S. Eva Nessenius

Part 1

Evolution and geological planet formation -

the biogenic origin of the early continents of the earth

Part 2

Findings from the living planet-embryo -

the morphological and genetic traces

I confirm that this is my own work presenting

the results of my own scientific research.

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Evolution and geological planet formation - *the biogenic origin of the early continents of the earth*

S. Eva Nessenius, Heidelberg, Germany, August 12 - 2012

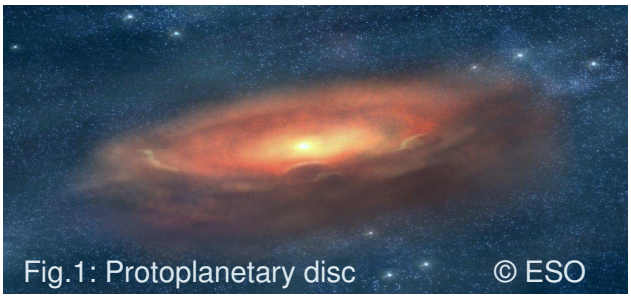
Abstract

These are the results of my comprehensive investigations about early evolution and biomineralisation as fundamental process in the formation of the early earth. Due to the fact that rocks significantly older than the earliest traces of living organisms on earth are very rare and to the latest astronomic findings of an abundance of water in protoplanetary discs the following new hypothesis about planet-formation and the formation of the earth and its early continents is introduced to the colleagues in geology and planetary sciences in order to use it as a working hypothesis. In case no contradictory observations are found, it might be proven as an innovative theory:

In the habitable zone of a protoplanetary disc aerosols and hydrous silicon are the starting basis for the origin of the Precambrian prebiotic and early cellular life in a global primordial soup. Many mineral substances are generated by biomineralisation. Photosynthesis causes the great rise in oxygen enhancing oxidation of dissolved minerals and metals falling out as insoluble substances. On the biogenic preliminary continents undersea reef-building organisms make them grow on. A higher radiation of the young sun since the Paleozoic transforms the early sediments into magma and metamorphic rocks. This paper includes a new explanation for the origin of the moon.

Hypothesis: In this hypothesis the forming-processes are arranged in seven stages:

Stage 1:
Origin of the young sun's protoplanetary disc containing silicium, hydrogen and the gaseous compounds – including water - from which in the Miller-Urey-Experiment amino acids form, as found in the Murchison Meteorite (SALYK, Colette and BLAKE, Geoffrey: Water Vapour Detected in Protoplanetary Discs. Caltech, Pasadena 2008; MEINERHENRICH, Uwe: Identification of diamino-acids in the Murchison Meteorite, PNAS U S A. 2004).



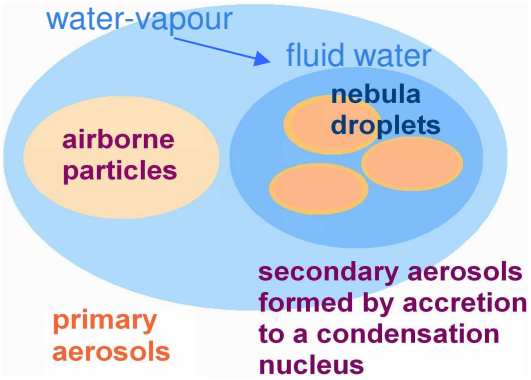


Fig. 1: Protoplanetary disc (artist's impression)
Fig. 2: Aerosols as starting basis for a hydrous accretion

In a sufficient distance from the young sun ionized gaseous mineral-compounds can connect to molecules. In the cold zone far away from the proto-sun water evaporates from ice. Icy aggregations envelop huge slowly rotating vortices of water vapour like

a skin generating a *habitable zone* in their interior where the water-vapour condenses to fluid water-droplets because the mineral compounds work as *aerosols enhancing condensation.* In some regions of these huge atmospheric globes the gravitational pressure becomes high enough to allow the existence of fluid water droplets. The icy mantle, the water-vapour and the fog are shielding the interior from ionizing radiation, inducing a greenhouse-effect. The warmth dilutes inner surfaces of the ice-skin while on the cold outer surface new icy aggregations build a new shielding skin. This way the atmospheric globes start growing. Primordial planet-embryos have an enormous volume due to their high content of gases, hydrocolloids and other light substances. Minerals and metals enrich these primordial soups in the chemical state of hydrous solutions. Silica gel is the basic material for the evolution of planet-embryos as matrix for amino-acids and proteins. In deep interior silica gel gets condensed by pressure and heat, delivering water, forming silica aerogel and liquid silicon-compounds.

At 160°-200°C carbon-monoxide and hydrogen can connect to methane and high aliphatic hydrocarbons like in the Fischer-Tropsch-Synthesis. Amino-acids, purines and pyrimidine – the basic elements for nucleic acids – can be generated catalysed by Ni, Fe, magnetite and *hydrous silicon*.

“Aerosol particles in the atmosphere have recently been found to contain a large number of chemical elements and a high content of organic material. The latter property is explicable by an inverted micelle model. The aerosol sizes with significant atmospheric lifetimes are the same as those of single-celled organisms, and they are predicted by the interplay of aerodynamic drag, surface tension, and gravity. We propose that large populations of such aerosols could have afforded an environment, by means of their ability to concentrate molecules in a wide variety of physical conditions, for key chemical transformations in the prebiotic world. We also suggest that aerosols could have been precursors to life, since it is generally agreed that the common ancestor of terrestrial life was a single-celled organism” (DOBSON, Christopher M.: Atmospheric aerosols as prebiotic chemical reactors. In: Proceedings of the National Academy of Science of the USA, June 12, 2000, page 11864-1868).

DOBSON’s statements are based on the assumption that the atmosphere originated after some hot planet-formation according to the theory of accretion. But his results are also applicable to a primordial atmosphere and a primordial soup in a habitable zone of a protoplanetary disc, because space-telescopes recently detected a plenty of water-vapour in protoplanetary discs.

“We present detections of numerous 10-20 μm H_2O emission lines from two protoplanetary disks around the T Tauri stars AS 205A and DR Tau, obtained using the InfraRed Spectrograph on the *Spitzer Space Telescope*. Follow-up 3-5 μm Keck NIRSPEC data confirm the presence of abundant water and spectrally resolve the lines. We also detect the P4.5 (2.934 μm) and P9.5 (3.179 μm) doublets of OH and $^{12}CO/^{13}CO$ $v = 1 \rightarrow 0$ emission in both sources. Line shapes and LTE models suggest that the emission from all three molecules originates between ~0.5 and 5 AU, and so will provide a new window for understanding the chemical environment during terrestrial planet formation. LTE models also imply significant columns of H_2O and OH in the inner disk atmospheres, suggesting physical transport of volatile ices either vertically or radially, while the significant radial extent of the emission stresses the importance of a more complete understanding of non-thermal excitation processes” (SALYK, Colette et al.: H_2O and OH Gas in the Terrestrial Planet-forming Zones of Protoplanetary Disks. In: The astrophysical journal letters, Volume 676, Number 1, April 2008).

Based on the new principle of combining the known facts, I suggest that the young planet embryos of Earth and Mars bear early stages of life very soon: Extremophile protobionta develop to Protocytes. Methanogen extremophile archaea produce various substrates for further biochemical reactions. Worldwide colonies of colloidal and then also cellular extremophile microorganisms are filling these primordial soups as growing global ecosystems providing a global gen-pool. So the planet-embryos can be considered as global living beings.

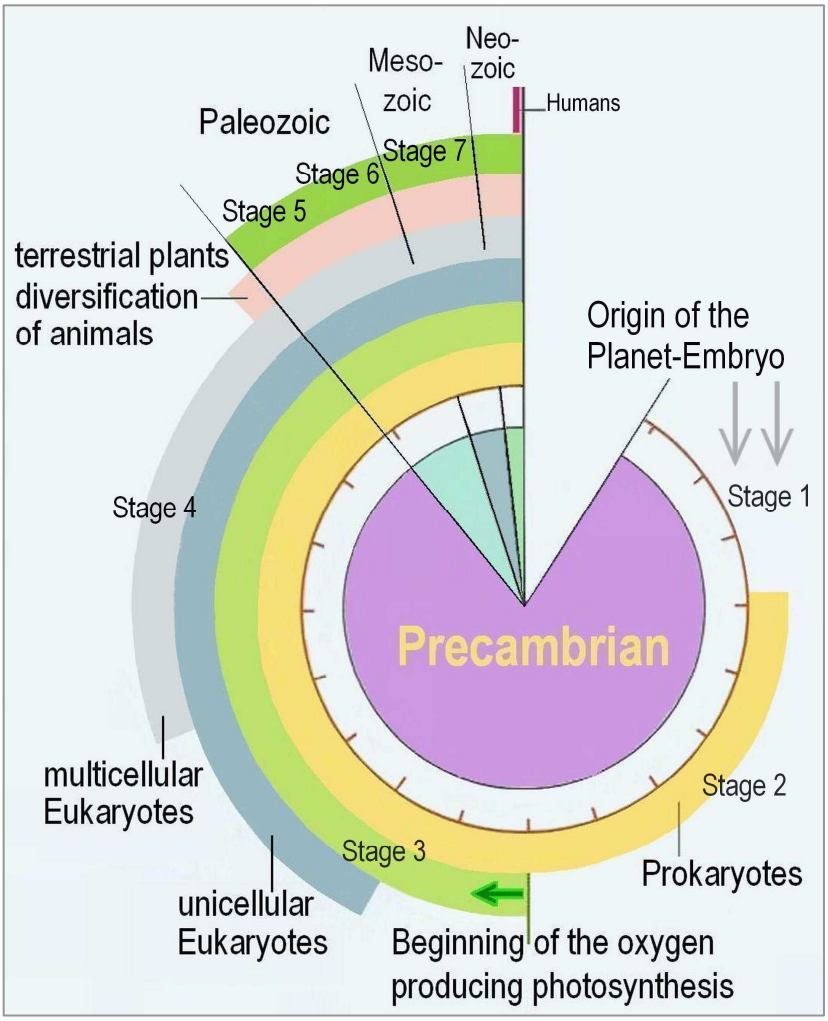


Fig. 3: Timescale of earth and biodiversification.

The Precambrian is the far longest time in earth-history. The Precambrian should not be considered as the geologic age after the planet's origin but as the age of the formation of the planet-embryo.

According to the findings of VALLEY et al. a cool early earth allows early prokaryote life very soon (VALLEY, John W., PECK, William H., KING, Elisabeth M., WILDE, Simon A.: A Cool Early Earth. In: Geology 30, 351 – 351, 2002).

Stage 2:

In early Precambrian colonies of extremophile archaea and bacteria start producing mineral-sediments. Some gain energy from sulfate-reduction in presence of carbon producing Pyrit and Markasit. Iron-bacteria oxidate dissolved Fe^2 into insoluble Fe^3 by anoxygenous photosynthesis. Diatoms accumulate silica. Many new materials are generated by *Biomineralisation* as an effect of chemosynthesis and anoxygenous photosynthesis in marine colonies of autotrophic prokaryote organisms.

"The abundance of silica as well as calcium and carbonate ions in the ancient marine environments … and the existence of chitin and collagen primary scaffolds in primitive biological form … led to the formation of unique biocomposites, possessing completely new qualities" (BRUNNER, Eike: Biological materials of marine origin. Springer-Verlag, 2010).

Stage 3:
Cyanobacteria produce calcium-carbonate. The photosynthesis of Cyanobacteria and Algae initiates the *great rise in oxygen* enhancing the oxidation of dissolved minerals and metals falling out as insoluble substance. Biogenic marine sediments form growing dense fractions in the global primordial soup. An abundance of oxygen also sets in motion the evolution of a rich marine eukaryote-fauna.

Stage 4:
On organically grown shapes of colloid preliminary phases of the earliest continents partially cemented by biomineralisation dwelling under water *reef-building organisms* as sponges and corals make them grow on. Other marine organisms descending from *stem-cells of the planet-embryo conserve the genetic information* for its entire spherical shape as a global organism in sleeping genes passing them on to their descendants all the way up the lines of animal evolution beginning in the Cambrian until the Neozoic. The gen-pool of all planet-embryo's stem-cells is the starting basis for the Cambrian radiation recombining the planet embryo's genetic information.

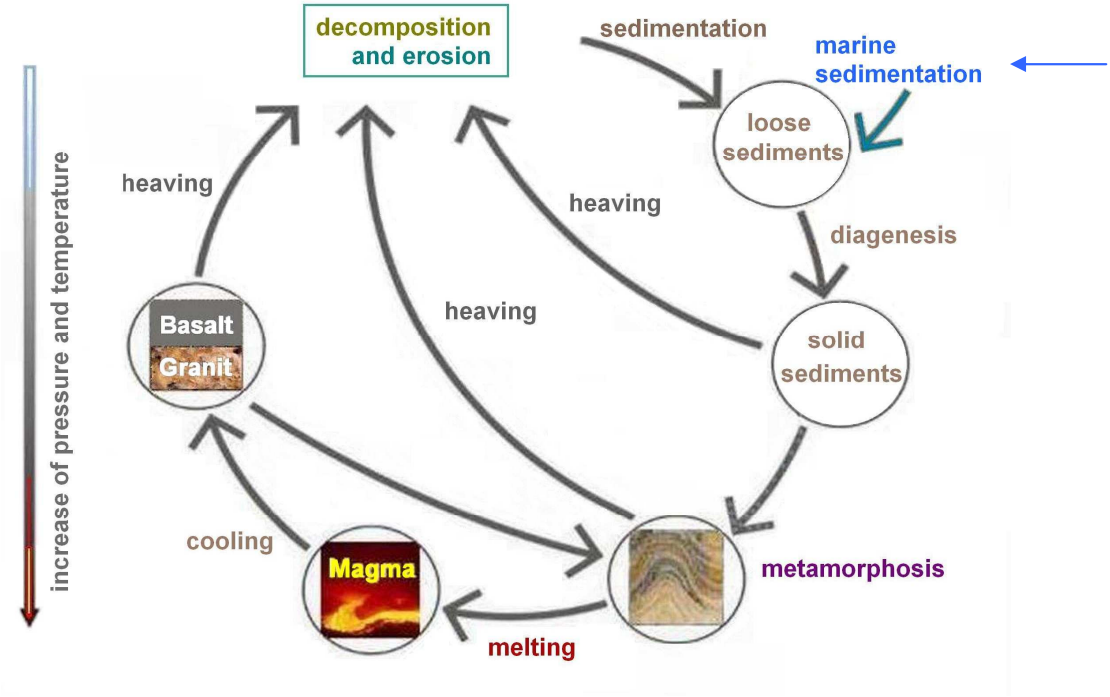


Fig. 4: The cycle of rocks begins with **marine biogenic sediments** as starting basis.

The early appearance of prokaryotes and the missing of rocks much older than the earliest traces of life imply some new scenario of planet formation (SCHIDLOWSKI, Manfred: Early Evolution of Life on Earth: Geological and Biogeochemical Evidence. In: ZGW, Berlin 37, 2009, 4–5: 237 – 260).

"No known rocks have survived from the first 500 million years of Earth history, but studies of single zircons suggest that some continental crust formed as early as 4.4 Ga, 160 m.y. after accretion of the Earth, and that surface temperatures were low enough for liquid water. Surface temperatures are inferred from high $d^{18}O$ values of zircons. The range of $d^{18}O$ values is constant throughout the Archean (4.4-2.6 Ga) suggesting uniformity of processes and conditions. The hypothesis of a Cool Early Earth suggests long intervals of relatively temperate surface conditions from 4.4 to 4.0 Ga that were conducive to liquid-water oceans and possibly life. Meteorite impacts during this period may have been less frequent than previously thought" (VALLEY, PECK, KING, WILDE: A Cool Early Earth. In: Geology 30, 2002).

So we may draw the conclusion, that the magma is a secondary product of following melting-processes in the geological hot phases in Paleozoic and Mesozoic. These hot phases of earth history are proven in Devonian, Permian, Late Triassic and Late Cretaceous. Global temperatures on the geologic time-scale show periodic changes between cold and hot climate. (BERNER, Ulrich, STREIF, Hansjörg: Klimafakten, 2001) There is a time-correlation between hot phases, flood-basalt events and mass extinctions (COURTILLOT / RENNE: Comptes Rendus Geoscience 335 (1) 2003, page 113-140). This can be interpreted as a result of cosmic climate changes depending from a *varying radiation of the young sun* having an effect on the planet-embryo's interior, as according to this hypothesis especially the Paleozoic earth does not have a cohesive isolating lithosphere yet, so that exogenous and endogenous factors can interact. In a hot phase in Devonian in Siberia some biogenic sediments in the earth's interior melt and convert into magma. Pressure from expanding gases causes locally limited eruptions and flood-basalt-events. However the large part of the earth-embryo remains watery and *permeable* also during Carboniferous. The pre-stages of the early continents continue growing by organic processes.

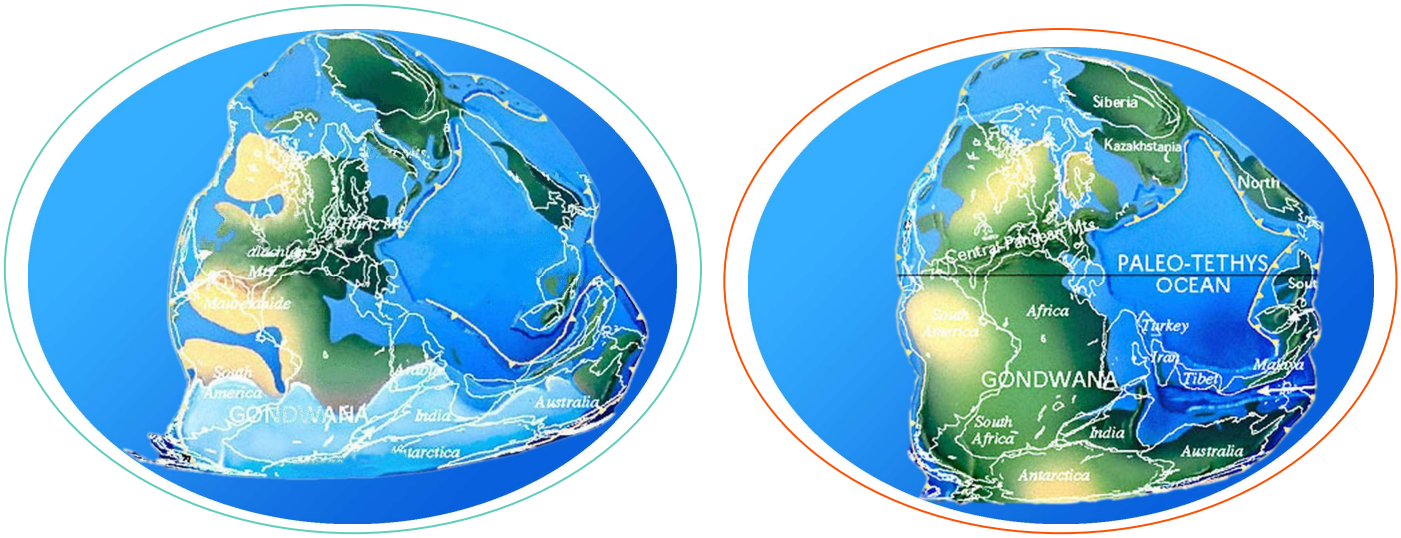


Fig. 5 and 6: Paleomap Scotese (2003): Late Carboniferous (left) and Permian (right)

Stage 5:

Carboniferous: The early continents in their organic shapes are still partially under water. Since Cambrian more and more surfaces arise above sea-level. The Paleo-Tethys is the only deep Ocean. The southern parts of Gondwana are frozen in a cold phase in the Late Carboniferous. Plants have conquered all marshy grounds and landmasses. Photosynthesis makes the atmospheric oxygen rise to its maximum in earth-history: 30%. Because of a high oxygen-availability insects grow big. Evolution of plants and animals is booming. The earth-rotation is slow as the planet-embryo still contains lots of water, less dense rock-materials and therefore has more volume.

Stage 6

Permian is an extremely hot phase. Most of the waters from seas and swamp lands evaporate. More landmasses get exposed to the sun. The lithosphere dries out and hardens. New lithosphere-crusts hinder the release of heat *from the interior* causing an increase of pressure. *Nuclear chain-reactions boost the heating by self-excitation*. Sediments melt to Magma with a decrease of volume or become metamorphic rocks. Mercury, Venus and Mars are affected as well with various results due to different distances from the sun. Mars loses its atmosphere and most of its water-supplies.

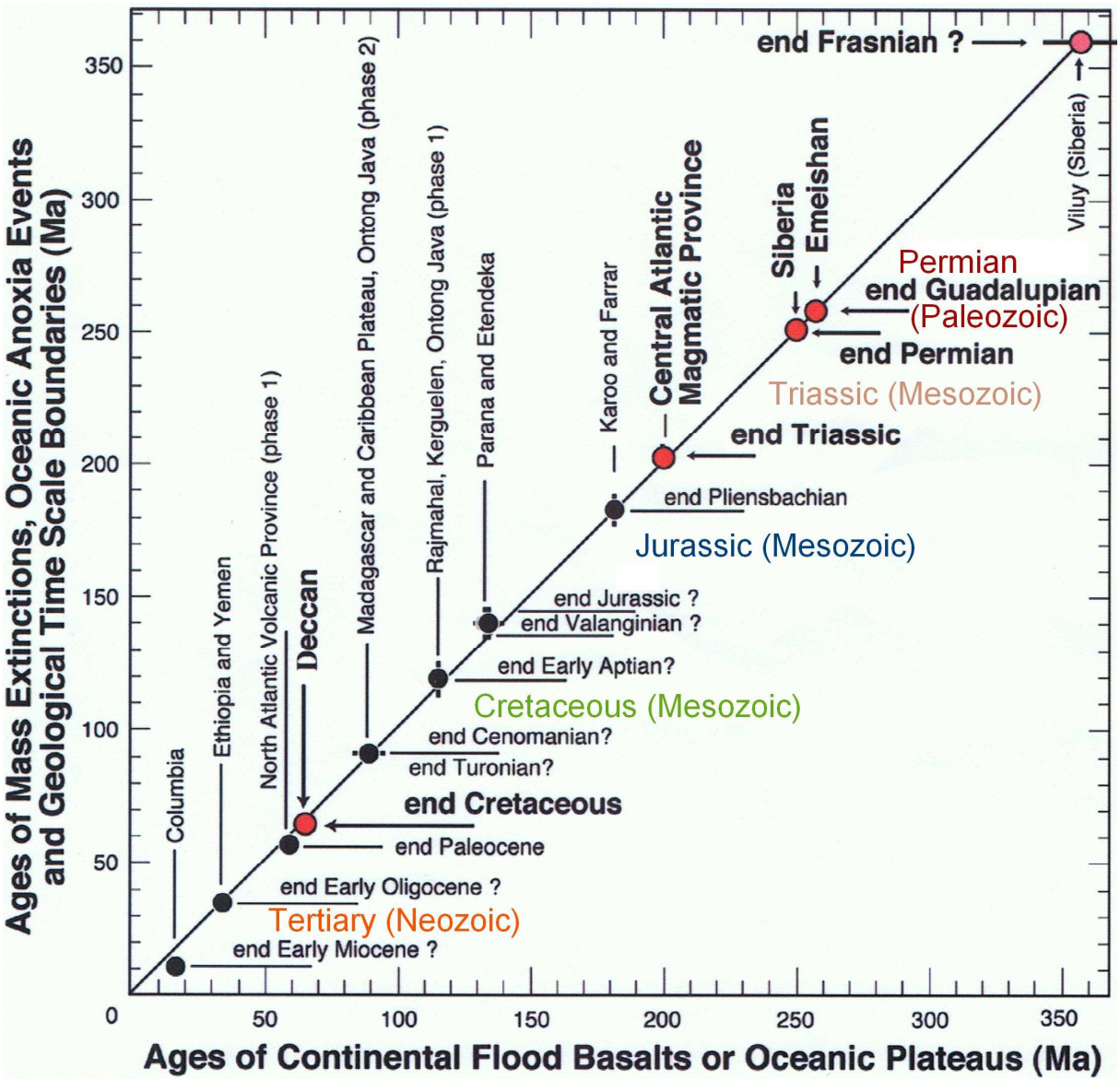
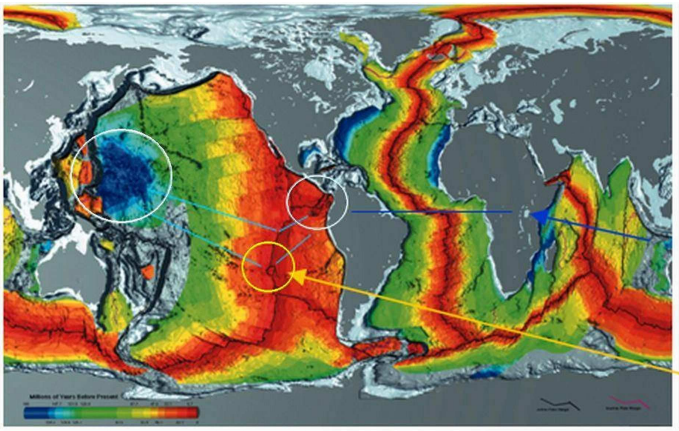


Fig. 7: Time-correlations of mass-extinctions and flood-basalt-events.
Graphic: COURTILLOT / RENNE: Comptes Rendus Geoscience 335(1) 2003.

Does the time-interval between two hot phases correlate with one orbit of the sun around the galactic centre? Can the radiation increase, when the sun approaches the periapsis to the galactic centre or are there or other astronomic reasons for a periodic heating? The numbers of years in geological time-scales are hypothetical and can be rendered more precisely, when these questions are answered. The maxima of the global-temperatures show a time-correlation with big flood-basalt-events. Exogenous and endogenous factors interact in the hot phases. Very interesting findings indicate a cool origin of earth and moon: The oldest mineral on earth and moon is Zircon. “Studies of single zircons suggest … that surface temperatures were low enough for liquid water” (VALLEY et al. 2002). In the Paleozoic the moon is still inside of the earth. ***The material of the moon originates inside the earth and therefore has the same age***. In the hot phase in Permian sediments transform into magma. The loss of volume accelerates the planet’s rotation. The centrifugal forces have their maximum effect at the equator. The prospective moon-material in the interior has a slightly different density. Therefore it gets out of balance and moves to the earth-surface. Along the edges of organically grown shapes the dried out lithosphere gets torn apart. The moon emerges, causing a release of pressure in the earth-mantle.

Pressure-reduction turns de-densified masses in the lower earth-mantle into plumes rising along the new fissures. At the earth's surface the sea-floor-spreading begins in young Rift Valleys. Pacific and Atlantic ocean-floors start expanding simultaneously. The torn apart elements of the former Pangaea move in opposite directions to both sides of the north-south-aligned mid-ocean-ridges. Before this an east-west-aligned mid-ocean-ridge makes South-America and Africa move southwards broadening the Central Atlantic Ocean. The moon-opening (Fig. 8) moves southwards. Therefore the still active ridge-crossing is located under the Easter Islands today. In a following cold phase the expansion slows down, but convection-currents keep driving the sea-floor-spreading. On the opposite edges of the heavy ocean-floor-plates excess material gets pushed under the lighter continental plates. The following hot phase enhances the expansion again. The next cold phase slows it down again and so on.



Jurassic (oldest ocean-floor) Cretaceous (middle) Tertiary (young)

Fig. 8: Geological ages of origin of the ocean floors.

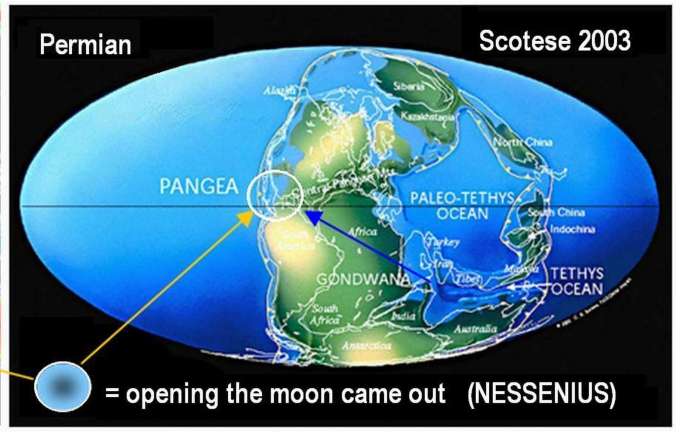


Fig. 9: Emerging of the moon.

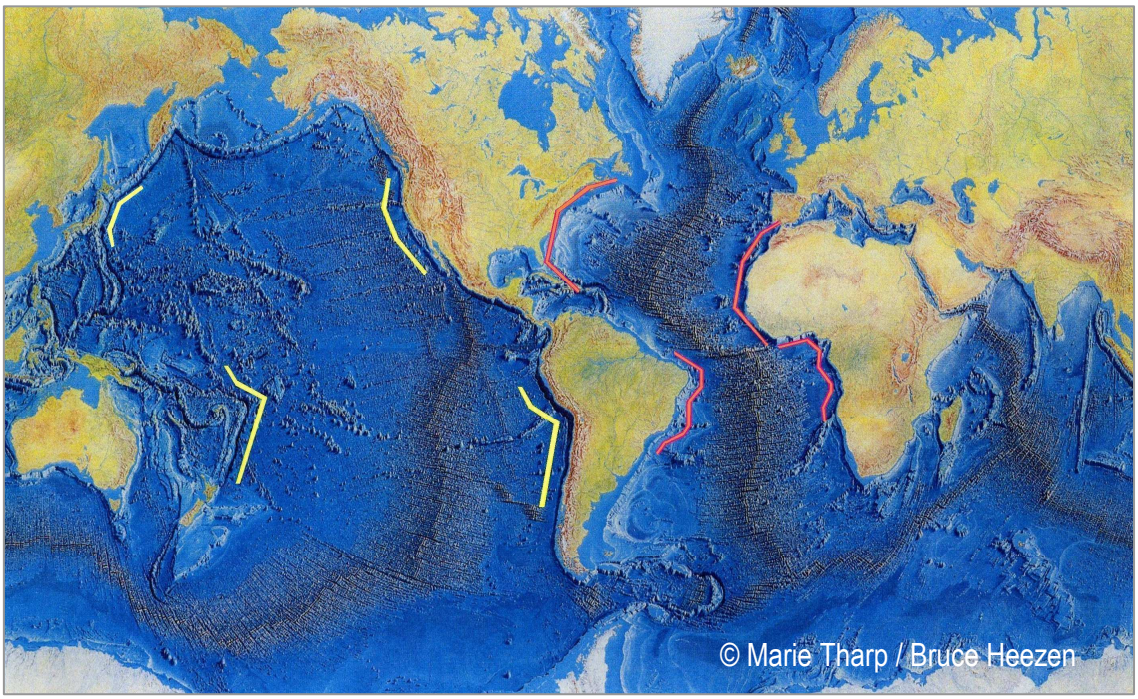


Fig. 10: World Ocean Floors in the Holocene (latest time of Neozoic). Before Permian the coast-lines (red and yellow) were located together as one not yet hardened but cohesive earth-surface.

Geologic dating proves that Pacific and Atlantic ocean-floors formed simultaneously. The oldest region is the “old hole” close to the Mariana-Trench. It is a proven fact that east of the east-pacific-rise large parts of the Cocos-, Nazca- and Juan de Fuca plate submerged under America, therefore in the East-Pacific all the Cretaceous and Jurassic ocean-floors are missing. This has the following reason: Before the Pacific ocean-floor originates, the west coasts of North- and South-America lie together with the Asian east coast and the Tonga plate. The “old hole” is still located in the middle. After the emersion of the moon in Permian the newly formed basalt-ocean-floors are driven by sea-floor-spreading symmetrically in two opposite directions. The eastern parts of the oldest ocean-floors disappear under America filling vacated space left by the moon. At Mariana- and Tonga-Trench less material submerges, because the moon came from the east going westwards, due to the inertia of its mass when the eastward earth rotation was accelerated. The Jurassic Atlantic ocean-floor between West-Africa and the Caribbean was the young Central Atlantic Ocean. This is a trace of the moons pathway under the surface of Pangaea moving westwards along the equator closely under the surface and breaking it open before its complete emerging.

Fig. 11: The Earth in Jurassic: The former pathway of the moon is visible

Fig. 12: The Moon in the Holocene

Stage 7:
In a following period of turbulence the new continents start drifting apart. In Mesozoic there are two more hot phases with cool periods in between. In the hot phases with new expansion-impulses and flood-basalt-events a heaving of the ocean-floors at the mid-ocean-ridges causes several Mesozoic sea-transgressions (Triassic-, Jurassic-, and Cretaceous-sea).

After the emerging of the moon, the former living planet-embryo becomes a dead geophysical orb and so does the moon also affected by the extreme heat in Permian. The lithosphere gets bake by interior magma-heat and becomes dead material, still filled with microorganisms but not consisting of them any more. The organically grown shapes of the continents are now modified by plate tectonics and t*he plates expand by sea-floor-spreading*. Although subduction is happening the Pacific-ocean never becomes smaller, because the east-pacific-rise has the highest dilatation-rate of all mid-ocean-ridges on earth even in a cool phase like Pleistocene and Holocene.

For the moon, because of the accelerated earth-rotation, the centrifugal forces were stronger than earth's gravity-field. The released motion of the moon slows down, but with increasing altitude the earth-gravity diminishes. As the radius of the moon's orbit increases, the rotation of the earth-moon-system slows down. Moon's orbit becomes independent from the earth-rotation. As the moon stays connected in the moon-earth-system, it is always visible it from the same side. Earth-rotation gets retarded by the moon but also as consequence of nuclear reactions in the earth's interior causing an increasing volume, because the moment of inertia increases with an extended radius.

Summary 1

This hypothesis solves many problems, such as the question how mineral-elements in protoplanetary discs can stick together and form globes with diameters of many thousand kilometres. They are aerosol-compounds getting dissolved in condensing water as hydrocolloids becoming metabolites for the development of Protobionta, archaea- and bacteria-colonies in a global living organism, the Precambrian planet-embryo, held together by hydrous silicon as matrix for proteins. Water-clouds in interior habitable zones protect the early life-processes from the weak radiation of the young sun. In case details need to be improved, it still remains a crucial innovation enhancing the progress in scientific research about planet formation.

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Recent findings from the living planet-embryo – *the morphological and genetic traces*

S. Eva Nessenius, Heidelberg, Germany, August 15, 2012

Abstract

In Precambrian the earth was not only a planet-embryo in the astronomical sense but also in the biological sense of this term. Due to its cool origin (VALLEY et al. 2002) and the very early beginning of life based on aerosols, hydrocolloids and especially hydrous silicon, one can consider this planet-embryo as a global living being.

There are geomorphologic relicts of huge size on one hand and genetic-morphologic relicts in highly developed organisms on the other hand, to which genetic information has been passed on in sleeping genes all the way up the line of animal evolution beginning in the Cambrian until the Neozoic and present geological age: Holocene.

Comparing both many correspondences can be seen. They can be explained on a natural-scientific basis, but the character of these explanations is so hypothetical, that I do not expect a common acceptance of the following considerations. However they are presented to all the colleagues in geology and planetary sciences now in 2012 to make them available for those, who find it interesting.

Introduction

The following comparisons can only be understood with a complete comprehension of the theory of biogenic formation of the early continents in part 1 of this publication.

The early continents have organically grown shapes and they died in the hot phases in Devonian, Permian, at the end of Triassic and end of Cretaceous. Since Permian, mere geophysical processes led to a further dilatation known as sea-floor-spreading.

Before, in Precambrian, the global ecosystem can be considered as global organism, because many of the early Prokaryotes are able to perform a horizontal gen-transfer. All the genetic information from the whole gen-pool can be combined and collected in certain types of cells, which I call stem-cells of the planet-embryo. Endosymbiosis was important generating Eukaryotes with a cell-nucleus that can conserve huge amounts of DNA. Only a small part of the DNA is getting used in the lifetime of one organism. The rest of it lies on the introns or never gets expressed for other reasons. So the entire genome of one animal is more or less a museum of ancient qualities we never see on the phenotypus. They can be reactivated appearing as atavism but also in the course of evolutionary higher development.

The technical term “biological species” is defined as the entirety of individuals able to have common descendants. As the worldwide colonies of unicellular microorganisms can exchange and collect genetic information, the planet-embryo is identical with the hypothetical common ancestor of all living beings. In most biological organisms every cell contains the complete genome for a whole individual.

So there can have been cells in the planet-embryo containing information to build the shape of an embryonic head. In part 1 of this publication every statement can be proven. Here in part 2 there are some interesting findings with provable explanations in combination with non-provable speculations.

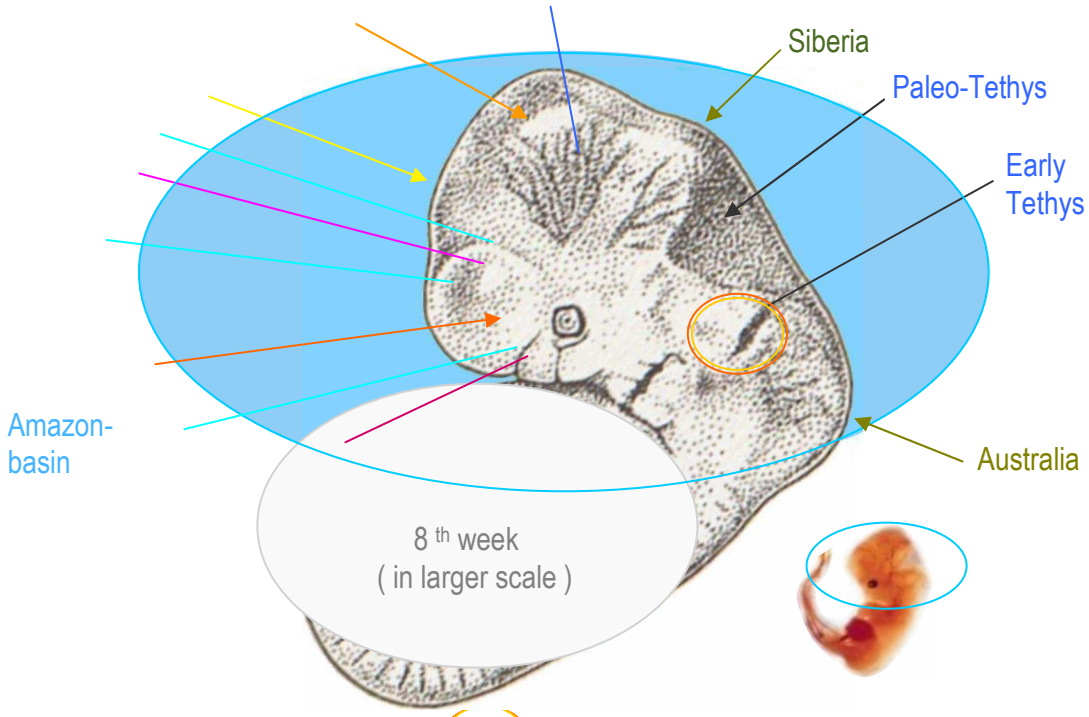
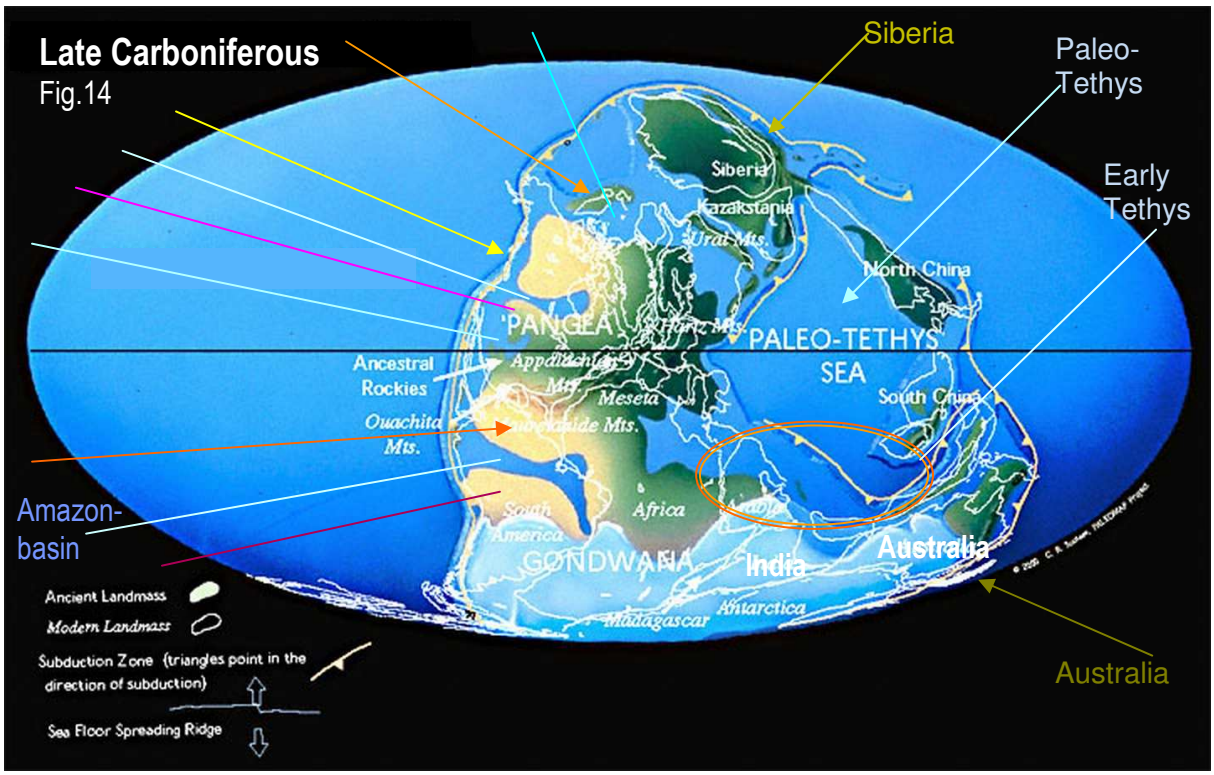


Fig.13: Human embryo in the 8th week. = underneath was the blastopore lip = early Tethys
Torso and limbs are not ought to be regarded here, but only the tissues belonging to the head.
The same color of arrows on the pictures above and below means morphological correlation.



Findings

Comparing the Paleomap with the embryonic stages of the human cranium, one can find morphological correspondences, implicating a genetic inherence of the shapes. Similarities can even be seen in the sequence of the embryonic development stages. This amazing phenomenon is worth being considered as another way to realize, that the Precambrian earth can have been a living being. What you see on the Paleomap is only the geologic cast of the former living being.

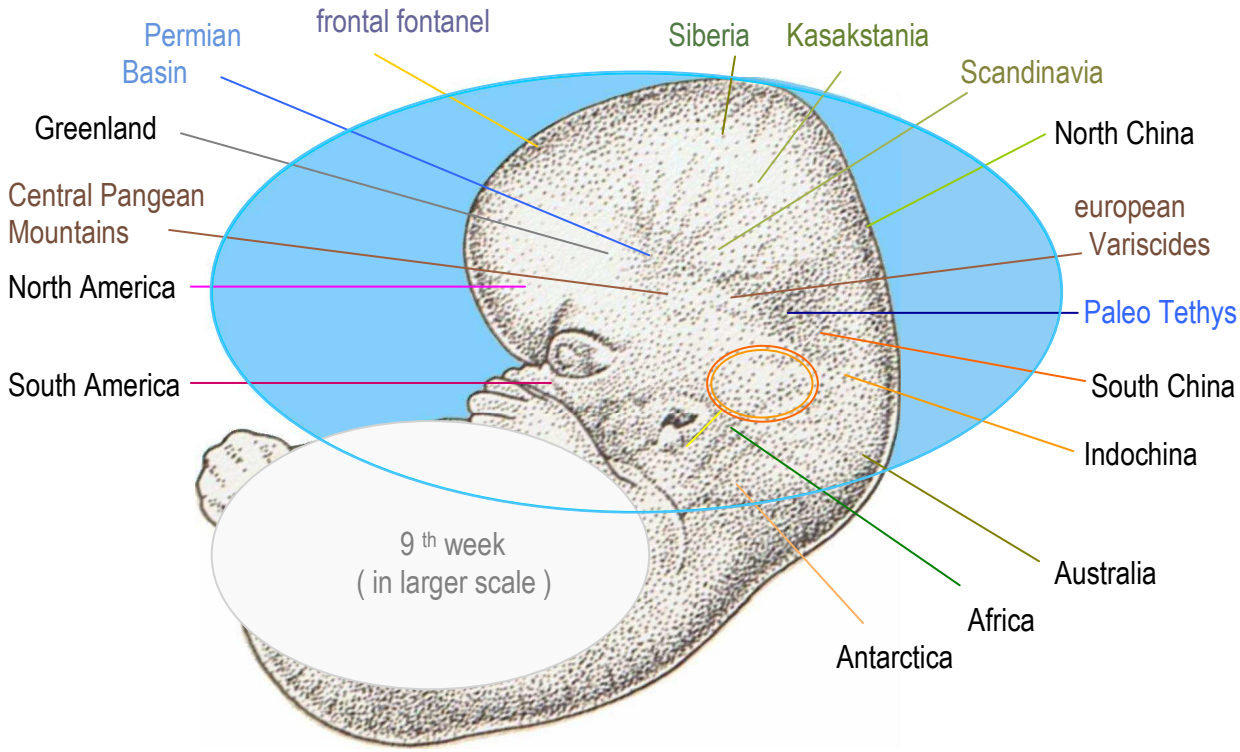
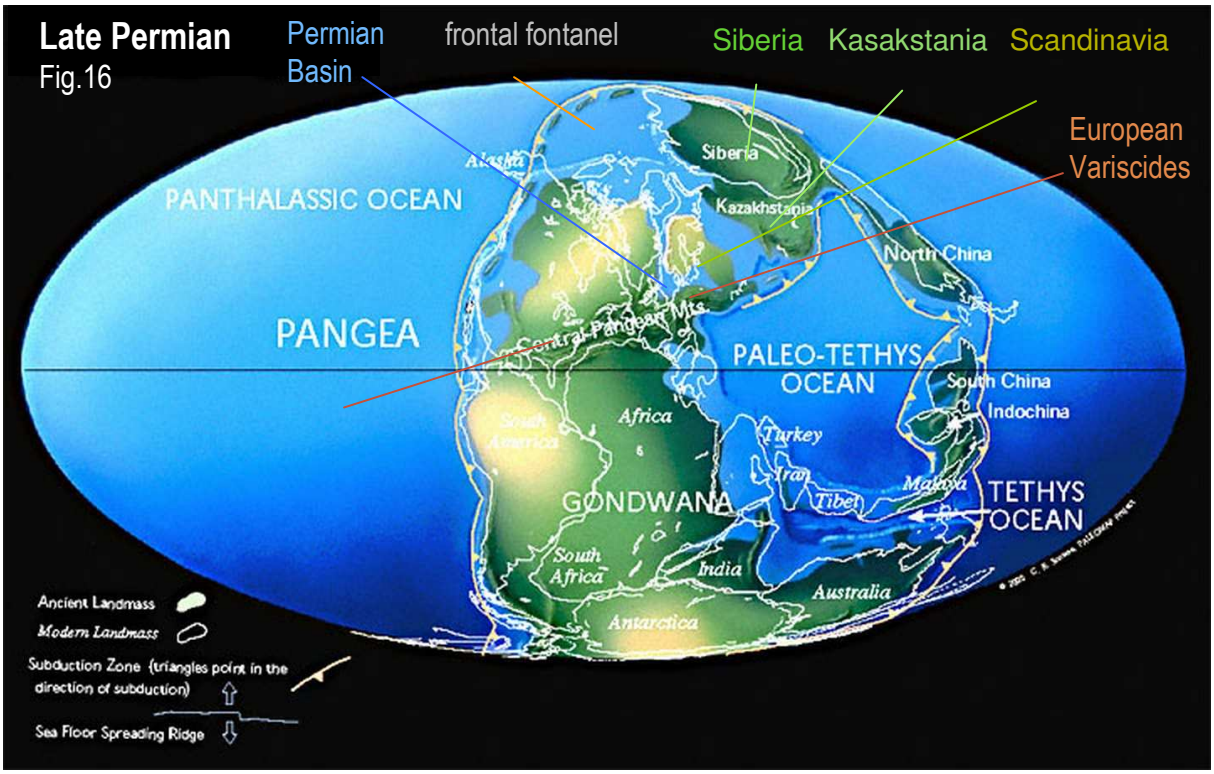
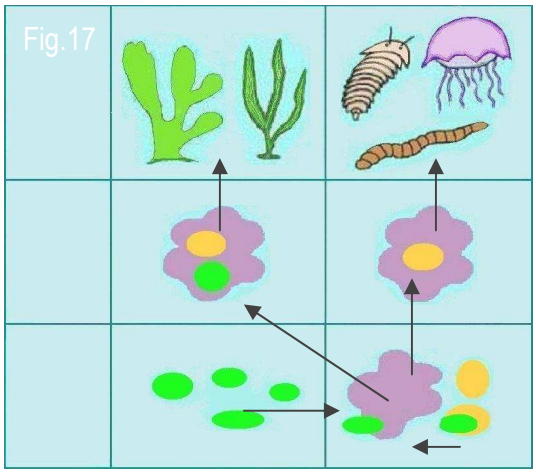


Fig.15: Human embryo 9th week = in here underneath once was the blastoporc lip = Tethys.
The torso and limbs are not ought to be regarded here, but only the tissues belonging to the head.



Panthalassic Ocean never existed. SCOTESE did *not* say this, but his way to paint borders of early continents allows this interpretation. The Pacific opened in Permian after the emerging of the moon. In the construction of Bilateria limbs and neurologic organs are paired. At the vertebrate-cranium continent-shapes are double like every part of the skeleton and nervous system. In the early Precambrian, when the planet-embryo grew, evolution was on a stage where there were no symmetrical organs yet.

Biologists look for reasons for the rapid animal evolution in Cambrian. The Cambrian radiation, also called Cambrian explosion, can be interpreted as consequence of the existence of genetically rich stem-cells coming from a differentiated global ecosystem identical with the watery organism of the planet-embryo. Its gen-pool and its multitude of different stem-cells was the starting-basis for the Cambrian radiation and therefore many new animal-phyla could originate simultaneously in such a short time.



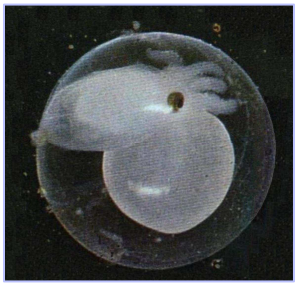
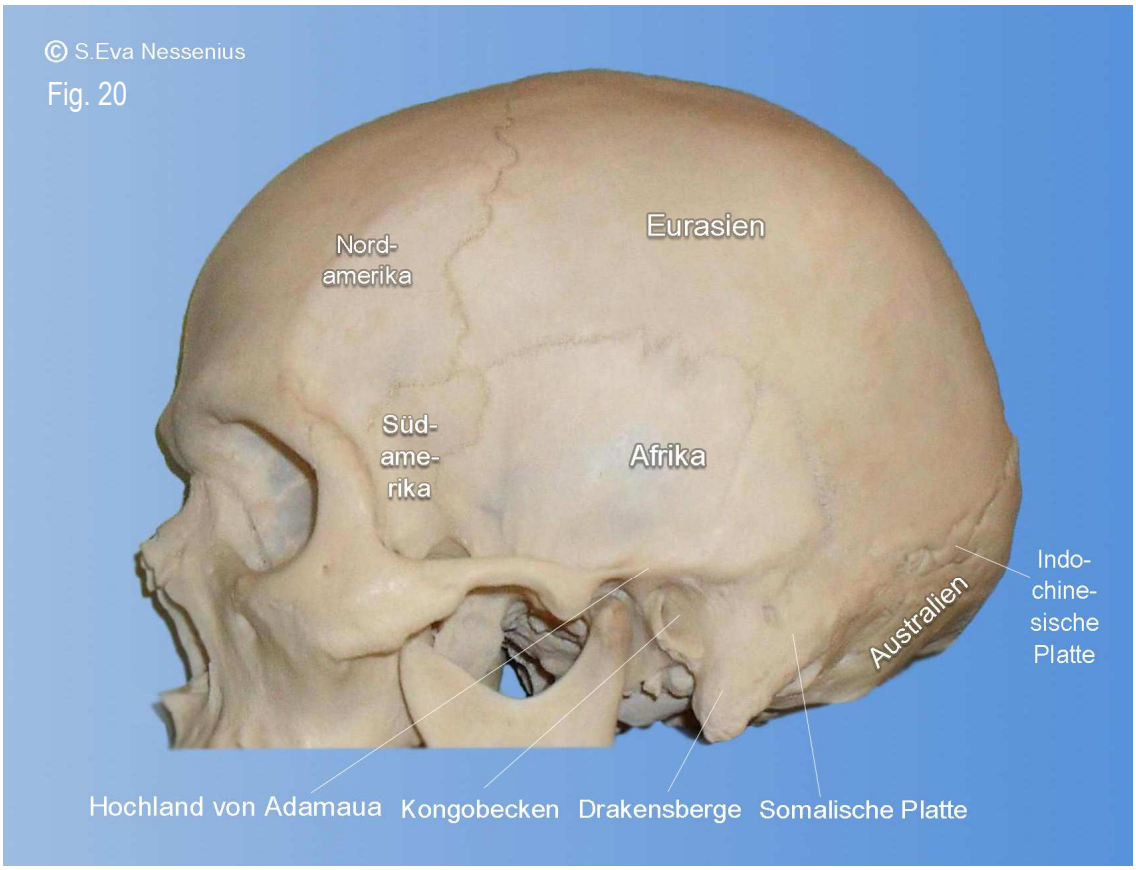


Fig.18.: Cephalopod-embryo. Cephalopods already have highly developed eyes.

Endosymbiosis and forming of the heads are important processes recombining the planet embryo's genetic information. Jellyfish develop all organs in their head.

A very long evolutionary development had to be performed before such a cranium as the human one could come into existence. But even on world-maps of the Holocene cognation it still visible. It can be seen best on the maps of Paleozoic and Mesozoic before the continental drift tore apart the organically grown early continents.



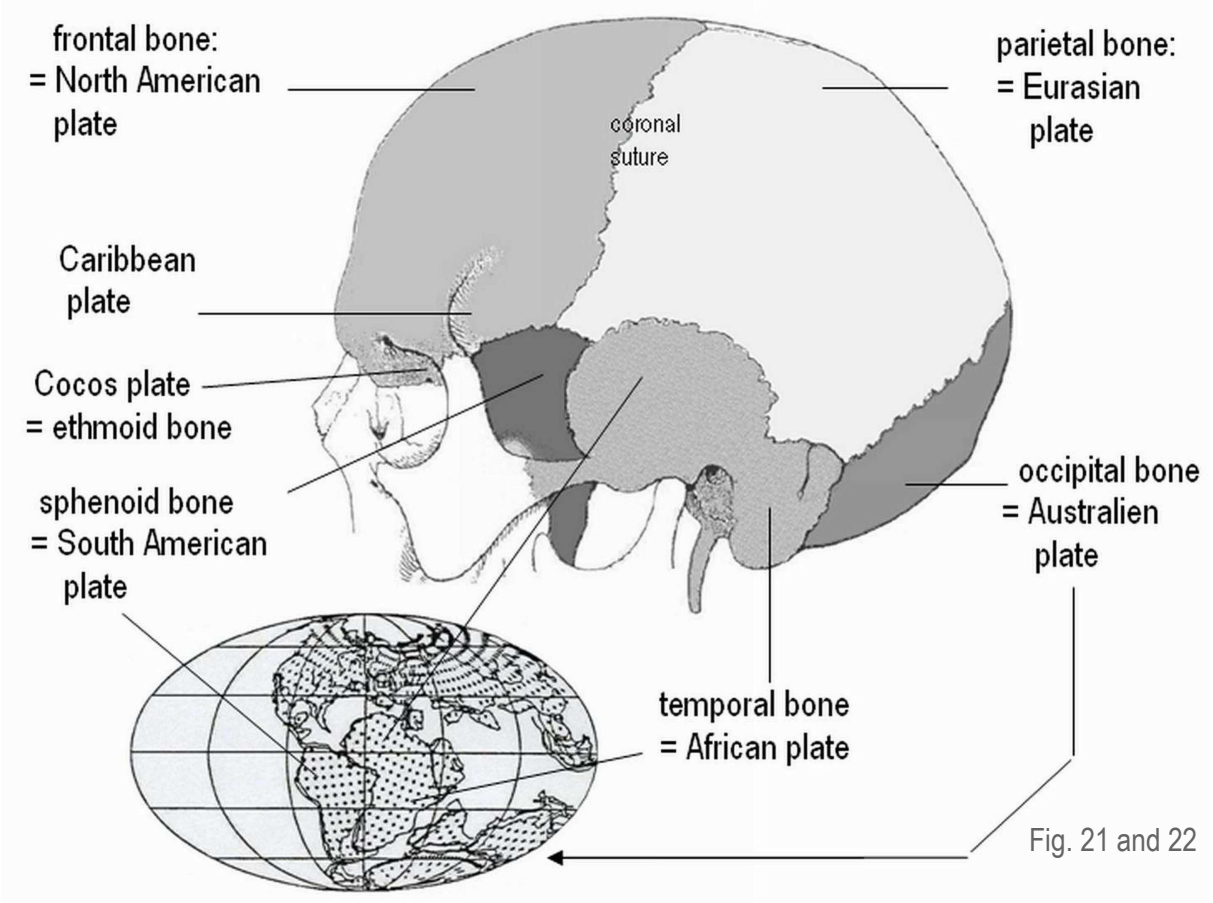


Fig. 21 and 22

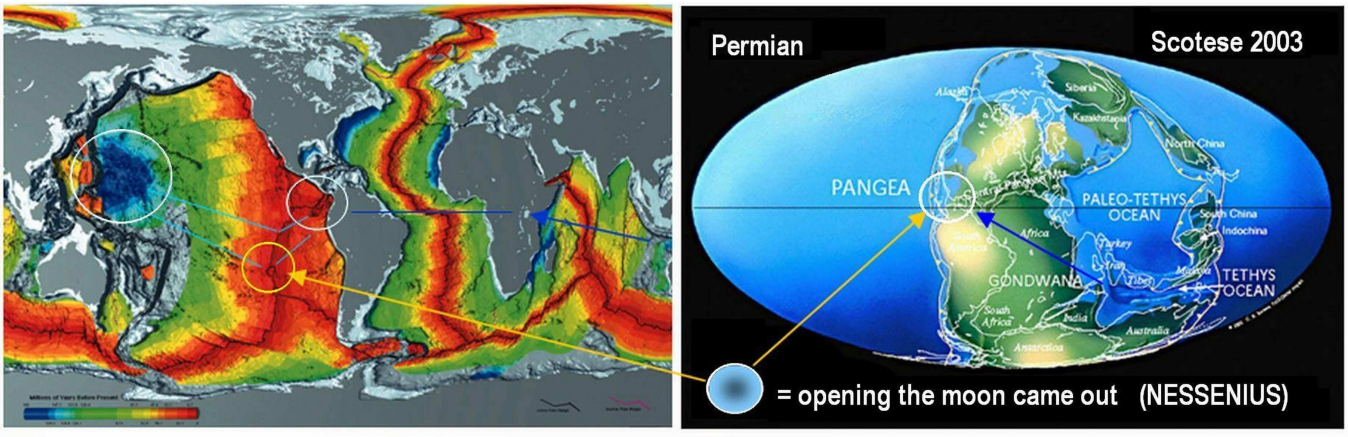


Fig. 8 and 9

The tissue where the vertebrate-embryo develops the eye first lying under the skin is in exact correspondence to the region on the earth where the moon originated and emerged in Permian visible on the Paleomap and on images of the human embryo in the 8th and 9th week.

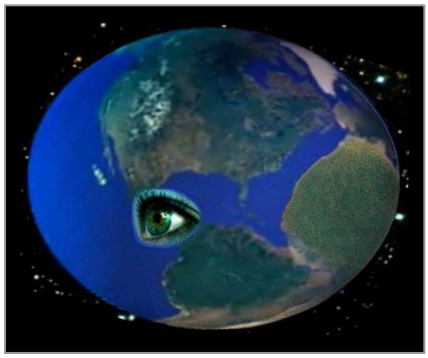


Fig. 23: Collage from an artist:
The earth in Jurassic with an eye at the space the moon came out.

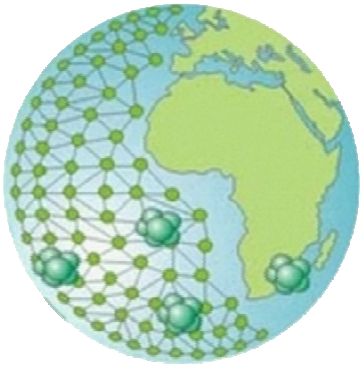
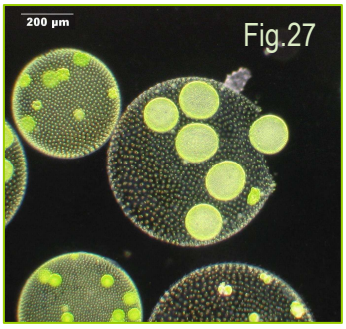


Fig. 24: Earth as Volvox

Fig. 25: Beautiful Volvox aurea

Fig. 26: Periophthalmus



Volvox and Periophthalmus are used as symbols for earth-formation and origin of the moon. Volvox aurea and Volvox globator are rotating spherical colonies of eukaryote algae on the ancient evolutionary stage of flagellates connected with jelly, filled with water and bearing daughter-colonies growing inside. When the daughter-colonies are mature the mother-colony opens, the descendants come out and leave. After the opening the mother-colony dies, like the planet-embryo of the earth died after the emerging of the moon.

Periophthalmus is an animal half fish half frog performing the transition from aquatic to terrestrial life in the Neozoic. This is a repetition of the same transition the fishes performed in Devonian and Carboniferous becoming amphibians and then reptiles. In Permian there was a dramatic change of life conditions. The global temperature was 24°C. Many lakes dried out. Oceans were polluted by mud from anoxia events. Many species not successful in transition to terrestrial life died out. Periophthalmus makes this transition today, and its eyes are almost coming out of its head, which remembers me to the moon coming out of the earth in Permian. On a superficial level these phenomena can be regarded as analogies. Going deeper into the matter of the genetic inherence of animals from the planet-embryo one can also recognize some kind of homology in these morphologic developments. For an animal like this looking over the water surface certainly is an evolutionary advantage, but why could the species realize this character? Because it had the sleeping genes prepared from his ancestral being, the Precambrian planet-embryo, in its genome.

Discussion 1

Although there certainly *is* evidence on the level of macroscopic sight, the coherence can not be proven by experimental repetition. It is impossible to find fossils of these stem-cells, because in the hot phases of the earth-history most of the sediments got melted and converted to magma or metamorphic rocks and the traces got destroyed.

The Edicara-Fauna in Australia is precious because it is exceptional to find animals of that age, but the question if they contained the specific sleeping genes or if others did, cannot be answered, because it can not be recapitulated any more. Most of the ancestral beings have died out and it is most unlikely that we find fossils with a DNA evaluable for this purpose.

The only trace is the vertebral cranium in its high stage of evolutionary development in the human being. The other vertebrate craniums consist of the same elements in reduced variations. The craniums of vertebrate embryos still have the spherical forms and they loose it during the differentiation for their specialisations in the later stages. It is an important point of recognition, that in the animal-ontogenesis sometimes progressive evolutionary developments go backwards again, as the specialisations are very often results of reductions. So the seemingly highest developed character in evolution, the spherical human cranium, is a primordial embryonic form.

Discussion 2

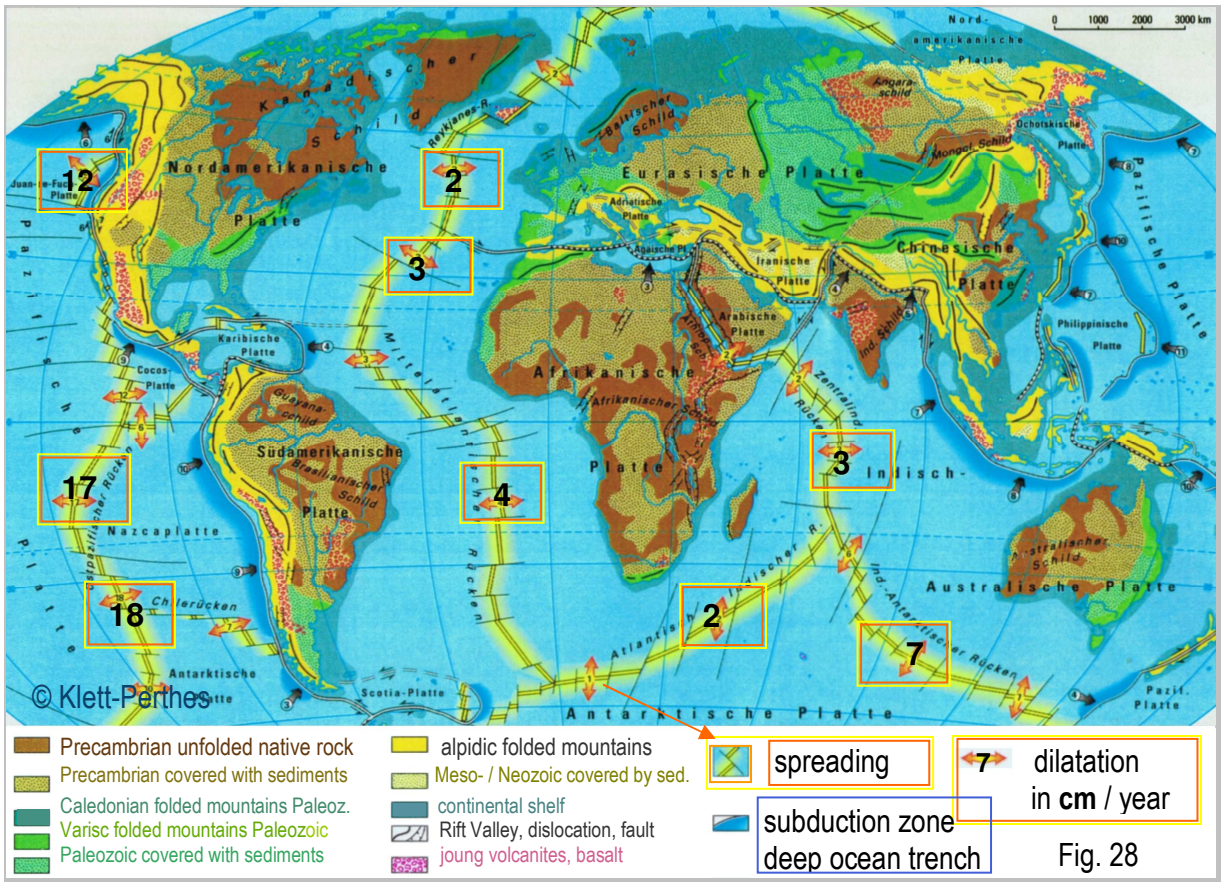


Fig. 28

Discussions about earth expansion were not successful, because the expansionists denied the proven process of subduction. Ignoring this fundamental finding of the modern geosciences they put themselves in an unacceptable position. Their second problem is that they are not in agreement with each other about the question, if an expanding earth is gaining mass or not. Those who say, it would be gaining mass, have difficulties in giving a reason. Those who say, it would not gain mass, have the problem that a smaller earth with an equal mass must have had strong gravity forces not allowing big terrestrial animals to live there.

This problem can be solved by the hypothesis of biogenic planet-formation, because an early earth consisting mainly of hydrocolloids, colonies of marine microorganisms, biogenic sediments, biofilms and the products of biomineralisation cannot be small. It must be voluminous. When the radiation of the young sun increases like in Permian, water evaporates from the young watery lithosphere because of heat and is driven out by pressure in the interior. The volume of the earthly substance shrinks, as the water goes up as water-vapour into the atmosphere. When biomass is burned, only the ashes are left over. Heated mineral-substance turns into magma, while the dried out lithosphere forms an isolating crust. The more concentrated masses in the interior are under pressure. Where a local release of pressure initiates the origin of plumes, the volume expands without increase of mass. Plumes are not only the reason for the hot-spot volcanism. As there are very long fissure-volcanoes at the Rift-Valleys there must be very long fissure-plumes as well.

In Permian 98% of all plants and animal species died out under catastrophic life-conditions. The earth-density was temporarily very high and the volume decreased, so that the rotation accelerated. Before Permian, in Carboniferous, the density was low due to a high water-content. In Permian it became relatively high. After Permian, in Triassic, it decreased again due to the pumping up by plumes, as the nuclear chain reactions in the interior continued producing heat. After the emerging of the moon the Rift Valleys were torn open by convection-currents again and again. Each time the release of pressure caused new plumes going up, the driving forces of expansion.

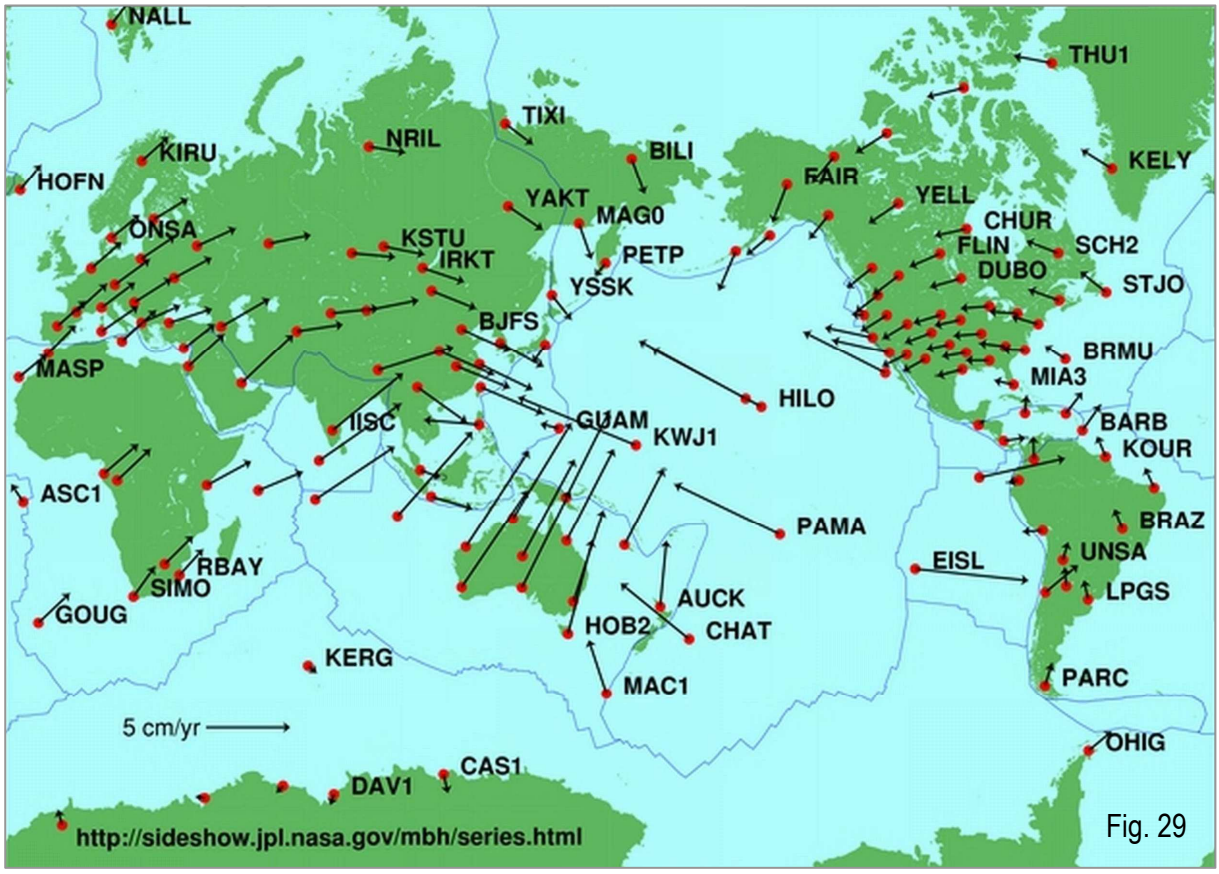
“The dual geospheres view brings the importance of hydrogen into focus. If the earth primordially was entirely dominated by hydrogen, the gradual escape of hydrogen to space would have led to the oxidized carapace (crust; lithosphere) …, while leaving the interior still hydrogen-dominated. … To understand why hydrogen is so important, one must know that hydrogen nucleii (without electrons) under mantle-depth pressures are able to penetrate metal atoms and thus transmute and densify them. Pressure reduction leads to escape of hydrogen and de-densification. … Density changes with consequential volume changes at sub-crustal levels can be set in motion by…” (HUNT, Ch. W.: Dual geospheres of the expanding hydric earth. 2008).

Although other geoscientists can not agree with every statement of HUNT (2008) because denying subduction is not acceptable, other investigation results are worth being taken notice of, as they are relevant for astrophysics and planetary science.

Some expansionists are researching to find explanations for an increase of mass. However it is unnecessary to decide, how the volume of the earth-mantle increased. The geological ages of the ocean-floors and the directions and velocities of the plate movement leave no doubt about expansion as a factum.

The Austrian geologist AMPHERER had suggested the origin of the moon as cause for the continental-drift discovered by WEGENER. They both could not complete their investigations, because the ages of the ocean-floors were still unknown and therefore the opening, where the moon came out, could not be localised.

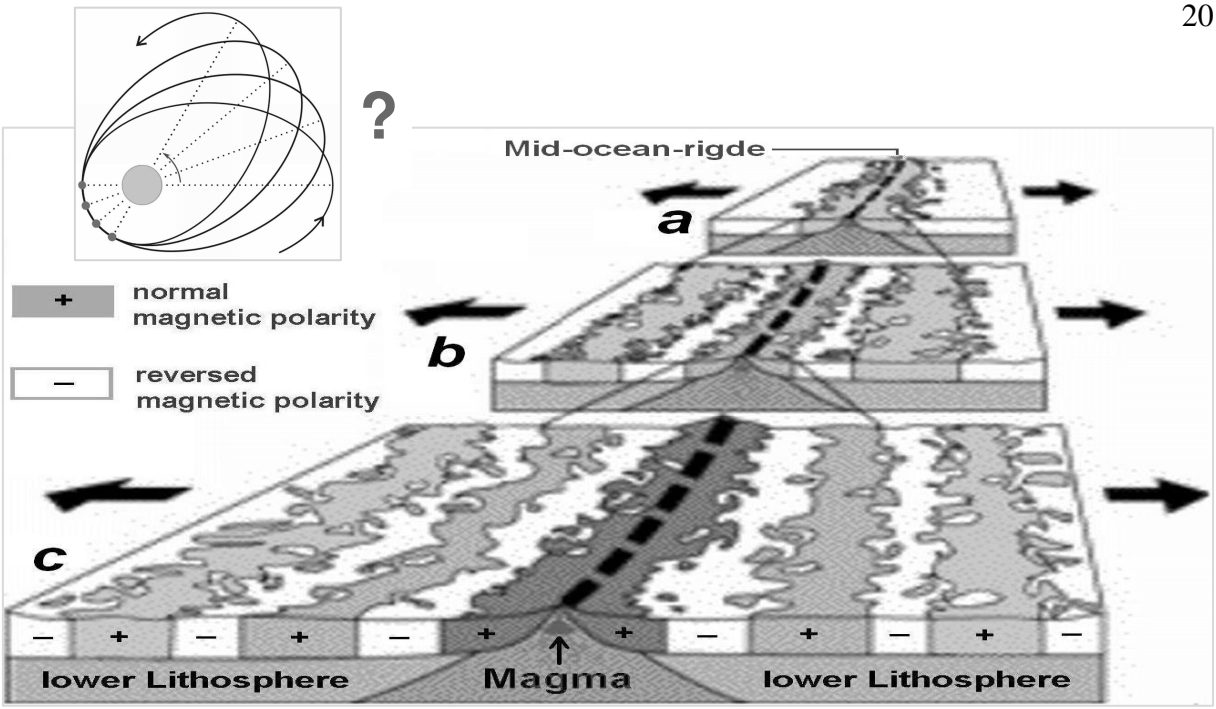
On figure 8 and 9 in part 1 of this publication this region could be localised precisely. Because the emerging of the moon left some vacated spaces, these spaces got filled with first magmatic materials of first ocean-floors. This is the beginning of subduction and the beginning of earth-expansion. So there is no point in discussing, if there is expansion “or” subduction. They both have the same reason and starting basis. Both processes are perfectly compatible if the expansion is seen in the hot phases and the subduction is compensating a slowed down dilatation in cold phases of earth-history.



Images like this figure 29 are most deceiving, because it is not the number of arrows, that shows the velocity of the plates, but it is their length. In this figure there are many short arrows drawn close to each other pointing in the same direction, provoking the optical illusion, that the Pacific would become smaller. There are six arrows drawn in Australia on behind the other, so that their lengths unconsciously get summarised.

Actually the arrows from the points HILO, PAMA, EISL and KWJ1 showing the dilatation velocity of the east pacific rise are longer. Therefore the Pacific ocean-floor must be expanding although the subduction on opposite plates-edges is happening simultaneously. The Holocene is a warmer part of a cold phase. In hot phases there was more dilatation and the subduction could not hinder the increase of volume.

For Geologists it is an open question if the time-intervals between two hot phases are in correlation with the sun's orbit around the galactic centre or other astronomical factors. This needs to be answered by Astronomers. Acting on the assumption that tectonic plates have a constant velocity since the beginning of their motion, not considering an oscillation of velocity due to the hot and cold phases, and calculating the time by measuring the distance leads into circle-conclusions. All released movements slow down when meeting resistances, like for example in this case at the subduction-zones. Therefore it must have happened faster before. An oscillation of expansion-processes is not yet considered by the expansionists themselves, as they need to integrate the new findings about hot phases (Courtillot / Renne: Comptes Rendus Geoscience 335(1) 2003) in their research. The year-numbers in geological time-scales are still hypothetical and can be rendered more precisely, when this question is answered by Astronomers. This is important, because after correcting the geological time-scale the reversal of the earth's magnetic field then possibly could be found in an exact time-correlation with the Milankovic-cycles.



The reversal of the earth's magnetic field is important for the geological age dating. The intervals *seem* to vary from 150.000 - 300.000 years with an average of 250.000. An apsidal cycle is 21.000 years x 12 = 252.000. One platonic year (equinox precession) is 25.700 years x 10 = 257.000 years. The magnetic field gets instable and reduced nine times, each time it recovers again. At the tenth time it reverses. Therefore I propose: During 12 apsidal-cycles the earth-axis is only once in a certain position due to equinox precession, which might have synergistic effects. Centrifugal forces and resonance-effects from repetitions cause an escalation. At the intersection point of 10 equinox-precessions with 12 perihelion precessions a synergistic effect occurs provoking the complete turn-around of the geodynamo in which convecting and electrically conducting fluids generating the magnetic field.

In the same way as a planet performs a perihelion-cycle around the sun, the sun also performs some perihelion-cycle around the galactic centre. If the radiation of the sun varies at a certain point of its orbit is also an interesting question. Astronomers and planetary scientists should scrutinize this and give clarity to the geologists, who have given up on this question before coherences between sea-floor-spreading and the possibility of a varying velocity of the continental-drift with cold and hot phases came into consideration. If the hot phases really depend from the suns orbit, the geological time-scale can be reworked maybe with the result that the reversal of the magnetic field just turns out to happen every 252.000 years.

Summary 2

The cool biogenic planet formation is a new basis to understand the earth-expansion. Dilatation and subduction are compatible, both initiated by the emerging of the moon.

Comparing morphological characters in living beings showing their derivation from a living planet-embryo, we can say that the human beings as well as the animals, fungi and plants are not only the children of the earth in some poetical sense but also its biologic descendants in the sense of modern genetics and planetary science.

The hypothesis in part 1 *can* be proven with natural-scientific methods, and therefore I would appreciate, if the colleagues use it as a working-hypothesis in order to find out if there are any contradictions with recent findings, or if this can be a real solution to the problems the natural-scientists have been working on in the passed decades.

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MEINERHENRICH: http://www.pnas.org/content/101/25/9182.full.pdf

VALLEY: http://www.geology.wisc.edu/zircon/cool_early/cool_early_home.html

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COURTILLOT: http://www.sciencedirect.com/science/article/pii/S1631071303000063

HUNT: http://eearthk.com/Articles03.html

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Heidelberg, August 12 - 2012

S. Eva Nessenius

This work has been selected by the S.O.C.–Team of the University of Munich, Germany, as a poster-contribution presented at the International Conference

Planet Formation and Evolution 2012