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THE EFFECT OF ANCIENT GEOLOGICAL PERIODS IN BIOLOGY

At the end of the 19th century and the beginning of the 20th century, extensive works began in the world for the construction of railways, and for these works, the previous biography of land is necessary. William Smith was the first scientist. The rocks found in the Somerset region from the lower layers of the earth and belong to the Jurassic period (20–144 million years ago). He compared the rocks of the coastal areas of the northern seas and using these rocks, he drew a map of the past periods of the earth in England. Even so far, the stones that came from the lower layers of the earth represented its place, that is, by using those stones, William Smith not only made a map of the past of the earth, but also a map of the lower layers of the earth. This map has a special place in the knowledge of modern geology it helps us to create a table of the past periods. From the information contained in this map, we can see the underground layers and their contents, iron, coal, etc. even if it is in the middle of the ocean. Fossils are very valuable to us. By using fossils, humans can identify the living creatures of the past times and get to know their ways of life. It can also be done by using fossils to divide the age table of the earth into cycles first and then the cycles are divided into periods. For this reason, the previous age table is first divided into periods and then the periods are divided into periods. 1. Upper Carboniferous Period; 2. Lower Carboniferous Period; 3. Middle Jurassic Period; 4. Jurassic Period and 5. Triassic Period.

Keywords: Period, fossils, Evolutionary modeling, extinction, Biodiversity and organisms.

Introduction

The integration of fossils, phylogeny, and geochronology has resulted in an increasingly well-resolved timetable of evolution. Life appears to have taken root before the earliest known minimally metamorphosed sedimentary rocks were deposited, but for a billion years or more, evolution played out beneath an essentially anoxic atmosphere. Oxygen concentrations in the atmosphere and surface oceans first rose in the Great Oxygenation Event (GOE) 2.4 billion years ago, and a second increase beginning in the later Neoproterozoic Era [Neoproterozoic Oxygenation Event (NOE)] established the redox profile of modern oceans. The GOE facilitated the emergence of eukaryotes, whereas the NOE is associated with large and complex multicellular organisms. Thus, the GOE and NOE are fundamental pacemakers for evolution. On the time scale of Earth's entire 4 billion–year history, the evolutionary dynamics of the planet's biosphere appears to be fast, and the pace of evolution is largely determined by physical changes of the planet [7].

Deep time and its codification in the geologic time scale stand as the intellectual triumph of 19th century geology. Initially, time was marked by the comings and goings of fossils, a relative time scale recognized, after Darwin, as the historical record of evolution. However, with the discovery of radioactivity, the prospect of calibrating geologic time in years arose. In 1907, Arthur Holmes used Bertram Boltwood's research on the radioactive decay of uranium to date ancient terrains in Sri Lanka at 1640 million years, and soon thereafter, Joly and Rutherford argued from pleochroic halos in granite that Devonian rocks are at least 400 million years old (Ma). Despite this, routine application of radiometric dating to Earth history accelerated only half a century later, in conjunction with better instruments and careful mapping of Earth's oldest rocks [7].

Materials and methods

Regarding this research topic of The Effect of Ancient Geological Periods in Biology, I have used information sources and references, such as library research and materials, and through new scientific discoveries and innovations. To investigate the Effect of Ancient Geological Periods in Biology. It is worth mentioning. In order to research and investigate this topic, I have visited internet sites, clefs, field methods and internal and external references, and I have brought this article to the forefront of research.

Results and discussion

Upper Carboniferous Period (4.6 billion to 543 million years ago)

This period is called the longest period and is divided into several other smaller periods. The period between 4.6 billion and 3.8 billion is called the Hadean Era. That is the beginning of the formation of the earth's crust. The period after this, i.e. 3.8 to 2.5 billion years ago, is called the Archean Era. After this, the period from 2.5 billion to 543 million years ago is called the Proterozoic Era. During this period, millions and thousands of living organisms have come into existence [17].

Due to climatic variability and tectonic and volcanic activity, the Carboniferous was a time of incredible diversification and abundant terrestrial biota. It signifies Earth's first episode of widespread and massive coal formation. The commercial production of coal led to the early development of Carboniferous stratigraphic classifications in three major regions; Western Europe, Eastern Europe, and North America. Indeed, the name Carboniferous is derived from the Italian Carbonarium (charcoal producer) or Latin carbo (charcoal) and ferrous (i.e., bearing) [5].

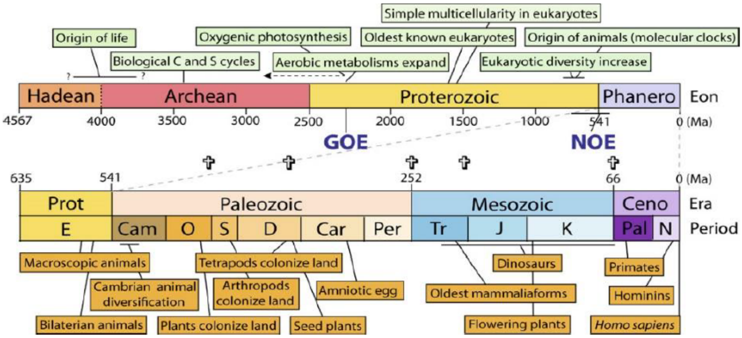

Figure 1 – The evolutionary timetable, showing the course of evolution as inferred from fossils, environmental proxies, and high-resolution geochronology. Phanero, Phanerozoic; Prot, Proterozoic; Ceno, Cenozoic; E, Ediacaran; Cam, Cambrian; O, Ordovician; S, Silurian; D, Devonian; Car, Carboniferous; Per, Permian; Tr, Triassic; J, Jurassic; K, Cretaceous; Pal, Paleogene; Neo, Neogene. Crosses indicate times of major mass extinctions

Phanerozoic era: (from 543 million until now) this era is divided into three other eras, which are: 1. Paleozoic Era, which is also called the ancient era. 2. Mesozoic Era, also called the middle period. 3. Cenozoic Era, also known as new cycle [17].

Paleozoic Era

The period from 543 to 251 million years ago is called the Archaic Period. This period spans 300 million years. The first and most important period is the Paleozoic. The weather was moderate and humid and several cold periods have passed there. This period is divided into six other small periods, which are as follows: Cambrian period, Ordovician period, Silurian period, Devonian period, carboniferous period and Permian period [17].

Actinopterygians (ray-finned fishes) successfully passed through four of the big five mass extinction events of the Phanerozoic, but the effects of these crises on the group are poorly understood. Many researchers have assumed that the Permo-Triassic mass extinction (PTME) and end-Triassic extinction (ETE) had little impact on actinopterygians, despite devastating many other groups. Here, two morphometric techniques, geometric (body shape) and functional (jaw morphology), are used to assess the effects of these two extinction events on the group [16].

Cambrian period

Cambrian period: 543 to 490 million years ago, the main animal phylum, whether extinct or living now, all came into existence in the Cambrian period. At present, 35 phylum live on earth, and during the Cambrian period, their number reached 50 phylum. The appearance of the animals happened suddenly. Scientists call it the Cambrian explosion [17].

Ordovician Period

(490 to 443 million years ago) During this period, many invertebrates' animals lived in the oceans. Fossils from the archives show that marine animals were abundant during this period. Also, terrestrial plants also came into existence during this period. This period witnessed extreme climatic changes. These climatic changes caused the extinction of some living organisms, which are no generation seen in the world. This incident is called the disappearance of Urdu. Animals of the Ordovician period still live in the world. A good example is a species of crabs called horseshoe crab. The fossils of this animal, which belongs to the Ordovician period and is estimated to be 450 million years old, are no different from the horseshoe crabs that still live in the world today [17].

The GOBE marked a sudden rise in early Paleozoic biodiversity accumulation. Leading up to the event was a gradual change in ecosystem engineering from detritus feeding, mainly benthic, Cambrian faunas to more complex, mainly suspension-feeding faunas during the earliest Ordovician that were able to utilize the entire water column. This change facilitated more efficient niche partitioning and more stable ecosystems that allowed for a higher degree of genus resilience. By the Middle Ordovician, these mainly intrinsic ecosystem changes benefitted from a sudden shift to a colder climate that lowered ocean surface temperatures to present-day levels [2].

The Late Ordovician Mass Extinction (LOME) was the first of the «Big Five» Phanerozoic mass extinctions, and it eliminated an estimated 61 % of marine genera globally. The LOME stands out among major mass extinctions in being unambiguously linked to climate change [6].

Silurian Period (443 to 417 million years ago)

During this period, with the increase in temperature, more glaciers, which were in different parts of the earth, were melted and the water level of the oceans increased. The fossils that belong to this period are mostly terrestrial plants. For example: thorny plants such as sea lotus (Nenuphar), fossils of various spiders, which are known, belong to this period. As well as aquatic animals, such as agnathan fish and gnathostomes fish, all of which became fossilized in the Silurian period [17].

The Earth system underwent critical changes during the Ordovician– Silurian (O–S) transition 460–435 million years (Ma) ago. The end Ordovician mass extinction, which can be regarded as the second most lethal of the «Big Five» mass extinctions, replaced much of the Cambrian marine fauna with later Paleozoic fauna [8].

Devonian Period (354 to 417 million years ago)

Until now, any fish fossils have been discovered, most of them belong to this period. Dur˜ing this period, mass extinction (disappearance of generations) took place. Tabulat Stromatoporoids corals also became extinct during this period [17].

The rise of jawed vertebrates (gnathostomes) throughout the Devonian (416 to 359 Ma) and into the post-Devonian is one of the key episodes in vertebrate evolution. This interval encompasses well-known early diversification events, including those of Osteichthyes (bony fishes: ray-finned Actinopterygii and lobe-finned Sarcopterygii, including tetrapods), Chondrichthyes (cartilaginous fishes : Elasmobranchii and Holocephalii), and Placodermi and Acanthodii (extinct groups of debated affinity to extant gnathostomes) [14].

Various Devonian fossils have been attributed to the Insecta; however, all but one of these have been subsequently challenged. This depauperate Devonian fossil record of insects, which does not contain any direct evidence of wings, is followed by a 62-million-year gap that is completely devoid of insect material. This interval, called the 'Hexapod Gap', encompasses the entirety of the Late Devonian (383–359 Ma) and the Mississippian (359–323 Ma) [15].

Carboni Period (354 to 290 million years ago)

The Carboniferous Period, also known as the Stone Age, is divided into two sub-periods:1- Lower Carbon Age, 2: Upper Carbon Age. During these periods, due to some physical conditions, the surface of the earth has risen and fallen, and the water level has fallen and risen, which was the result of the movement of the poles glaciers, also occurred in this period. Scientists say that life has already changed in this period. Many fossils of the Carboniferous period have been discovered, the most famous of which is the Coelacanth fish fossil [17].

Four stratigraphic units, in ascending order, were included: The Old Red Sandstone, later assigned to the Devonian. The Mountain, or Carboniferous Limestone, first listed by William Phillips in 1818. The Millstone Grit, proposed by Whitehurst in 1778. The Coal Measures, proposed by Farey in 1807. Conybeare and Phillips (1822) constituted these units as the Carboniferous or Medial Order, and Phillips (1835) coined the term Carboniferous System [5].

Permian Period

This is the last period of the Paleozoic Era, in which 90 % to 95 % of living organisms have gone extinct and their species have ended on Earth. But despite the extinction of a large number of them, some living creatures of this era still live in the world. For example, the Odonata (a type of insect), which is estimated to be 230 million years old. Also, spider, which is 240 million years old and its descendants can still be seen on our soil [17].

The end-Permian mass extinction was the most severe loss of marine and terrestrial biota in the last 542 My. Understanding its cause and the controls on extinction/recovery dynamics depends on an accurate and precise age model. U-Pb zircon dates for five volcanic ash beds from the Global Strat type Section and Point for the Permian-Triassic boundary at Meishan, China, define an age model for the extinction and allow exploration of the links between global environmental perturbation, carbon cycle disruption, mass extinction, and recovery at millennial timescales [4].

The Middle Era of Mesozoic Period

The period from 60 to 248 million years ago, called the Mesozoic period, is divided into three sub-periods, which are as follows: 1-Triassic Period, 2-Jurassic Period and Cretaceous Period (Weiss, 2018). The Mesozoic Era, comprising the Triassic (~252–201 Ma), Jurassic (~201–145 Ma), and Cretaceous (~145– 66 Ma) periods (Cohen et al., 2013), marked a transition from the last supercontinent Pangaea toward today's fragmented continental configuration and from «old» (Paleozoic) to «new» (Cenozoic) biota that are now integral parts of the modern world (e.g., mammals, birds, angiosperms, scleractinian corals, and calcareous plankton like coccolithophores) [10].

Recent eustatic reconstructions allow for reconsidering the relationships between the fifteen Paleozoic–Mesozoic mass extinctions (mid-Cambrian, end-Ordovician, Llandovery/ Wenlock, Late Devonian, Devonian/Carboniferous, mid-Carboniferous, end-Guadalupian, end-Permian, two mid-Triassic, end-Triassic, Early Jurassic, Jurassic/ Cretaceous, Late Cretaceous, and end-Cretaceous extinctions) and global sea-level changes [13].

Table 1 – The Paleozoic – Mesozoic mass extinctions considered in the present study

Label*	Age**	Status
A	Mid – Cambrian (end-series 2)	Minor
B	End-Ordovician (Hirnantian)	«Big five»

C	Llandovery/Wenlock	Minor
D	Late Devonian (Frasnian/Famennian)	«Big five»
E	Devonian/Carboniferous	Minor
F	Mid-carboniferous (late Serpukhovian)	Minor
G	End-Guadalupian	Potentially major
H	End-Permian	«Big five»
I	Mid-Triassic-1(Ladinian)	Possible
J	Mid-Triassic-2(Carnian)	Minor
K	End-Triassic	«Big Five»
L	Early Jurassic (early Toarcian)	Minor
M	Jurassic/Cretaceous	Minor
N	Late Cretaceous (late Cenomanian)	Minor
O	End-Cretaceous	«Big Five»

Notes: *the labels correspond to Figure 1 («Big Five» mass extinctions are capitalized); **the geologic time scale developed recently by the International Commission on Stratigraphy is followed (numerical age is not provided to avoid apparent inconsistencies between the stratigraphic scales and the available mass extinction dating); ***due to voluminous literature on some mass extinctions, a few of the most important, recent, and timing-related

Growing evidence suggests that biodiversity mediates parasite prevalence. We have compiled the first global database on occurrences and prevalence of marine parasitism throughout the Phanerozoic and assess the relationship with biodiversity to test if there is support for amplification or dilution of parasitism at the macroevolutionary scale. Median prevalence values by era are 5 % for the Paleozoic, 4 % for the Mesozoic, and a significant increase to 10 % for the Cenozoic [3].

Triassic Period (248 to 206 million years ago)

At the beginning of this period, life began in a new way, which is also called the middle period. Fossils related to this period have been discovered in different parts of the world, but contrary to the claims of evolutionists, no such fossil was found in this period to support the gradual evolution. The remains of the Arizona forest are counted among the fossils of the Triassic period. These forests were made up of plants called Orocari Shelly. These plants also reject gradual evolution. The age of these plants is estimated from 248 to 206 million years, but there is no difference with the species that live in different forests of the earth today [17].

The end-Permian mass extinction was the most severe extinction event in the Phanerozoic, with an estimated loss of ca. 80–96 % of species and ca. 50 % of families of marine invertebrates. On land, tetrapods and insects were likewise diminished and also for plants a loss of diversity (or taxonomic richness) has been suggested to occur between the Changhsingian (latest Permian) and the Induan (earliest Triassic), with a magnitude that is comparable to the losses in marine invertebrates [12].

The Triassic represented an important period that witnessed the diversification of marine and terrestrial ecosystems. The radiations of terrestrial plants and vertebrates during this period have been widely investigated; however, the Triassic history of insects, the most diverse group of organisms on Earth, remains enigmatic because of the rarity of Early-Middle Triassic fossils [19].

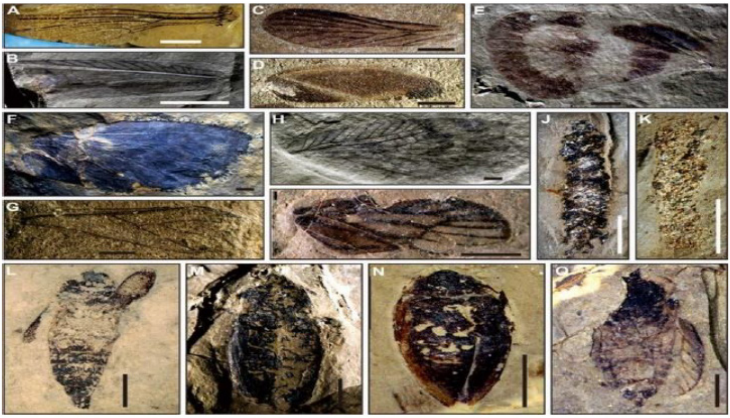

Figure 2 – Representative fossils from Tongchuan and Karamay entomofaunas. Tongchuan entomofauna (A to C, E to J, and L to O), and Karamay entomofauna (D and K). (A) Zygophlebia (Odonatoptera: Zygophlebiidae), NIGP163160; (B) Locustavidae (Orthoptera), NIGP162042; (C) Prochoristella (Mecoptera: Permochoristidae), NIGP162043; (D) Corixidae, NIGP162044; (E) Boreocixius (Hemiptera: Surijokocixiidae), NIGP162045; (F) Dunstaniidae (Hemiptera), NIGP162046; (G) Aphidoidea (Hemiptera), NIGP162047; (H) Chauliodites (Grylloblattida: Chaulioditidae), NIGP162048; (I) Cicadocorinae (Hemiptera: Progonocimicidae), NIGP162049; (J) Ichnogenus Folindusia (Trichoptera), NIGP162050; (K) Ichnogenus Terrindusia (Trichoptera), NIGP162051; (L) Myxophaga (Coleoptera), NIGP162052; (M) Elateriformia (Coleoptera), NIGP162053; (N) Dytiscoidea (Coleoptera), NIGP162054; (O) Cicadocorinae (Hemiptera: Progonocimicidae), NIGP162055. Scale bars, 5 mm (white), and 1 mm (black)

Jurassic Period (From 206 to 144 million years ago)

Many different dinosaurs appeared during this period. At the end of this period, a large number of marine animals such as oysters have disappeared. Some species of animals that lived in the Jurassic period are still alive today, such as crocodiles and lizards. The fossils of lizards and crocodiles that have been discovered so far are 200 million years old. These fossils are not at all different from today's crocodiles and lizards [17].

Known as the roof of the world, the Qinghai-Tibet Plateau is the most extensive plateau in China and the highest plateau in the world. It also has some of the world's most active tectonic belts. Te Bangong-Nujiang suture zone (BNS), which lies between the Qiangtang block and the Lhasa block, is a relic of the closure and cessation of the Bangong-Nujiang Meso-Tethys Ocean (BNMO) [18].

Cretaceous Period (144 to 65 million years ago)

The Cretaceous period is the last period of the Mesozoic. Dinosaurs and some other land animals have disappeared during this period, that is, their descendants are no longer seen in the world. Many other animals that lived in this period, such as the sea crab similar to the horseshoe, which lived 140 million years ago, and the leaves of the coconut tree, which is 125 million years old, are still seen in the world. No changes have been made [17].

The observed diversity of dinosaurs reached its highest peak during the mid- and Late Cretaceous, the 50 Myr that preceded their extinction, and yet this explosion of dinosaur diversity may be explained largely by sampling bias. It has long been debated whether dinosaurs were part of the Cretaceous Terrestrial Revolution (KTR), from 125–80 Myr ago, when flowering plants, herbivorous and social insects, squamates, birds and mammals all underwent a rapid expansion [11].

Cenozoic Era

The Cenozoic Era started 65 million years ago and continues until now and we live in it. The Cenozoic Era began with the end of the Cretaceous period. Geologists have divided this period into three other small periods and they are as follows: 1-Paleocene, 2-Neocene, and Quaternary. Cenozoic Era also has fossils like other eras. An important feature that can be seen in these fossils is that they have not changed at all over billions of years [17].

Fossils of plants that lived at high latitudes provide a sensitive and unparalleled record of the complex interplay of global climatic change and polar conditions through time. High latitude plants, presently portrayed by extant polar desert, tundra, and taiga floras, require adaptations for stringent «icehouse» conditions. An icehouse world is, however, infrequently encountered in earth history [1].

1 Discussion

Every living organism has a direct relationship with the physical and biological environment for its activities. No living organism can live alone, but they depend on other living things for their survival, so all living organisms need an environment. And animals are one of the components of the environment, which is important to know, because animals are not only a good source of food for us and you, but they also play a major role in industry. Because skin, wool, wax, silk and other things come from animals. Therefore, animals don't have only more economic importance for us, but for the scientific recognition of animals in which ancient geological periods they live, it is necessary. Through this, we can understand the origin of animals, their body structure, evolution, development and the basic structures of the body, and observe all the future conditions, changes and trends of the environment. And to understand their evolution, it is necessary to study the effect of ancient geological periods on the recognition and evolution of animals. By using fossils, humans can recognize the living creatures of the past and get to know their ways of life. Also, by using fossils we can divide the age of the earth into periods. Based on the study of the Earth's layers and looking at the fossil record, it appears that living things were created completely by evently. The oldest layer of the earth, in which fossils were found, was formed in the Cambrian period, which is 500 to 550 million years old. Which fossils have been found in this layer clearly shows that they did not evolve, but were created. The fossils found in this layer include: snails, sponges, earthworms, marine hard skins and other invertebrates with very complex structures. From the study of the fossils of all these creatures, it is clear that their creation happened suddenly, which is called the Cambrian Explosion in geological science. These invertebrates' animals have complex structures that cannot be developed through evolution. Geology magazine, which is also called Darwin Press, in an article written by Richard Monastersky, states: Today, any living organisms that we see have emerged into being by suddenly after half a billion years.

According to the theory of evolution, all living things came from a common ancestor. In this order, over time, living organisms have changed from one form to another, but no fossils of living organisms have been discovered that have changed or changed from one state to another. Looking at the fossils, it becomes absolutely clear that living things did not evolve, but were completely created from first day.

The half-billion-year history of animal evolution is characterized by decreasing rates of background extinction. Earth's increasing habitability for animals could result from several processes: (I) a decrease in the intensity of interactions among species that lead to extinctions; (II) a decrease in the prevalence or intensity of geological triggers such as flood basalt eruptions and bolide impacts;

(III) a decrease in the sensitivity of animals to environmental disturbance; or (IV) an increase in the strength of stabilizing feedbacks within the climate system and biogeochemical cycles. There is no evidence that the prevalence or intensity of interactions among species or geological extinction triggers have decreased over time. There is, however, evidence from palaeontology, geochemistry and comparative physiology that animals have become more resilient to an environmental change and that the evolution of complex life has, on the whole, strengthened stabilizing feedbacks in the climate system.

1 Conclusions and Results

Imagine the nearly unimaginable: 4.6 *billion* years. That's how old the Earth is – a mind-boggling length of time. And to measure it, scientists use special terms, most of which focus on the planet's changing geology. That's why, in fact, it's known as *geologic time.*

Almost as mind-boggling is how geologists figured this all out. Like chapters in a very, very thick book, layers of rock chronicle Earth's history. Put together, the rock records the long saga of life on Earth. It shows how and when species evolved. It also marks when they thrived - and when, over millions of years, most of them went extinct.

The oldest layer of the earth, in which fossils have been found. It was formed during the Cambrian period, which is 500 to 550 million years old. The fossils that were found in this period include snails, sponges, earthworms, sea crustaceans, and other invertebrates with very complex structures. For example: eyes, branches, blood circulation and other anatomical structures, which are completely similar to those of today's species. But in the 18th and 19th centuries, the field of geography developed. At that time, when the world became familiar with the extraction of metals and they were trying to build railways everywhere, deep research was done about the land. The research in the field of earth has proven that the layers of the earth and the organisms that live on the earth in the previous geological periods of the earth, because the organisms need a place to live and environmental conditions, living beings cannot live without the environment and have necessary and binding relationships with each other. On this basis, it was revealed that the previous geological periods also play a role in identifying the organisms of the past (animals, plants and other microscopic organisms).

Geologists have divided the history of the world into periods and periods into cycles to make it easier to study. They have used rocks and fossils to determine the age of these periods and cycles. The collection of fossils is called the fossil world. In the 18th century, scientists divided all fossils into two categories, one type being animal fossils and the other type being plant fossils, after fossils were discovered more and gained more scientific value. For the last time, in 1963, he divided all the fossils into five groups (1 – The world of animal fossils (Animalia), the oldest specimen of which is 600 million years old. 2 – The world of plant fossils (Plantae), the oldest specimen of which is 500 million years old. 3 – The world of bacterial fossils (without nucleus) (Monera), the oldest specimen of which is 3.9 billion years old. 4 – The world of single-celled fossils (Protoctista), the oldest specimen of which is 1.7 billion years old. 5-The world of multicellular fossils (smooth-bodied), the oldest sample of which is 550 million years old.) Basically, these are the resources that form the basis and foundations of the science of biology. Therefore, ancient geological periods have great importance and value for the science of biology, and have inseparable links with biology.

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ЕЖЕЛГІ ГЕОЛОГИЯЛЫҚ КЕЗЕҢДЕРДІҢ БИОЛОГИЯДАҒЫ ӘСЕРІ

19 ғасырдың аяғы мен 20 ғасырдың басында әлемде темір жол құрылысы бойынша ауқымды жұмыстар басталды және бұл жұмыстар үшін жердің бұрынғы тарихы қажет болды. Ол жөнінде Уильям Смит бірінші ғалым болды. Сомерсет аймағында жердің төменгң қабаттарынан табылған және Юр кезеңіне жататын тау жыныстары (20–144 млн жыл бұрын) Солтүстік теңіздердің жағалық аудандарының тау жыныстарын салыстырып, осы жыныстарды пайдалана отырып, жердің картасын сызды. Англиядағы жердің өткен кезеңдері. Осы уақытқа дейін жердің төменгі қабаттарынан шыққан тастар оның орнын бейнелеген, яғни сол тастарды пайдалана отырып, Ульям Смит жердің өткен уақытының картасын ғана емес, сонымен қатар жердің төменгі қабаттарының картасын жасаған. Бұл картаның қазіргі геология білімінде алатын орны ерекше, ол өткен кезеңдердің кестесін құруға көмектеседі. Бұл картадағы мәліметтерден мұхиттың ортасында болса да, жер асты қабаттары мен олардың құрамындағы темір, көмір, т.б. қазба қалдықтары біз үшін өте құнды. Қазба қалдықтарын пайдалану арқылы адамдар өткен дәуірдегі тіршілік иелерін анықтап, олардың өмір сүру жолдарын біле алады. Мұны жердің жас кестесін алдымен циклдерге бөлу үшін қазбаларды пайдалану арқылы да жасауға болады, содан кейін кезеңдерге бөлінеді. 1. Жоғарғы карбон кезеңі; 2. Төменгі карбон кезеңі; 3. Орта Юр кезеңі; 4. Юр кезеңі; 5. Триас кезеңі.

Кілтті сөздер: период, қазбалар, эволюциялық модельдеу, жойылу, биоәртүрлілік және организмдер (ағзалар).

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ВЛИЯНИЕ ДРЕВНИХ ГЕОЛОГИЧЕСКИХ ПЕРИОДОВ В БИОЛОГИИ

В конце 19 века и в начале 20 века в мире начались обширные работы по строительству железных дорог, и для этиъх работ необходима предыдущая биография земли. Уильям Смит был первым ученым. Пароды, найденные в районе Сомерсета из нижних слоев земли и относящиеся к юрскому периоду (20–144 млн лет назад). Он сравнил породы прибрежных районов северных морей и по этим породам начертил карту прошлые периоды земли в Англии. Даже до сих пор камни, пришедшие из нижних слоев земли, представляли ее место, то есть с помощью этих камней Уильям Смит составил не только карту прошлого, но и карту нижних слоев земли. Эта карта занимает особое место в знаниях современной геологии, она помогает нам составить таблицу прошлых периодов. Из информации, содержащейся в этой карте, мы можем увидеть подземные слои и их содержимое, железо, уголь и т.д., даже если оно находится посреди океана. Окаменелости очень ценны для нас. Используя окаменелости, люди могут идентифицировать живых существ прошлых времен и узнать их образ жизни. Это также можно сделать, используя окаменелости, чтобы сначала разделить таблицу возраста Земли на циклы, а затем циклы разделить на периоды. По этой причине предыдущая таблица возрастов сначала делится на периоды, а затем периоды делятся на периоды. 1. Верхний каменноугольный период; 2. Нижний каменноугольный период; 3. Среднеюрский период; 4. Юрский период; 5. Триасовый период.

Ключевые слова: период, окаменелости, эволюционное моделирование, вымирание, биоразнообразие и организмы.

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