

# Vegetation Cover of Earth and the Sun Activity

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**Abstract:** This our paper deals with the very important problems of studies of planet Earth by the deferent scientists. Sciences are plenty on Earth and nevertheless the science of Botany is most important science.

**Keywords:** Planet Earth, Its Environment, Climates in past, Present and in future, The Sun activity in numbers of Wolfs, Similarity Index – SI.

As we all know a rather well that there are of plenty of scientists on the planet Earth. Data of all scientists are needed and important for peoples of the planet Earth. And nevertheless the Science of the Botany is very important science in all relation as far the data of this science are uniting of all peoples of the planet Earth. Data of plenty of sciences has been used by us [1-11].

Vegetation Cover of Earth – this is of the gold clue of information about of all life on planet Earth in past and nowadays. Anyone site of vegetation cover of Earth call forth by: 1) longitude and latitude; 2) receipt of warmth outer space.

We all know a rather well that Vegetation Cover this are flora and vegetation of any site on the Earth. These are plants what are useful for all who lived in past and living at planet of Earth at nowadays. And we all have to remember the facts – this all beginning from simple organisms to extra complicated, including of recent peoples.

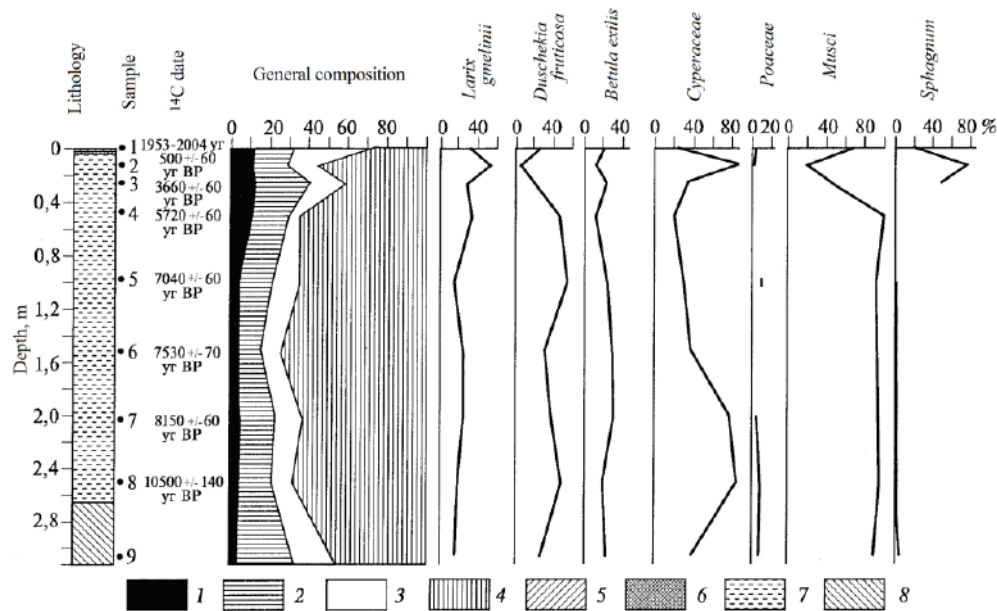
Working up during many years in contacts with scientists of many states of Earth – Sweden, German, United States of America, Switzerland, Italy and so on, taking up part in many International Congress and Conferences, we understand - Sciences are the best and important for studies of the life on the Earth in all relations – for studies of the nature, climates, for studies of life of mankind on Earth as in past, nowadays and in the future. Prof. Larry D. Agenbroad, geologist and paleontologist, The Mammoth Site Museum in North Dakota, USA evaluating of my data [1] first showed that contacts of the different sciences

are very important and useful in all relation. Pollen-Spore analysis method is the best index for studies of Environment and Climates of the Earth [10, 11]. As well known the method of Pollen - Spore analysis method has been widely used in geology, e.g. in phytostратigraphy, paleofloristics and paleogeography (evolution geography), palaeoecology and so on. As have been shown by professor G. Erdtman (2), the first contact economic geology and palynology in the form of Spore-Pollen analysis method was made as early as last year World War I.

This method, as discussed by K. Fegri and J. Iversen [3], is based on the actuality principle - There is only one fact in spore - pollen analysis method that always hold true - a pollen grain of plant species came from a specimen of that species. The great Swedish botanist Carl Linnaeus wrote: "There is not knowledge without of the species. Everybody going to the way of studying the environment of the planet Earth should know and remember this axiom."

What is spore -pollen spectrum? In our opinion V. P. Grichuk and E.D. Zaklinskaya [4] have given the most precise definition of this notion. Under the spore - pollen spectrum they understand a totality number of plants pollen and spores, both shed on the modern Earth surface and found in the fossil state, expressed in the form of percentage of components. Consequently, composition of pollen and spores reflected of the composition of the vegetation cover (flora and vegetation) of this or that region of the Earth. It is actually, that serves as basis of the spore-pollen analysis method. Here we have to stress the fact that general composition on the data of V. P. Grichuk and E.D. Zaklinskaya included of the tree elements only, namely, 1) pollen of trees: 2) pollen of shrubs and sub-shrubs: 3) spores of ferns and mosses.

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**Figure 1:** Pollen-spore diagram for the sediments of the 2nd upper flood-land terrace of the Fomich River, Taymyr Peninsula, Russia (Ukraintseva V., 2005; Ukraintseva V., Kultin N., 2015).

Keys: (1) pollen of trees, (2) pollen of shrubs and sub-shrubs, (3) pollen of grasses, (4) spores of mosses and ferns; (5) sand; (6) sand with organic matter included; (7) peat; (8) sand of mixed grain sizes.

On of our data the general composition included of the four elements, namely; 1) pollen of trees: 2) pollen of shrubs and sub-shrubs; 3) pollen of grasses; 4) spores of mosses and ferns (Figure 1). This data are very important for studies of plant cover of the planet Earth.

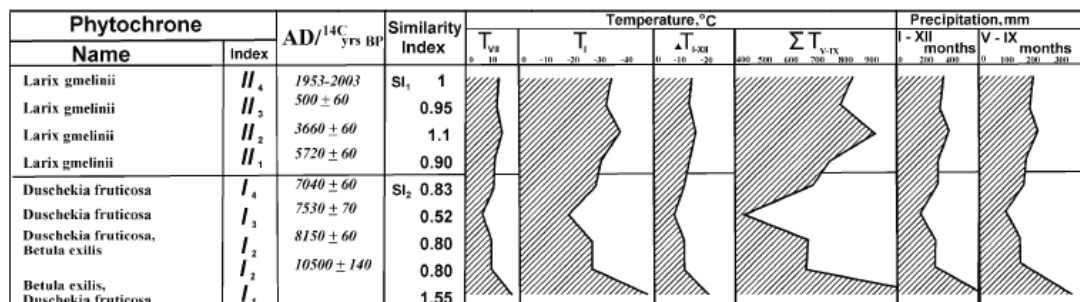
In digestive tract of herbivorous animals both contemporary and fossil pollen and spores of plants are proved practically neither to be digested nor destructed. This connection the study of food remains of fossil herbivores is one of the most valuable instruments in the investigation of the vegetation cover (flora and vegetation) and climate of the past, as well as of their spatial and time changes [7, 8].

A connection between the composition of fossil SPS and the composition of SPS of contemporary surface-

soil samples follows from the above-given key definition of pollen-spore spectrum. It is appears that this connection can be expressed by means of the criterion, which has been established by us and which is called the Similarity Index – SI (Ukraintseva, 2005; Valentina V. Ukraintseva and Nikita B. Kultin (2015).

This index helps to make a reliable correlation of fossil SPS on the zonal and on the phytocenoic levels. The possibility to express the connection, which exists between the components of the contemporary vegetation cover and the components of the vegetative cover of the past, and in consequence also the climate of the past in any of the studied regions, can be realized though the SI (Figure 2).

As it was shown by us, the Similarity indices Method works reliably on the level of the biological system.



**Figure 2:** Graphs illustrating of the character of warm and precipitation availability in the Fomich River basin during the last 10500 years or so, Taymyr Peninsula, Russia (Ukraintseva V., 2005; Valentina V. Ukraintseva and Nikita B. Kultin (2015)).

That is why it was a natural idea to try to implement this method to estimate solar activity manifesting itself in the number of sunspots and their groups on its surface and expressed in Wolf numbers. In order to calculate the Similarity indices we used the same formula as we did for SI calculation in biological system, namely;

$$X/Y = SI,$$

where:

X – number of the sunspots and their groups in Wolf max in any cycle and in any year of observation in the past;

Y – number of the sunspots and their groups in Wolf min in the cycle and in of the contemporary (present) observation which is equal to one – 1.

### SI IS THE SIMILARITY INDEX

Sun is the chief factor which formed of the vegetation cover, climates and all life on Earth [10, 11]. However to end of 20<sup>th</sup> century the astronomers could study only the Sun's surface. In 1995 NASA and European Cosmic Agency (ECA) sent of SOHO observatory in the space. Thus have been managed to find out that the Sun consist of 11 layers, including a gigantic nuclear fusion on its centre, which feeds the raging elements on its surface. There are the following layers : 1. Nucleus ; 2. Radiation zone; 3. Convection zone; 4. Photosphere; 5. Chromosphere ; 6) Heliosphere or solar corona; 7) Sunspots ; 8) Coronal holes; 9) Prominences ; 10) Differential rotations ; 11) Solar flare [9].

As well known Sun activity evaluated of the Sunspots. Professor Johan Rudolf Wolf was a Swiss astronomer and mathematician well known all over the world for his research of sunspots. The knowledge gained by Rudolf Wolf in the sphere of studying sunspots, their groups and cycles is fundamental for predicting climatic changes on the Earth [10, 11].

However, there is no still of the data about of the Sun activity for the 25 cycle of the Sun activity in which we all living in nowadays. This data will be entering from observatories yearly as before. And nevertheless the data for the 25 cycle has been done by Ukraintseva V., using of law of A. I. Ohl' [5]: "Two cycles of solar activity – even and odd (but not vice versa), form a physical unity" (10 - table 3.2.1; 11 - table 4.1). Thus, the law of astronomer – geophysicist of A. I. Ohl' is working. Forecast for 25<sup>th</sup> cycle of solar activity is evident of the fact that solar activity during five years of

this cycle, from the 2022 till 2026 years, will be high – 96.15 – 79, 95 Wm<sup>2</sup>. The climate on Earth will be sufficiently warm. The winters will be warm and snow. From 2027 till 2030 years the solar activity will considerably descend and will be equal only of 34.30 – 12.7 Wm<sup>2</sup>. The climate will be marked by cooling down during these last phases (years) of 25<sup>th</sup> cycle. The winters will be more the coldest. As it was shown by us (10,11), warm winters on planet Earth during the 2022 - 2023 years - time of the pandemic COVID -19 virus. In 2022 the staff of Medical Academy of Moscow, Russia created vaccine of 'Sputnik – V' to combat this insidious virus. Under license from Russia - Hungary and some other countries are already starting to manufacture the vaccine against of the COVID – 19 viruses. Recently on the TV of the Russia have been showed the film – the swelling of cancer cells of people get away using of device what have been done by of peoples. The 2 or 3 séance are needed for this universal operation without of the blood. This is the victory the Medicine and Engineering under of the cancer.

### CONCLUSIONS

1. Vegetation Cover of the planet Earth this is of the gold clue of information about of all life on planet Earth in past and nowadays and very important element indeed.

2. Pollen analysis method is indeed very important and useful method too.

3. Similarity Index (SI) is the universal Index actually. This Index is working on biological level on Earth and on the physical level of the Sun.

4. All Sciences are the best and important indeed as far as the data of all Sciences on the Earth are important and needed for practical works in the different spheres of human activity on the planet Earth.

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