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Turning Points of the Earth' Life

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The Life of the Earth

Matter and energy of our Globe appeared about 4,567 milliard years ago together with the other components of our Sun System. Since that time its life can be separated into six periods.

Contents

- First was the biological lifeless one.
- Second can be characterized by the presence of biological life before photosynthesis.
- Third period has started with the appearance of the photosynthetic bacteria.
- Fourth one has begun by the warm-blooded animals.
- The fifth is characterized by the life of human beings.
- During the sixth period artificial energies are used.

Birth of the Earth

During the first period its matter and energy from their beginning from a black hall were determined not only by the effect of the outside circumstances and energies of the total Universe, but its own internal happenings also. During that period intensive atomic exothermic process had milled in the molten Earth. This was the time when atoms were formed. It can be supposed that from the beginning of its life at least 174,000 TW of energy from the Sun has reached its upper surface independently from its structure and temperature. That has been the first and most importan endless energetic effect on our Globe. The energetic action of the cosmos is unknown. Before biological life external energies could only exert their effects on the Earth's surface through physicochemical means. During that atomic period the radiated own energy of the Earth has decreased due to the subsidence of the internal processes, and intensive energy eruptions could only occur in the form of volcanic activity. This condition has lasted continuously not only until the solidification of the Earth's surface, but after it also. We do not know when and how the formation of the atmosphere of the Earth happened. It is thought that at first hydrogen and helium might be its components. Itt is supposed that latter CO_2 has appeared. This gas might be one of the earliest ones which built our atmosphere besides, hydrogen, helium, N_2, ammonia, methane and noble gases. During that period of time the chemical development had continued and the conditions for the appearance of the biological life were formed and the circumstance of the Earth was reductive. The greenhouse gases have had important role. They can influence the temperature of our planet. Without them the Earth's surface temperature would be colder. Fluid water has appered when the temperature of our Globe was under 100 °C about 4,3-4,4 billion years ago. O_2 appeared in greater increasing quantity during the Great Oxidation Event around 2,4 billion years.

Appearance of Microbial Life.

The second period of the Earth's life started with the appearance of microbial life. The life of a living being is a biological phenomenon which has first appeared about some 100 million years after the birth of the Earth supposedly in reductive environment. It was most likely formed in the primeval ocean, in a volcanically active environment which could help the biogenesis. It is very likely that the origin of the life was an one-time phenomenon which is nothing other than a continuous and well-regulated energy (electron/ion) migration/transport/the metabolism existing in a membrane bordered structure/in a living cell at different level and complexity which having the ability of multiplication (from the primordial microorganism and its descendants till the different living individuals of today and also of the future). These primordial bacteria were, for example, chemo-litho-autotrophs and anaerobes, using CO_2 to form their own organic building stones (- among those which direct their genetical processes, too -) and depending on their species, they oxidized sulfur or iron and so on. The electron donor was the hydrogen. The metabolism of these microorganisms resulted in a new energetic situation on the Globe. The energy which originated from the Sun and/or cosmos was mediated by an inorganic lifeless compound/by the donor into a life candidate unite which was ready to accept it for the further life. After the energy acceptance the metabolism of the unit stared and could produce own organic compounds containing energy as well as could multiplicate. Since that point of time utilization of CO_2 started, the bio-energy and its storage appeared, as well as the transformation of the environment, and its loading with bio-heat and bio-products began. The remains of the dead organisms became organic components of water and/or soil as well as their substances with their energies were transformed into the energy sources of the present time/ into fossil energy. As to the energetic conditions of the Earth its own energy has decreased, which according to geophysicists, currently originates from the Earth's inner core, the Sun's energy continuously has arrived in the form of photons ($e = h \cdot f$) and the cosmic radiation is also reaching the Earth**.** It is generally believed that, apart from certain fluctuations, the amount of energy arriving at the Earth from the Sun as well as from cosmos can be considered to be the same. In spite of this situation ice ages were observed during the past. Causes of which are: 1. Milankovitch cycles (Eccentricity - over 100,000 years; Obliquity - varies every 41,000 years; Precession: ot the Earth's every 26,000 years; 2. Plate tectonics movements of the Earth; 3. Change of atmospheric greenhouse gas level. In consequence of microbial life the sterile condition of the environment disappeared.

Appearance of Photosynthesizing Microorganisms

The next stage of evolution was the appearance of photosynthesizing microorganisms which were oxygen non producer bacteria (they appeared about 3,5-3,8 milliard years ago) and O_2 producer ones (they are present 2,4-2,7 milliard years ago and resulted in the Great Oxidation Event). Later the plants and trees also formed with aerobic metabolism – it is thought the trees appeared only 400 million years ago. This state resulted in a new situation (because earlier solar and cosmic energies, which until the photosynthesis acted only through the metabolism of the chemo-litho-autotrophic and anaerobic, primordial bacteria using CO_2) now the photosynthetic anoxygenic bacteria have a new type of metabolism and convert light into energy without splitting water and never release oxygen into the environment. Anoxygenic phototrophs can be classified into two main groups: Photoorganoheterotrophs and Photolithoautotrophs. The oxygen producing aerobic organisms have produced not only their own organic materials, i.e., storing energy but also liberated oxygen, which has remained in the atmosphere in growing concentration. When the metabolism of the aerobe oxygen producing bacteria has started a fundamental change happened in the total environment. The essence of this event can be described with the following equation: $6\ H_2O + 6\ CO_2 + \text{photon} = C_6H_{12}O_6 + 6\ O_2$. 1 mol of sugar contains 2,872 KJ of energy. Among the new aerobe environmental circumstance, the number and kinds of species of living beings increased very rapidly. The remains of the dead organisms are not only the organic components of soil and/or water but also the fossil energy of today, too.

Start of the Anthropoid Period

As a result of continuous evolution, higher-order cold-blooded organisms appeared more than 300 million years ago, and latter warm-blooded (endothermic) living creatures appeared also 230-170 (233?) million years ago during the late Triassic period. As a result of these changes the load on the environment also increased due to the metabolic products of large animals, which in the case of warm-blooded ones was further increased by their thermal effect, too. The proliferation of herbivorous animals created favourable conditions for the multiplication of carnivores. After a long biological evolution 50 million years ago the earliest undisputed anthropoid organisms, such as those of the genus *Eosimias lived in* the late middle Eocene in Asia China appeared. Later these creatures lived in East Africa also where the first pair of prehumans developed about 30 million years ago and from where approx. 50,000 years ago, they began to spread throughout the world and the anthropoid period of our Earth has begun.

Characteristic Qualities of Human Beings

Humans can be distinguished from animals by some characteristic qualities. These are: a.) their familiarity with *fire* and conscious use of *fuels* (That is: the use of increasingly effective energies and production CO_2, NOx, SOx, and so on, as well as ash have started – see Table 1. - In addition to the first table we have to mention the quantity of fuelwood and charcoal also which were summarised by Food and Agriculture Organization for about 1.9 billion m³ (1330 billion t) in 2020, which will rise to between 2.1 and 2.7 billion m³ (1470 and 1890 billion t) by 2050. 1 kg fuelwood produces roughly 4.4 to 5 kWh of energy. In the same time depending heavily on the species of wood and its moisture content about 1,65 and 1.85 kg of CO_2 is produced.); b.) by the cultivation of plants which started about 8-10 thousand years ago; c.) by the domestication and keeping of animals in the same time; d.) by the production of consumer goods; e.) by the mining; f.) by the use of means of transport; g.) by the utilization of *natural energies* (- water, wind, sun - and nowadays by the use of *geothermic, thermonuclear, solar and H energy* - which represent the newest group of energies – see Table 1. and Figure 1. The heat effect of all mentioned energy which became effective as a result of human activities has accumulated with that of the sun as well as cosmos. Their common energetic effect together with their pollutant consequence have determined the condition of the Earth, that is our climate); h.) by the accumulation of wealth; i.) by the appearance of demands regarding the way of life; j.) by their sexual life independent from the estrus serving only pleasure and its aberrations; k.) by the ability to write and read; and l.) by conscious care of environment.

Number of Inhabitants

Since the appearance of the first pair of man, the number of mankind, even if it fluctuated in certain periods, at present it constantly increasing. This is confirmed by the following data. 1850: 1.17; 1937: 2.1; 1950: 2.5. And now in 2026 their number has increased by one in less than 1 second.

Number of Inhabitants of the Earth by Year

1960: 3 billion
1999: 6 billion
2022. 20th April: 7,944,521,000
2023. 2nd April: 7,993,210,376
2026. 4th April: 8,285,200,295

That intensive increase is one of the main problems because everybody wants to live as long as possible on the highest living standard in a developed environment. That fact has resulted in the migration. Beside this the greater population means more needs and in the same time greater injury of the nature. That problem was discussed in our last paper (Ralovich Béla: Which factors influence the life of our Eartth? Journal of Earth and Environmental Sciences Research (2634-8845 2634-8845): 8 5 pp 1-10 (2026))

People's Place of Residence

In the beginning, people's place of residence was less permanent (gathering, fishing, hunting and grazing period) With the increase in their number and needs, as well as with the change in their way of life (the spread of farming, domestic animal husbandry as well as agriculture) and in consequence of industrialization permanent settlements developed and the communal problems related to them became more serious.

On the basis of the newest data of the United Nations Organization the population of the World have lived in at least 12000 cities but the proportion varies from country to country.

Megacities (10 millions+): 33 cities
Large cities (5-10millions): 49-51 cities
Medium-sized cities (1-5 millions): about 429-494 cities
Small cities (Under1 million) Over11,600 settlements
Settlements especially cities, differ from the natural environment and have strong denaturing effect.

Table 1: Data to the circlation of substances and energy on the World

Specification	Years						
	Mass and average heat value of fuels; Quantity of CO2 liberated from them						
	1860	1935+37	1958	1980	2000+05	2009+14	2017 2024
Oil × 10^6t	1	279,5	809,8	3059	3590	4117	4365 5272
40,5 MJ/kg	$4{,}05\times10^{10}$	$1{,}13\times10^{13}$	$3{,}27\times10^{13}$	$1{,}23\times10^{14}$	$1{,}45\times10^{14}$	$1{,}66\times10^{14}$	
CO_2 m^3	$3{,}17\times10^{9}$	$8{,}86\times10^{11}$	$2{,}56\times10^{12}$	$9{,}69\times10^{12}$	$1{,}13\times10^{13}$	$1{,}3\times10^{13}$	
Coal × 10^6t	136	1280	1762	2805	5878	7823	7549 9150
20,35 MJ/kg	$2{,}76\times10^{12}$	$2{,}6\times10^{13}$	$3{,}58\times10^{13}$	$5{,}7\times10^{13}$	$1{,}18\times10^{14}$	$1{,}59\times10^{14}$	
CO_2 m^3	$3{,}12\times10^{11}$	$2{,}92\times10^{12}$	$4{,}05\times10^{12}$	$6{,}45\times10^{12}$	$1{,}37\times10^{13}$	$1{,}72\times10^{13}$	
Gas × 10^9m^3	-	71	400	1531	2778	3479	3768 4124
37 MJ/kg	-	$2{,}62\times10^{12}$	$1{,}48\times10^{13}$	$5{,}66\times10^{13}$	$1{,}02\times10^{14}$	$1{,}28\times10^{14}$	
CO_2 m^3	-	$1{,}37\times10^{11}$	$7{,}72\times10^{11}$	$2{,}95\times10^{12}$	$5{,}36\times10^{12}$	$6{,}72\times10^{12}$	
All together							
MJ/kg	$2{,}8\times10^{12}$	$3{,}99\times10^{13}$	$8{,}33\times10^{13}$	$1{,}8\times10^{14}$	$3{,}66\times10^{14}$	$4{,}53\times10^{14}$	
CO_2 m^3	$3{,}15\times10^{11}$	$3{,}94\times10^{12}$	$7{,}38\times10^{12}$	$1{,}9\times10^{13}$	$3{,}01\times10^{13}$	$3{,}69\times10^{13}$	

Global Primary Energy Consumption

On the basis of the data of 2024 year of Energy Institute „theglobal primary energy consumption rose by 2% to a new record of 592 Exajoules (EJ). Energy-related CO_2 emissions grew by 1%, exceeding 40.8 Gigatonnes — marking a record high for the fourth consecutive year. Electricity demand grew by 4%, outpacing overall energy demand growth. Fossil fuels accounted for approximately 86.6% of global energy consumption, a slight decrease from 87% the previous year."

Global daily energy demand can be divided into two parts. One is the external energy consumption required by technological life of the society. The second is the biological energy needed for human and farm animal life together with that which is necessary for all wild createres.

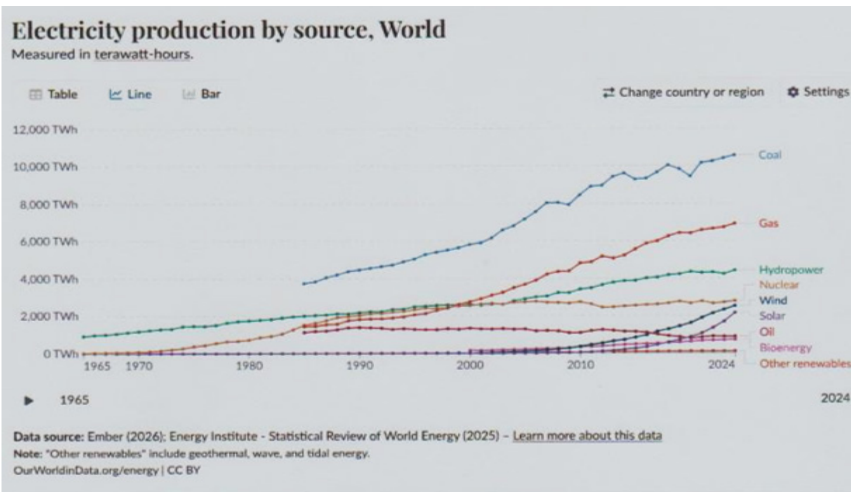

Figure 1: Electricity production on the World 1965-2024.

In 2024–2025 the total primary energy consumption of the world was at record level. Its value was roughly 1.7 billion gigajoules (GJ), or 465 terawatt-hours (TWh) per day. Globally the average person used about 55–57 kWh of primary energy daily but this value was extremely unequal (between 21-202 kWh) dependig on the state of development of the given country. The global energy demand grew by 2.2% in 2024.

The Biological Energy Demand

The biological energy demand in case of an average adult is about 2,000 kcal (kilocalories) per day, which is roughly equivalent to 2.3 kWh. In case of total population which is more than 8 billion people has required only 18.4 TWh energy per day but the life is more than a direct energetic problem. As to the farm animals some data can be seen in the Table 2., 3. and 4.

Table 2: Number of Different Farm Animals on Various Continents.

Specification	Animals and their number x 106				
	Goats	**Buffalos**	**Donkeys + Mules**	**Camels**	**Lama's species***
Europe	17,9	0,2	0,8	-	-
Asia	465,2	160,9	18,8	4,2	-
Africa	218,6	3,4	15,4	15,1	-
N., C. and S. America	35,8	1,1	7,8**	-	5,3***
Oceania	0,7	-	-	-	-
World total in 1999-2000 and 2017	738,2	165,6	42,8	19,3	5,3
	1034,4	200,9	55,3	34,8	-

Rövidítés: * = Lama, alpaca, vicuna és guanaco together; ** = datum only from C.-America; *** = datum only from S. -America; - = datum is not known

Table 3: Living Conditions of Different Farm Animals

Specifications	Species of animals and their number x million									
	Oxen		**Horse**		**Pig**		**Sheep**		**Hen**	
NEEDS	**1 anim.**	**1351,4**	**1 anim.**	**58,2**	**1 anim.**	**922,8**	**1 anim.**	**1056,1**	**1 anim.**	14860,0
O2										
***calf l/day**	390	$5,27x10^{11}$	-	-	-	-	-	-	-	-
***calf l/year**	$1,42x10^5$	$1,92x10^{14}$	-	-	-	-	-	-	-	-
CALORIE										
kcal (kJ) x $kg^{0,75}$ daily	Basal metabolism in case of all animal species in general 70 (293)									
yearly	$2,55x10^4$ $(1,07x10^5)$									
kJ x $kg^{0,75}$ daily	Existential metabolism in case of all animal species 475-575 in general 525									
yearly	$1,91x10^5$									
***calf daily kJ**	7712,9	$1,04x10^{13}$	-	-	-	-	-	-	-	-
yearly kJ	$2,86x10^6$	$3,8x10^{15}$	-	-	-	-	-	-	-	-
kg /kJ daily**	600 $/3,5x10^4$	4,77 $x10^{13}$	500 $/3,09x10^4$	-	100 /9207	-	50 /5400	-	2 /502	-
yearly	1,29 $x10^7$	1,75 $x10^{14}$	1,12 $x10^7$	-	3,36 $x10^6$	-	1,98 $x10^6$	-	1,83 $x10^5$	-

METABOLISM										
kg /W/day	600 /411	-	500 /358	-	100 /10^{6}	-	50 /62,9	-	2 /5,8	-
W/year	1,5 x10^{5}	-	1,30 x10^{5}	-	3,88 x10^{4}	-	2,29 x10^{4}	-	2,11 x10^{3}	-
*** calf W/day**	89,16	-	-	-	-	-	-	-	-	-
*** calf W/year**	3,25 x10^{4}	-	-	-	-	-	-	-	-	-
WATER (drinking)										
ml/kg	129	-	78	-	108	-	76	-	-	-
kg/l/nap	600 /77,4	-	500 /39	-	100 /10,8	-	50 /3,8	-	0,25***	-
kg/l/év	2,82 x10^{4}	-	1,42 x10^{4}	-	3,94 x10^{3}	-	1,38 x10^{3}	-	73 -110	-
WATER (technological)										
l/day	-	-	-	-	15	-	-	-	-	-
l/year	-	-	-	-	5,47 x10^{3}	-	-	-	-	-

Abbreviations: * = experimental datum of one calf of 75 kg body weight; ** = effective body weight; *** = in case of one animal; 1 anim. = one animal; - = datum is not known

Table 4: Emissions of Different Species of Farm Animals

Specifications	**Species of animals and their number x million**									
EMISSIONS	**Oxen**		**Horse**		**Pig**		**Sheep**		**Hen**	
	1 anim.	**1351,4**	**1 anim.**	**58,2**	**1 anim.**	**922,8**	**1 anim..**	**1056,1**	**1 anim.**	**14860,0**
CO2 when O2 demand 390 l										
***calf l/day**	311	4,2x10^{11}	-	-	-	-	-	-	-	-
***calf l/year**	1,13 x10^{5}	1.53 x10^{14}	-	-	-	-	-	-	-	-
METHANE										
l/day	100-500	1,35-6,75 x10^{11}	-	-	0,3-1,5	2,7-13,8 x10^{8}	<50	<5,3 x10^{10}	-	-
l/year	3,65-18,2x10^{4}	4,94-2466 x10^{11}	-	-	1,09-5,4 x10^{2}	1-5 x10^{10}	<1,8 x10^{4}	<1,92 x10^{13}	-	-
HEAT when 50% of metabolism										
****kg/ W/day**	600 /205,6	2,77 x10^{11}	500 /179	?	100 /53,2	?	50 /31,4	?	2 /2,9	?
W/year	7,5 x10^{4}	1,01 x10^{14}	6,53 x10^{4}	?	1,94 x10^{4}	?	1,14 x10^{4}	?	1.05 x10^{3}	?
***calf W/day**	44,58	6,02 x10^{10}	-	-	-	-	-	-	-	-
***calf W/year**	1,62 x10^{4}	2,18 x10^{13}	-	-	-	-	-	-	-	-

WATER										
by evaporation g/ 100 kg animal/hour 240										
g/m2/hour	10-200	-	-	-	-	-	-	-	-	-
by perspiration l/hour	-	-	some litre	-	-	-	-	-	-	-
URINE										
l/day	10-15	1,35-2,02 x10^{10}	4-5	2,3-291 x10^{8}	2,5-4,5	?	0,6-1,0	?	-	-
l/year	3,6-5,4x10^{3}	7,39x10^{12}	?	7,3 x10^{11}	?	?	?	?	-	-
FAECES										
kg/day	10-30	1,35-4,05 x10^{10}	15-23	?	0,5-3		1-3		0,1-0,15	1,48-2,22x10^{9}
kg/year	3,6-10,9 x10^{3}	1,47 x10^{13}	?	?	?	?	?	?	?	5,48,1x10^{11}
Water content in %	80-85	-	70-80	-	55-75	-	55-75	-	-	-
MANURE										
kg/animal/day	Is different dependig on the animal species and the way of breeding									
SEWAGE										
l/day	30***	4,05 x10^{10}	1,74 x10^{9}	-	-	-	-	-	-	-
l/year	1,09 x10^{4}	1,47 x10^{13}	6,3 x10^{11}	-	-	-	-	-	-	-

Abbreviations: * = experimental datum of one calf of 75 kg body weight; ** = effective body weight; *** = in general 30 l/day in each single animal (500 kg); - = datum is inknown, ? = datum is not written because of the

Although unpleasat environmental events connected with human beings have already begun at least 50 thousand years ago and they have accelerated since 1769 (– the industrial revolution started then -) the first alarming visible real picture appeared in Africa during the fifties when the snow of Kilimandjaro desappeared. At present warming and melting are general on the total World.

The Impact of Modern Transport on Our Environment

The first car with an internal combustion engine was made by Benz Carol Frederick in 1886. The number of cars was 9,504 in 1900, 1 million in 1910, 10 million in the early 1950s, and 60 million in 2010. According to the summary of production values, only 2.7 billion vehicles were produced in the 144 years between 1886 and 2014. However, according to the International Automobile Manufacturers' Association, a total of 96.4 million vehicles were already made in the world in 2025 alone, which is an increase of about 4% compared to 2024. Of these, 71.3 million were passenger cars, while the rest were commercial vehicles. Currently, 95% of vehicles run on petrol or diesel fuel and emit CO_2, CO, nitrogen oxides (NOX), hydrocarbons (CMHN), aldehydes (R-CHO), H_2O, additives, carcinogens and soot. The world's road vehicles currently consume approximately 1.45-1.50 trillion (trillion) litres of fuel per year, which is about 45-50% of the total oil production. The amount of heat energy released during the use of this fuel, if the average calorific value of one litre of petrol or the same amount of diesel is about 31-32 MJ/l or 35-36 MJ/l, then this all is approximately 1.45-1.50 trillion times more than in case of 1 liter**.**

The first successful flight was performed by the Wright brothers (Wright Orville and Wright Wilbur) in 1903. The first civilian aircraft to carry people regularly took off in the USA in 1914. In 2013, 3.1 billion passengers were carried on 37.4 million flights by 25332 aircrafts. In 2024, the total number of passengers (domestic and international) exceeded 9.5 billion. Global demand in passenger-kilometres increased by 10.4% compared to 2023. Based on the summarised number of domestic and international departure/arrival passengers, the order of each country is as follows: USA 876 million; China 741 million; United Kingdom 261 million; Spain has 241 million passengers and India 211 million passengers. In 2024, a total of 60.8 million tonnes of goods were also transported. Air transport is approx. **used 375-405 billion liters of** kerosene in 2024 and emitted CO_2, CO, NOX (11.8 g of NOX is produced when 1 liter of kerosene is burned), H_2O, as well as various nano-particles in significant quantities. The visible image of the emission of combustion products into the atmosphere is the contrail. The amount of heat energy released during air travel, if the average calorific value of one litre of kerosene is about 34.5–38 MJ/litre, then this amount of energy converted into electricity is approximately 8.8–10.5 kWh/l, i.e. The amount of heat energy released during air travel, if the average calorific value of one litre of kerosene is about 34,5-38 MJ/litre then the total amount of heat produced is equal 375-405 billion times more.

During the operation of the vehicles 2,3-2,68 kg/l of széndioxid is produced, depending on the type and quality of the fuel. This means that in the case of cars: 2,3 to 2,68 kg/l x 1,45-1,50 trillion liters and in the case of airplanes: 2,3-2,68 kg/l x 375-405 billion liters carbon dioxid were emitted.Based on the data presented, it can be stated that transport is one of the most harmful human activities on the environment.

Data on Environmental Damage Caused by Acts of War

Due to its secret nature, the issue can only be known with a rough approximation. The topic consists of two main parts. One *is* the environmental burden caused by the increased industrial production switched to war economy. This occurs when cannons, mortars, tanks, rocket artillery, multiple launchers, planes, helicopters, drones, as well as their ammunition, explosives, bombs, as well as transport vehicles and small arms with the necessary ammunition, as well as mines are produced according to demand in quantities of up to millions or billions, depending on their type. *The other* is artillery, rocket-artillery ammunition, suicide drones, tactical and ballistic missiles, small arms ammunition, and harmful substances released when exposed to various mines used during battlefield events. Explosives release varying amounts of CO_2, NOX, CO, other toxic gases, heat, dust, water vapor, nitrogen and nano-particles into the air, depending on their type and weight. (E.g.: if we examine the effect of 1 kg of any explosive, it can be established that usually 20 – 100 g of CO, 5 – 16 g of NOX, 10 – 50 g of dust and soot, 150 – 500 g of CO_2, 1 – 5 g of other gases are released into the air, which, depending on the chemical composition, can be sulfur dioxide, methane, ammonia, or possibly hydrogen cyanide.) The explosive heat of the trotile is ~4.184 MJ/kg (or 1000 kcal/kg). This forms the basis of the international TNT equivalent. Currently, 155 mm M107 ammunition with a TNT content of 6.6-6.9 kg is most often used in wars. A more modern version of this is the M795 type, which contains 10.8 kg of TNT. Today, a mixture of TNT and Hexon is more commonly used, which contains 59.5% Hexon (Comp B) and 39.5% TNT. Its explosive heat is about 1.24 kcal/g**,** which is 5188 kJ/kg (or 5.19 MJ/kg). Both projectiles can be deliv ered to the target with the desired amount of propellant charge. The explosive heat of the propellant charge is typically 2.5 and 5.0 MJ/kg in the case of gunpowders and propellants, i.e. approx. ranges from 600 to 1200 kcal/kg. Based on this, if only one M795 projectile is fired with 1 kg of propellant charge, the environmental load is 10.8 kg x 5.19 MJ+3.75 MJ, i.e. 59.8 MJ of thermal energy. If we take into account that there are currently about 31000 shots per day, it burdens the environment with 1.853800 MJ of heat, in addition to the other pollutants already listed and the destructive effect. On an annual basis, this amount of heat amounts to 6.881637000 MJ. We do not deal with the effect of other explosive devices because the necessary data are missing. Also we do not know the type and quanity of fues used by land and water vehicles of the Defence Forces, as well as by aircraft of the Air Forces. One thing is sure that rocket engine produces extreme heat and chemical pollutants that severely injures atmosphere and global climate trends [1-20].

Conclusion

Our Earth is a closed systhem. Its capacity is known. Therefore it is obligatory to determine the rules of the peaceful steady state condition of permanent life of every kinds of human beings all over the the Globe. The situation is serious.

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