Alberuni Opinion about history of biology (Darwinism and Evolution A second document)

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ABSTRACT

Abu-Alraihan Muhammad Ibn Ahamad Alberuni (362-440Ah , 973-1048 AD) an Arabic Moslem philosopher , astronomer , mathematician ,pharmacist and biology historian . His opinion about history of biology was expressed in one of the many books and treatises that he wrote which was translated to English language ; History of India .

It was some 60-70 years ago when T.I.Rainow(1943) called attention to the fact that in this book India , his thoughts about natural selection , through struggle for life and survival of the fittest was expounded.

Jan Z.Wilczynski (1959) published a paper about this presumed Darwinism of Alberuni as was expressed in his book India.

It seems that Alberuni also discussed the question of predisposition , and evolution in great detail in his book *Ketaabu al-Jamaaher fii ma'arifat al- Jawaaher* 'The book of Almost known in the Knowledge of the Gems `. and this paper is devoted to express his thoughts in this book which deals with gems, their constitution, nature, characteristics, and differences between them, Alberuni discusses the color changes which the ruby stone undergoes and so he thought that **Perfection** is a route that all things take; the non-living, inanimate stone as well as the human being go through this path during their development In this paper a review was done on Darwin's theory which was a summery of a lengthier work never published in toto, which led to absence of foot notes, an omission which also contributed to the over looking of any processor, one of these may be this Al Baerronni opinion.

Long before Darwin many scientists have contributed to the understanding of the mechanism of organic development and change. It is interesting that we find such suggestions in the intellectual scene of Arabic Islamic civilization. In this paper we try to explain in detail ideas about evolution put forward by one of the main Islamic scientists, Al Baerroni (973 – 1048) who discussed the question of predisposition , and evolution in great detail in his book Ketaabu al-Jamaaher fii ma'arifat al- Jawaaher *'The book of Almost known in the Knowledge of the Gems'* . We will also review Darwin's theory which was a summery of a lengthier work never published in toto, which led to absence of foot notes, an omission which also contributed to the over looking of any processor, one of these may be this Al Baerronni opinion.

Keywords: Evolution, Human being ,Perfection

Preview

The debate about man's origin is one of the oldest, if not the oldest, debates and questions that occupied man's mind. Answers came from different quarters of man's life, and developed with his intellectual development and sophistication. All religious systems, primitive or highly developed monolithic ones, have had their say in response to where man has come from, and how he was originated. The history

of science too is full of opinions and thoughts made scientists- philosophers (since the two were hardly separated) about such questions. One major theme in this tradition was that things didn't happen in single steps; rather, they took place gradually. This is the basic idea of evolution. The idea that things developed, 'evolved' was applied to many natural phenomena in the world. This development plan included many things, but stopped short of joining 'man' in. It ran against established religious doctrines. Like everything else, man evolved. However, suggestions for the evolution of man could not be stopped and have become part of the discussion of this topic for a long time.

Observing the animals and plants as well as the non-living objects, man has put forward many questions about life. Some of the salient and fundamental questions have been questions about their origins: How did millions of species of plants and animals living today come into existence? How can the many similarities and differences among plants and animals be explained? How do new species come into being? What happens, or has happened to ancestor species? To these questions and many others like them, the idea of evolution provided a plausible answer.

The concept of Evolution is considered by scientists an important contribution of biology to human thoughts.

Evolution is defined as the natural process through which organisms have acquired their characteristics, structures and functions. The term is derived from the Latin 'evolve", to unroll or unfold, and refers to the orderly development of species from pre – existing ones[1].

Historical review: The idea of evolution is almost as old as the biblical version of special creation. It has it roots in the writings of Empedocles, an early Greek naturalist who is considered to be the Father of the evolution concept. Aristotle(384 -322 B.C) is also said to have foreshadowed the doctrine of evolution in his remarks on racial characteristics in their relation to climate. [2]

The concept of evolution was investigated by the Arabic Islamic scientists[3]. Many of them discussed the concept , not necessarily to approve but may be to deny it .

One can mention a few of those who dealt with this concpt in their writings , such asAl Farabi (died. 339 AH) , Ibn Cinna (Avecina) (died. 402 AH), Ibn Bajah (died.533 AH), Ibn Rushd (died.595 AH) who stated that many human characters are acquired in accordance with environmental factors, and Ibn Maskuih (d.421 AH) who stated that animals can revolute to reach the horizon of human beings and thought that simple-minded people were a an intermediary stage between monkeys and human beings.

It is worth mentioning here that among the first Arabic Islamic thinkers who dealt with the question of evolution were Ikhwan Al Saffa (The Brother of clarity) (3rd century AH). They were the first to mention the theory of a series of orders, according to which organic life starts from simple form and evolutes to more complex orders They believed that animals, plants & non-living materials belong to only one world but are separated from each other by the narrow evolution borders as they believe that the first (simplest)order of animals is linked to the last (highest) order of plants and the last (highest)order of animals is linked to the first order of humenbeigs and they defined this order to include those simple minded people who can only deal with their sensible surroundings on the other hand the consider the highest order of humen beings is just near to angels by high morality[4] .

Al-Baeronni Opinions

Another person who dealt with this matter extensively is Abi Rehan Mohammed Bin Ahammed Al Baerronni[5] (362 – 440 AH, 973 –

[1] Encyclopedia International Grolier of Canada Limited 1963 Vol 7 p. 581

[2] Cambbell, Donald. Arabian Medicine and its Iinfluence on the Middle Ages Vol I p6 Ams Press. New York 1926.

[3] Al Bakerry, Abdul Majeed Shawki Al Basherria Wa Abu Al Basherr Al Haddif Press Mousil Iraq pp.85 -103 1963: Resaal Ekhwan AlSaffa Wa Khulan Al Waffa vol 2 p 457, 168 ,171 published by Dar Beruit and Dar Said for printing and publishing Beruit 1957

[5] Al Zarkalli, Khaeru Deen. Al Aalam Vol 5 Dar Al Elm Lilmalaeen , ed 16. Beruit. 2005: p. 314

1048 AD), a philosopher, mathematician and historian who was born in Khwarizm city (Central Asia) he spent long years in India where he was famous and well respected in many kings courts at that time , after that he returned back to the city he was born and died there.

Amongst the many books and treatises that he wrote is " Al Jamaaher fii ma'rifat Al Jawaaher"[6] , and there are another two important books which were translated to English language ; History of India and AlAtharr Al Bakiaaein Al Ouroon Al Khalia.

It is in "Al Jamaheer ..." book that we are introduced to his views on evolution.

In this book which deals with gems, their constitution, nature, characteristics, and differences between them, Al- Al Baerroni discusses the color changes which the ruby stone undergoes (p. 80) He says

Laymen think that the color of ruby evolves from opaque to white to yellow until it reaches red, according to the explanation of the naturalists that perfection is reached when the ruby gets red. This is also true of gold; when it is cleared out of its impurities and foreign substances it reaches its perfect form .

So the ruby evolves as its color changes accordingly, in order to reach red, which means perfection. By logic there is nothing beyond perfection , as the case with gold it evolves in its solvents once it is produced from its parents (mercury &Sulpher) and.

Another poet Mprecedes, lead ,copper and silver to fulfill the color and the stability and stop at the perfect order and not to go beyond it .

They (Laymen) pertained that when sand is mixed with gold it will only increase its weight but won't change into gold .What the naturalists mean by this concept is the same as they think of how the human being reaches the highest order of perfection compared to low order animals. It is because of its origin and core, and not because he evolves from other orders of life : dog order to bear order to mankind and to human being .

Abu Baker Ali Bin Al Hussein wrote this line of poetry

" So ruby as I have been told
Comes out because of long effect of the sun heat on stones"

So if he(the poet) meant that the effect of the sun heat on a stone will change it into ruby it will be his own thought, but if he meant that the stone material should be the specific one to accept evolution to ruby this will be the truth and as mansor Mord (a poet) said

"Every thing in the world may change from one to another form according to the length of life duration "

And this is of course the way poets exaturate things. "

Analysis of the quotation

On analyzing this passage by Al Baerronni the following points appear

1.While Al Baerronni was trying to explain the different colors that the ruby has, he expressed the idea that ruby changes in color from opaque to red in a process of evolution towards perfection.

2. Perfection is a route that all things take; the non-living, inanimate stone as well as the human being go through this path during their development.

3. Perfection is the final stage in developmental changes, and so the end stage of perfection for a ruby is to be of red color and for man to be a human being as he looks now, and no way to go further as this is the perfect form.

4. He opposed the naturalists idea of evolution from one form of simple life to a more perfect form in one important issue. He argued that although the primary organic form of all beings, may look alike, it is not the same in

[6] Al Baerroni, Abi Al- Rehaan Mohammed Bin Ahmed. Ketaabu Al Jawaaher Fii Ma'rifat Al Jamaaher p 80 published by Aalim Al KetaabBeruit

core, in spite of the fact that it may pass in its development through similar shapes or forms to other orders. So man and animals have their own special primary forms .

Discussion :

The long line of attempts to answer the questions that man has asked man asked about his origins, when he felt that established religious dogma didn't provide him with a satisfactory answer, culminated in the theory of natural selection i.e. the mechanism of organic changes developed by the English naturalist Charles Robert Darwin, (1809-1887) and published in his seminal work "The Origin of Species "(1859).

With the advent of modern biology (3-4 centuries ago), the early ideas of the origin and development of life moved from the realm of philosophy to that of science. Darwin had also been converted to the geological theories of Sir Charles Lyell (1797 – 1875) who, in his book "Principles of Geology" had eschewed catastrophe and supernaturalisms as forces observable in nature – ***heat***, wind, frost, water, and ***sun*** - *had been the primary mechanism creating our landscape.* It was necessary, however, to visualize these forces as operating over enormous periods of *time*.

Darwin[7] emphasized three factors responsible for the changes in animal and plant world:

Variation: the tendency for each organism to vary in some degree or direction from its parental organisms.

Conservative Hereditary : factors that holds each species within bounds ,limiting its degree of variability.

These two factors acted upon by the third factor; Natural Selection: which result in the perpetuation of those creatures best fitted to survive under a given set of environmental conditions.

In reading Al-Baerronni's manuscript we are always faced with fact that he and Darwin were studying few same concepts but with each own opinion. We may find corresponding terms and definitions to Darwin's three factors of change. The following table summarizes these correspondences.

Variation : route to perfection which makes series of species orders .

Conservative hereditary not all primary form will change or evolve to the end stage of evolution and it is because of the specific primary form i.e. hereditary factors differences.

Natural Selection : perfection of non-living materials as well as animals and man are due to long effects of natural forces as evolution will bring an order more capable of coping with the new life changes, meaning higher degree of perfection = higher evolution order.

Interestingly one of the areas which provide strong pieces of evidence for Evolution theory is Embryology. As is commonly known, during pre-birth development, the embryo passes through stages during which it displays certain physical features of lower organisms. This is the basis of the theory of re-capitulation, which states that an organism in its development from ovum to adulthood repeats stages that correspond to early periods in the evolution of its group. If a series of young embryos of various vertebrate is studied, it is surprising how difficult it is to tell which embryo will be a fish , a salamander, or a rabbit. This is what Al Baeronni agreed with naturalists about, but he differs from them in one important point- i.e. that every animal has its own specific primary form (within the ovum) as he mentioned in explaining the poet words.

Conclusion:

Al Baerronni expressed his thoughts on philosophical as well as on scientific issues. These views were based on observation of what he saw as the inevitable and enormous changes in the non-living materials and living organisms. He was brave enough to give his own thoughts and not to accept facts as they were stated by his precedors without subjecting them to strict scrutiny.

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