

ON THE SANCTITY OF SPECIES

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Precision, verification, and repeatability are the hallmarks of modern science. Over the last three hundred years it has developed tools and methods which allow scientists to conduct experiments dealing with quantities as small as a picogram and as vast as the speed of light. This is, indeed, a feat of the first order which no previous enterprise of science was able to achieve. Tools developed over the last three hundred years allow us to precisely measure quantities such as the wavelength of luminous and radiant waves of the order of 400 to 700 nanometers propagating at a speed of 299,972 km/sec; they can find trace elements of the order of one trillionth of a gram in the farthest reaches of space; they can determine with precision signals emerging from a radio wave returning from some distant star. All of this is commonplace—the matter of fact routine of scientists. One would expect that this exactness and concern in precision would also have a corresponding dimension in the realm of the subject matter of science: the cosmos and life. One would expect to find precise definitions for substances and life forms on which scientific experiments are conducted. Sodium, for instance, cannot be subjected to precise experiments unless we have its precise definition. At a certain level, science is not even possible without this precision, and modern science recognizes this.

Sodium may conjure vague images to the mind of a layman, but for a chemist it is the specific name of an element represented by a symbol (Na), defined by its atomic weight (22.9898), atomic number (11), and specific gravity (0.97 at 20°C). It is readily recognized by its soft, silver-white metallic luster or by its rapid oxidation in moist air. Chemists also know that it occurs in nature only in the combined state, that it is a necessary element in the body for the maintenance of normal fluid balance and other physiological functions. Biochemists go further to tell us that any salt of sodium (sodium chloride or sodium bicarbonate) present in or

added to foods or beverages as a seasoning or preservative, and used in many pharmaceutical products as an antacid, acts as an anticoagulant, providing living organisms the necessary means to perform thousands of chemical reactions in situ. All of this is precisely known for sodium as well as for the other elements—some 107 substances which together constitute the basic building blocks of all other existing things and which cannot be separated into simpler substances by chemical means. Arranged in a periodic table, these elements are but one example of the precision with which modern science has been able to dissect, arrange, measure, and quantify its subject matter.

This high degree of precision, however, vanishes when it comes to the definition of a key conceptual term: species. There is no scientific consensus on what is meant by species. During the last three hundred years this concept has undergone numerous changes, each of which brings more confusion than clarity. At present there are over twenty-five working definitions. The so-called “classical” definition, used by Swedish botanist Carl von Linné (1707–78) and others, defined species as “a group of organisms in which individuals are members of the species if they sufficiently conform to certain fixed properties”. The clusters of variations or phenotypes within specimens (longer and shorter tails) differentiated the species. This definition was discarded when scientists realized that different phenotypes are not always sufficiently distinct from each other; two- and four-winged *Drosophilae* are not two different species but are only morphospecies.

This and other eighteenth-century definitions of species have gone through a sea-change since the advent of the theory of evolution. This radical transformation in biological sciences, wrought by Darwin and his successors, was to produce a windstorm of definitions of species. At the heart of this change is a fundamental recasting of some of the most important concepts about the origin and propagation of species. Darwinian (or Phylogenetic/Evolutionary) species is a group of organisms that shares an ancestor, a lineage that maintains its integrity with respect to other lineages through both time and space. When he compared humans to great apes, Darwin was able to show, bone for bone, that humans are identical to them. In his *The Descent of Man and Selection in Relations to Sex* (1871), he proposed that only late in their development humans and chimps diverged considerably to become sufficiently distinct from each other, and hence they must have had an ancient common ancestor. He then reasoned that humans diverged from the Catarrhine stock compris-

ing of humans, anthropoid apes, and Old World monkeys, all having nostrils opening downward and close together and a nonprehensile, often greatly reduced or vestigial tail. He further speculated that “Africa was formerly inhabited by extinct apes closely allied to the gorilla and chimpanzee; and as these two species are now man’s nearest allies, it is somewhat more probable that our early progenitors lived on the African continent than elsewhere”.

This radical recasting of the concept of species in general and of humans in particular has now achieved the status of dogma, at least in the scientific community. Even though there have been numerous reformulations of these concepts since Darwin, the fundamental mould from where these reformulations emerged has not changed and it is almost impossible for any biologist to work outside this mould without risking his or her career. It appears that by some mysterious mechanism, Darwin was able to implant an idea that would give birth to numerous variations but always remain connected to his central theory, for all these definitions share a common descent.

It is, however, neither the endless permutations of the idea of a common descent nor its paradigmatic force in directing scientific research but its global reach that has made this radical recasting of biological systems a fundamental force defining the way millions of human beings conceive their relationship with the cosmos and its Creator. Today one can find loyal advocates of Darwin’s theory in all faith communities and cultures. Those who do not believe in the Divine origin of life find it irresistible, but even religiously devout individuals have reformulated Darwin’s original idea to “accommodate” their faiths. Thus gaining force, this idea has now spread throughout the world, even though at its root is a vague concept of species—a concept upon which there is no consensus even within the scientific community which by and large works within the evolutionary paradigm.

For faith communities, the turning point in wide-spread acceptance of Darwin’s idea was the insertion of the Hand of God into Darwin’s tree of evolution. This clever device was, however, not merely the result of an imaginative leap; it came through the general acceptance of the authority of science. This is not surprising, for science today has achieved such a magisterial position that anything can be sold by claiming it as scientific. For Muslims, the lure of science is even more irresistible, for there is hardly any country where science is flourishing. This lack has produced an insatiable hunger for science and all things advertised as “scientific”—

may they be electronic gadgets such as cellular phones or vacuous ideas such as common descent.

Darwin's idea arrived in the Muslim world when it was under colonial rule, but its wide-spread acceptance had to wait until the last quarter of the twentieth century, when modern Western education achieved an almost universal hold on the Muslim mind. Two factors are responsible for the current spread of this idea: the rapid increase in the number of Muslims being educated through a system of education in which some form of Darwin's idea runs like blood in a body, and an equally rapid uprooting of the Muslim mind from the Qur'ānic view of manifest reality. The latter often remains hidden under a veil of piety and ritualistic adherence to Islam. This veneer, however, does not shield a person from the affects of a idea whose logical implication can be nothing but the destruction of the sanctity of species—something vouchsafed by the Glorious Book itself: *There is no animal walking on Earth nor any bird flying with its two wings, except that they are genus (umam) like you; and no single thing have We neglected in our Decree* (Q. 6:38).

Built into the basic meaning of the word *Ummah* (of which *umam* is the plural) is the concept of the sanctity of species. Not only does each species preserve its characteristics, but it also receives Divine command (*wahy*) and acts accordingly, the Qur'ān tells us. The ant and the honeybee have always been the ant and the honeybee and will always remain so.

Wa'llāhu A'lam

Wuddistān

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