

The Core Mechanism of Natural Selection: How the Natural Cycle of Potassium Resources Affects the Biological Evolution and the Change of Human Society

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ABSTRACT

Darwin's theory of evolution believes that biological evolution is a process of natural selection. This theory has been supported by much evidence, but the internal biological mechanism is not clear. Here, I elaborate on the cycle of potassium resources on the earth and the biological utilization and efficiency, which may be the core mechanism of natural selection and affect the evolution of organisms and the development of human society.

1. INTRODUCTION

Darwin's theory of evolution believes that biological evolution is a process of natural selection, which is the result of natural changes. What are the aspects of natural changes on the earth?

The natural changes that human beings can directly feel include the change of day and night and four seasons of sunlight, temperature and food, while the changes that cannot be directly felt by human beings include the changes in earth's magnetic field, and may also include the change of cosmic energy. Darwin's theory of natural selection only clarifies the relationship between the changes in animal traits and natural environment [1-6], so what is the core mechanism of such a relationship?

In the other papers, I explained the importance of intracellular potassium in the cellular natural immune system and its unknown role in fighting against the attack of natural microorganisms [7], and also analyzed the relationship between the relative deficiency of potassium ions in animals including human beings and the occurrence of diseases in nervous system and non-nervous system [8]. Here, it elaborates on how the cycle of potassium resources on the earth and its utilization and utilization efficiency used by organisms play a key role in the process of biological evolution, and how such a core mechanism affects the development of human society.

2. THE DISTRIBUTION OF POTASSIUM RESOURCES ON EARTH

Such a question must be understood and answered by discussing the natural potassium resources on the earth. Before the potassium ion was found to play a very important role in the survival of animals and plants [9-14], the utilization of potassium resources by organisms on the earth was completely a process of natural selection [15]. Exploiting the potassium resources on the earth and preparing them into agricultural potassium fertilizer to improve agricultural production is the result of the development of modern agricultural science, but the time it has experienced is very short compared with human history. Before that, human beings did not know that potassium plays an important role in the functions of animal and plant cells, especially animal cells [16-30]. Therefore, based on observation of genetic traits of animals and plants, many scholars in Darwin's era and early period support the view that the survival of animals and plants is a process completely adapted to natural conditions, which is also an important basis for Darwin's theory of natural selection.

Although the development of modern detection technology for potassium resource has found that the distribution of potassium mineral resources on the earth is aggregated [31-33], however, the distribution of potassium containing compounds related to biological activities is very extensive. Whether it is land, sea or lake, there are varying degrees of potassium resource distribution. Where there are organisms, there must be potassium resources, but such potassium resources are also highly uneven and have an important relationship with the recycling process of natural potassium resources and the recycling utilization efficiency of organisms, which determines the natural adaptation and natural selection process of organisms to a certain extent. This means that the natural recycling process of potassium resources on the earth and the utilization and utilization efficiency of organisms have extensive effects on the life, survival and evolution of organisms. Here, I will first discuss the natural circulation process of potassium resources on the earth, and then take the evolution of rivers and grasslands as two examples to understand the impact of potassium resources on the biological evolution and the change of human society.

3. NATURAL CYCLE OF POTASSIUM RESOURCES

Before clarifying the above issues, I must quote an important concept, namely, the natural cycle of potassium resources. Such a cycle process includes the following aspects:

1) The life cycle of animals and plants in relation to the natural cycle of potassium resources

This is an important process of natural utilization and cycle of potassium resources. The creatures on the earth are composed of plants, animals and microorganisms. Modern science clarifies that plants and animals need potassium to maintain survival, especially animals, while maintaining a certain concentration of potassium ions in cells is the basic condition for cell survival. Plants need potassium ions in the process of development, growth and maturation. Modern agricultural planting can artificially provide potassium fertilizer to the plant growth environment to realize the recycling use of cultivated land, however, in the natural process, whether plants can survive and reproduce repeatedly also depends on the abundance of potassium resources in the planning environment. The emergence of a lush forest is a process of repeated recycling of potassium resources in the land environment by microorganisms, animals and plants. Microorganisms and animals living in the soil (such as earthworms) can aggregate and transfer the potassium from the deep layer of the soil to the surface layer. Plants absorb the potassium in the deep layer or surface layer of the soil through their roots, and then aggregate it into the stems, leaves and fruits of plants. Such a process not only brings the potassium in the deep layer of the soil to the surface layer, but also redistributes them in their growing environment through fallen leaves and fruits and dead branches, or brings them to a distance due to the action of rain. Animals living in the forest also obtain potassium in the form of food chain and then store them in the body. The extensive activities and final death of these animals will also complete the circular distribution of potassium resources in nature. If such a process gets a virtuous cycle, it can ensure the harmonious survival and development of animals and plants living in this forest, and finally constitutes biodiversity.

2) Climate change in relation to the natural cycle of potassium resources

Climate change is very important for the recycling of natural potassium resources. It has been clarified that the recycling of potassium resources in nature is inseparable from the recycling process of animal and plant life. However, climate change plays an important role in the recycling efficiency and redistribution of natural potassium resources. Suitable temperature and rain are the basic conditions for the survival of microorganisms, animals and plants, but abnormal climate changes could have a great effect on the distribution of naturally occurring potassium resources. Drought can kill a large number of animals and plants, and the accumulated potassium resources will return to their places of survival. The mountain fire also turns the burned animals and plants into potassium dust, which is immersed in the land. However, the rainstorm may wash the potassium resources that are rich in the sand surface or land, distribute them in different places or bring them into rivers, lakes and oceans through water flow, which will lead to the loss and redistribution of highland potassium resources.

3) Distribution and change of rivers in relation to the natural cycle of potassium resources

Rivers always originate from high mountains and flow to flat lands and oceans. In addition to playing a very important role in the distribution of water resources, river is an important means for the redistribution of potassium resources, especially the rivers with very high sediment concentration, such as the Yellow River in the north part of China, could play an important role in the redistribution of potassium resources and affect the process and changes of Chinese history.

4. RIVER EVOLUTION IN RELATION TO THE DEVELOPMENT OF HUMAN SOCIETY

The plateau and mountainous areas that are rich in potassium resources may be unfavorable to the growth and reproduction of animals and plants due to climate reasons. The potassium resources here fail to realize natural circulation and utilization in situ, but such places could bring a large amount of potassium resources into other places under the washing of unusual rainstorms, or into rivers, lakes and oceans through floods. The bursting and diversion of rivers and the flooding of lakes also distribute potassium resources over a long distance and large areas, which is very obvious in the Yellow River Basin of China (Figure 1). The source of the Yellow River comes from the Loess Plateau. The heavy rainfall in the upper reaches washes out the potassium resources on the Loess Plateau and brings them into the turbid Yellow River water, flowing through a large area in the north China. The water of the Yellow River can contain 2% K_2O [32, 33], which is the main chemical components of potassium resources on the earth. According to historical records, due to the climate change, the Yellow River often burst and changed its course, resulting in countless floods in the basin. The most affected event was the breach in the middle and lower reaches of the Yellow River, resulting in the floods of the Yellow River flowing into a large area and land of central plains lower than the river course, which has a significant impact on China's historical process (Figure 1).

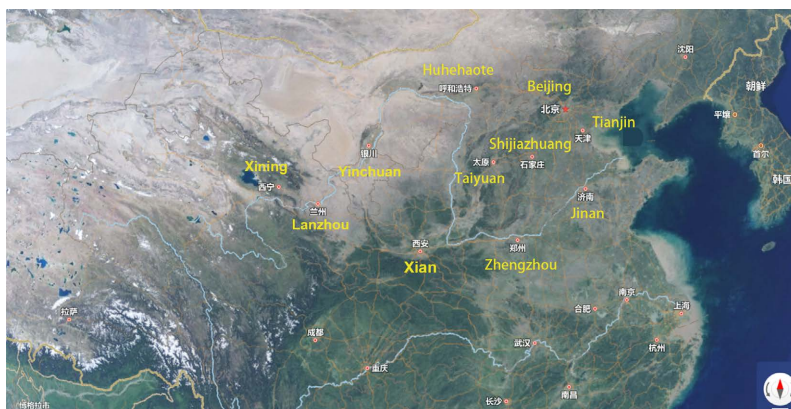


Figure 1. The major regions (cities) marked by yellow along the Yellow River (upper weak blue curve) basins. The down weak blue curve shows the flow direction of the Yangtze River from west to east in China.

From the perspective of river burst and flooding itself, it could cause short-term disasters to the society and economy of the affected areas, however, from the perspective of nature; such a disaster will be an important off-site distribution of potassium resources. The floods can deposit high concentration of potassium on the land that has been cultivated repeatedly and has obvious reduction of potassium resources, which is equivalent to applying potassium fertilizer to these lands in a large area. This is also why the central plains, such as the area around Zhengzhou in Henan province ([Figure 1](#)), which are easy to burst in the Yellow River basin of China, were used to be the birthplace of the Chinese nation and the key area of China's historical changes, because through the reallocation of natural potassium resources by the Yellow River, these lands can be effectively reused for agricultural production. After a large distribution of potassium resources, it can promote the production of agriculture and animal husbandry in the original land and economic development. The human body can obtain the potassium resources from the cultivated land through food or food chain, and such a process can enhance human physique and accelerate the increase of population and social progress. On the contrary, the expansion of farming and the increase of planting will slowly consume the potassium resources of the land. As a result, the planting will reduce production and cannot meet the living needs of the increased population. The reduction of food and the lack of potassium in the human body not only lead to the weakening of human resistance to microbial attacks, but also result in the development of other systemic diseases, which has been elaborated in other papers [7, 8]. These changes will eventually lead to human competition for living resources, and lead to conflicts, wars and dynastic changes. The development of Chinese history and the dynastic changes were often closely related to the climate changes in the Yellow River basin. Therefore, the core mechanism of human social change has an important relationship with the effective use of potassium resources. Such a mechanism could also explain various biological phenomena described by Darwin in his book "On the origin of species... and natural selection" [1].

5. GRASSLAND EVOLUTION IN RELATION TO THE DEVELOPMENT OF HUMAN SOCIETY

Taking the Mongolian grassland as an example, its evolution, the survival of animals and plants and the historical evolution of human society are obviously related to the distribution and effective utilization of potassium resources on this grassland. It can be assumed that at a certain time, there was a vast desert area in Mongolia, which contained rich potassium resources that were suitable for the survival of animals and plants. However, due to climate reasons, there were few animals and plants here, but then the climate changed significantly, and the air temperature was suitable and the rain increased. Some grass could grow under the conditions of suitable sunshine and rain, and absorbed nutrients from the land, especially rich potassium, if such a natural and friendly environment can be sustained, then, with the changes of the four seasons and the reciprocation of many years, finally, the green grass was everywhere and became a wide grassland. In a certain year, a group of nomads from afar came here and found this large grassland. Some cattle, sheep and horses accompanying the herdsmen also found favorite green grass here, so this group of nomads settled here and used this grassland to live, grow and breed. The high-quality green grass provided enough cellulose and abundant Potassium to support their growth and fully replenish and store the potassium needed by cells in the body. Therefore, cattle and sheep grew healthily and reproduced rapidly, and herdsmen also got enough potassium-rich milk and meat food through cattle and sheep, so as to live a healthy life and gradually increase the population. If the herdsmen living on this grassland did not communicate with the outside world, the potassium resources could have a virtuous cycle among the creatures on this grassland. However, if the herdsmen here exchanged their cattle and sheep with the outside world in exchange for other necessities of life, the herdsman society here would develop and the population would continue to increase. As a result, a tribe formed and became bigger and bigger.

However, the development of such a herdsman society also spread the potassium resources on this grassland, resulting in the gradual reduction of the naturally available potassium resources. Finally, due to overgrazing, the potassium resources were consumed and cannot support the good growth of grass, which results in grassland degradation. In addition, under the influence of other factors, such as climate changes,

the effective utilization of potassium resources had also been reduced. Therefore, cattle and sheep can't get enough food and potassium resources, and their physical conditions could decline. Finally, the life and health of herdsmen were also affected by the food chain, resulting in the decline of herdsman tribes.

Based on the above analysis, I can conclude that the changes in the natural circulation and effective utilization of potassium resources not only write the fate and social development history of this grassland tribe, but also clarify the core mechanism of Darwin's "natural selection" theory.

It is understandable that microorganisms, animals and plants in the ocean should also survive and evolve in a similar way.

6. CONCLUSION AND SIGNIFICANCE

In modern society, the continuous increase of human population will intensify the breadth and depth of this cycle. The destruction of ecology will lead to the change of human living environment. Therefore, it may also lead to the relatively unsmooth and unimpeded circulation of potassium resources in nature, thus causing the relative deficiency of potassium in animals and plants. This relative deficiency will first be reflected in plants and microorganisms, and then appear in animals and human beings through the food chain, and then result in animal and human diseases, and affect and change the process of human society. Therefore, this exposition provides important ideas for the development of modern agriculture and medicine and the rational and comprehensive utilization of potassium resources.

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CONFLICTS OF INTEREST

The author declares no conflicts of interest regarding the publication of this paper.

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