bird who despite fatigue must fly on and on over a vast expanse of open water, until at last it gains the sheltering land.

Perseverance is one of the most fundamental properties of life, without which it would never have become what it is. Man seems more prone than most other creatures to become discouraged by failure. Organic persever-

ance is the root of the moral virtue of fortitude.

**Courage.** Many animals take risks in the pursuit of food, but they could not habitually place their lives in jeopardy to satisfy their hunger without endangering the existence of their kind. It is in the defense of their young that animals display the most amazing disregard of personal safety. Who can withhold admiration from the birdling, scarcely bigger than his thumb, who pecks or bites the hand extended to touch her nestlings? Many mammals, too, confront larger and more powerful animals which threaten their young; and even tiny nest-building fishes dart at intruders which jeopardize their offspring.

The tendency of parent animals to sacrifice their lives in behalf of their young is certainly held in check by natural selection; for considering the tremendous odds that confront most of them, the species in which devoted parents frequently surrender their lives to save their helpless offspring would soon become extinct. Were it not for this restraining factor, we would witness even more frequent and more astounding instances of supreme valor.

**Parental devotion.** Courage in the defense of home and young is only one of the forms which parental devotion takes. It reveals itself even more consistently in the day-to-day task of keeping the eggs warm, in the often exhausting labor of providing food for the young in foul as in fair weather. The watcher of birds often sees them pass to their nestlings the morsels which they bear in their mouths, when they show plainly that they themselves are hungry.

**Friendship and love.** Animals are capable of strong attachments, usually to others of their own kind, but often to individuals of other species. Naturalists have recorded many instances of the latter sort, and often it is impossible to point out any material advantage which the animal gains from this close companionship. In many non-migratory birds, especially in the tropics, the mated male and female keep close company through that large portion of the year when they do not breed and their sexual impulses are dormant. In these

instances the pair appears to be held by a personal attachment akin to friendship.

**Co-operativeness.** The most remarkable examples of co-operation in non-human creatures are met in the social insects such as termites, ants, bees, and wasps. But since in many of these societies the workers are unable to reproduce, and could not long survive, apart from their community, we are tempted to compare these associations to the working together of the cells or organs of a body rather than to the voluntary co-operation of free individuals. Many vertebrate animals, from fishes to mammals and birds, seek their food in schools, herds, or flocks, which at least among birds are often composed of a variety of species.

Likewise, gregarious animals of a number of kinds join forces in repelling their enemies. But the most appealing form of co-operation is that not infrequently witnessed in birds, of which unmated individuals may help the parents to nourish and otherwise attend their young. Often these voluntary assistants are older offspring of the same parents, who thus feed their younger brothers and sisters. But at times they are less closely related to the parents, and they may even nourish young of other species.

**Joy in living.** This is most clearly manifest in play, which is the name we give to activities prompted by inner urges, of no immediate utility, that appear to be a source of pleasure. We witness play in the frolics and mock battles of young animals of many kinds, in the galloping of well-rested horses about their pasture, in the soaring and diving of large birds in an updraught of air, in the racing of a school of porpoises just ahead of the prow of an advancing steamer. Play reveals that the whole of an animal's vitality is not taken up by the effort merely to keep alive, but that it enjoys an excess which permits it to give free expression to its nature.

**Repose.** Most animals devote a good deal of time to rest, even by day, when (in purely diurnal creatures) their activity is not inhibited by darkness. And when animals rest, they do so thoroughly, not with fidgeting and impatience, as men so often do. This capacity for

complete repose is certainly a trait of no small value, which restless humans, especially in highly industrialized communities, appear to be in danger of losing.

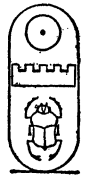
**Appreciation of beauty.** It is doubtful whether any non-human animal has a highly developed esthetic sense; but we certainly witness rudiments of it in the bower-birds of Australia and New Guinea. Their elaborate constructions of sticks are often decorated with a variety of flowers, fruits, and other small colored objects. Also, we know that crows and jays hoard glittering trifles of no use to themselves.

The singing of birds, especially when it is somewhat elaborate and does not follow a stereotyped pattern, suggests that they appreciate melody and rhythm for its own sake. The bright colors, elaborate patterns, and arresting displays of many birds, fishes, spiders, and other animals are most difficult to account for except on the assumption that they help to win a mate; and this suggests that in these creatures vital processes are enhanced or intensified by bright color and rhythmic movement. The capacity to be stimulated in this fashion seems to be the foundation of all esthetic enjoyment.

**Curiosity.** Fairly widespread among the higher animals is the wish to know what is happening in their vicinity, or to learn what is in or behind an opaque object. This is not always motivated by eagerness for food or apprehension that danger may be lurking there. Unfortunately, as in children, curiosity may lead to destructiveness; having no developed technique for examining the object which puzzles it, the ape crudely tears it to pieces. But such curiosity is the raw material out of which grew our science and philosophy.

**Temperance.** Although some animals, especially the smaller birds and mammals, consume, relatively to their size, enormous quantities of food each day, they need this to stay alive. Free animals are rarely gluttonous; often they go away leaving some appetizing fruit or other food half-consumed. Persistent gluttony would soon prove fatal to creatures whose survival depends upon preserving their fitness.

**Integrity.** The several facets of the behavior of any free animal, as how it



procures food, migrates, wins a mate, builds a nest, and attends its young, form an integrated whole—often referred to as its pattern of behavior. Every normal animal preserves this pattern as far as it can, even in the most adverse circumstances. Sometimes it succumbs to its inability to modify its method of procedure as would a human being. But the animal who dies rather than change its ways has something in common with the man who forfeits his life rather than abandon his moral or religious principles.

We humans need moral rules precisely because we are not innately endowed with modes of conduct adequate to guide us through life with some satisfaction to ourselves and those of our kind who surround us. A moral code is the human substitute for the animal's pattern of behavior; hence, to deviate from the latter is analogous to being unfaithful to the former.

#### ***Pre-human Affinity***

It is evident that in animals we find, in more or less developed form, a large proportion of those traits and faculties upon which we humans most pride ourselves. We inherited at least their rudiments from our pre-human ancestors; we became what we are through the further elaboration of our animal heritage. Believing that the whole dignity of man rests in his possession of some of these qualities, we often indignantly deny their origin, fearing that to recognize it would somehow degrade us.

We use all our ingenuity to argue away the obvious similarity between the human trait and the corresponding behavior in the animal. Thus it is commonly said that a woman's devotion to her child is an expression of "maternal love," whereas the animal's attachment to her offspring is "parental instinct." Where we perform an act from a sense of duty, an animal carrying out a corresponding act is said to follow its innate pattern of behavior.

In view of our profound ignorance of the precise relation between our own mental and bodily states on the one hand, and of the psychic life of animals on the other hand, these distinctions rest upon a precarious foundation. Where there is close external similarity be-

tween a human activity and an animal's activity, it is perverse to deny the affinity of the former to the latter.

Primitive clans were proud to trace their descent from their totem animal. But in modern times there has been a persistent conspiracy to vilify the animals. We seem thereby to justify our merciless exploitation of them, and thereby to somehow exalt mankind. But this attempt rests upon confused thinking. If man is higher than the animals, then the higher the animals are the higher man must be. We do not demonstrate that a mountain is lofty by showing that it is higher than an ant hill; but if we can prove that it exceeds Chimborazo or Kilimanjaro, we have made it a high mountain indeed. Similarly, the more that is fine and admirable that we detect in the animals, the more reason we, who believe ourselves to be higher than they, have for respecting ourselves.

When I behold the vast array of forms which the animal kingdom has produced, the great beauty of many of them, and the immense diversity of the faculties which they display, I see no reason to be ashamed of my inclusion in a division of the living world that exhibits such marvelous capacity for development in manifold directions. Such a survey enhances rather than diminishes my estimate of my own potentialities and those of my kind.

Each of us is what he is at the present moment, and how he came to be what he is neither adds nor subtracts a hair's breadth from his physical, intellectual, or moral stature. But knowledge of how one reached his present state influences his estimate of his prospects; and to know that one has arisen from a group of animals so productive of splendid forms and great accomplishments as the vertebrates, is more conducive to a hopeful outlook than to believe that the human stock has fallen from a higher estate, or has remained at its present level for innumerable generations.

It is profoundly unfortunate that the great majority of people who have some acquaintance with animals know only captive individual or domesticated kinds, for this gives them far too low an opinion of animal life and makes them ashamed or resentful of their evo-

lutionary origin. They forget that the common domesticated animals have for thousands of years been selected for qualities useful to man, such as the capacity to produce flesh or milk or eggs, to bear or haul loads, or to chase and worry other creatures, with little regard for all their other qualities. Not intelligence but docility, not spirit but abjectness, not grace but fleshiness, are required of the great majority of domestic animals.

All those beautiful and intricate patterns of behavior, which so well fit the free animal to live in equilibrium with its environment, with a minimum of friction with surrounding animals, have been distorted or destroyed by generations of a life which inhibits their expression. The wonder is, not that creatures which for so many generations have been knocked about and thwarted should so often disgust us, but that we should still find so much that is amiable and attractive in them. But to know animal life at its best and form a fair estimate of it, one must pay careful attention to free animals in their natural habitats, preferably while remaining oneself unseen.

It would be wrong to deny that even free animals exhibit, among many that are admirable, certain disagreeable traits. They are capable of selfishness and rage, and sometimes they bully weaker individuals of their own or other species. But what most distresses the sensitive observer of nature is the callous way in which the carnivorous kinds kill, tear, and devour their victims, which may be animals somewhat closely allied to themselves, and are often the helpless young.

Still, we cannot on this ground refuse to acknowledge our brotherhood to them without at the same time rejecting the similar claim of our fellow men, who with far less excuse slaughter and devour countless animals of the most diverse kinds, tender young no less than the old and crippled, which form the mainstay of the diet of many wild carnivores. For humans, sprung from a vegetarian or omnivorous stock, are neither by structure nor function restricted to a carnivorous diet and could live well without slaughtering their fellow beings; whereas predatory animals

would in most instances perish if deprived of the prey to which they have become specialized by a long evolution.

Even in giving full weight to the disagreeable traits which some animals exhibit, we have far less reason to be ashamed of our place in the animal kingdom than of our failure to make full use of our human capacity for foresight and moral choice. It is our ability to look into the future—to assess competing motives and compare alternative courses of conduct chosen according to an ethical standard rather than in blind obedience to the appetites or affections—that sets us in action, that most sharply distinguishes us from our fellow animals.

We have greater need of this faculty than any animal, for we have not that innate pattern of behavior by which to act in a way that in ordinary conditions would conduce to the best interest of our kind. In the human being this has been tested and perfected by a long racial experience. Our moral faculty, too, has its roots in our animal heritage, but it has been highly elaborated through a long evolution peculiar to our branch of the vertebrate stock. We are put to shame not by our close affinity to the animals, but our far closer relationship to man who fails to make full use of his peculiarly human endowment.

Our human reason, even in its most developed form, and our highest moral ideals are of value only in so far as they modify and direct those motives and affections which come to us from our animal ancestors; for without them we should have no incentive to act. We owe to our animal forebears our staying power, our courage, our capacity for love, friendship, and devotion, our swift response to beauty. Our reason did not create these things, our morality grew out of rather than produced them. When we awake to the full significance of our animal heritage, far from being ashamed of it and wishing to deny it, in the manner of too many timid thinkers of the present day, we shall acclaim it as, under the guidance of our divine faculty of moral choice, one of the greatest sources of our strength.

