INTERVIEW TO MARIUSZ ORION JĘDRYSEK

I met Mariusz Orion Jędrysek for the first time in May 2012 in Bruxelles, where we were both invited to give a talk to those members of the EU Parliament wishing to listen on energy and climate policy. I was – and still I am – nobody, whereas Jędrysek was himself a member of the Polish Parliament (2011-19), and (2015-19) Secretary of State at the Polish Ministry of Environment and Government Plenipotentiary on Raw Material Policy. The important fact for us is that Jędrysek is a full professor in Geology and is a member of the Committee on Mineralogical Sciences in the Polish Academy of Sciences and President of the Council (2006-07) and Assembly (2016-17) of the International Seabed Authority of United Nations, that controls near 2/3 of the Earth's surface.

Q. Professor Jędrysek, before being a politician you are a top-most scientist in the field of geology and you have published many papers in climatology. So you are indeed my man for this interview. Here is my first question. A major concern nowadays is climate change, allegedly unprecedented. Is it so?

We can assume that the only thing that doesn't change is that... the climate changes. It changes continuously and at different rates. Paleoclimatologists – the geologists of climate change – have long used the terms "global warming" and "global cooling". In the last billion years, namely since life has been an important element of the environment, there have been times when the Earth was much warmer and times when it was much colder than today. There were times when the Earth was entirely covered with ice and times when there were no glaciers. To say that today is an unprecedented period of climate change is a double false, historical and scientific.

Q. Is the present global warming due to the anthropogenic CO_2?

The short answer is: very unlikely. During the last 500.000 years, when CO_2 levels in atmosphere have always been lower than 300 ppm, the planet had long periods with a climate warmer than it is now. And in the last 1000 years, we have had warming, cooling, more precipitation, less precipitation. And if you look at the changes over the last millennium, it seems like there are cycles: we have warming now. If we consider the concentration of carbon dioxide in the atmosphere, we are having one of the lowest concentrations in the history of the Earth. The lowest recorded value was probably 280 ppm, now it is 400 ppm, but there was a time when it was even 2000 ppm, and yet there was life. I don't dispute that mankind produces a lot of CO_2, which might affect climate, but I would be happy to know how much. And 80% of the greenhouse effect is due to water. CO_2's contribution is minor and most of it is natural: anthropogenic contribution is really tiny.

Q. The present global warming is a phenomenon that started since the minimum of the Little Ice Age, around 1690. What is the cause of the warming for 200 years or so after then?

The Little Ice Age was a global phenomenon. We have historical records in Poland about the freezing of the Baltic Sea in the 17th century. And you have similar documents for Italy and elsewhere in the world. The most accredited explanation of the warming following the minimum of the Little Ice Age is the one that wants it to be of astronomical origin: astrophysicists call it the Maunder Minimum, i.e., a minimum of solar activity. In fact, the global warming we are experiencing today is the planet's natural

exit from the Little Ice Age, which were the coldest two centuries in the last 10,000 years. Those who argue that the warming of the last century is 100% anthropogenic should explain the origin of the warming of the previous two centuries.

Could it be that the cause of the warming was astronomical between 1700 and 1850 but anthropogenic between 1850 and today?

It could be, but there was a cooling during the years 1940-75, when emissions were booming. And there was no warming during the years 1999-2014, in spite of the restless CO_2 emissions. So, the whole anthropogenic global warming conjecture is quite a shaky one.

There is also a notable discrepancy between climatologists and paleoclimatologists (mainly geologists) in the assessment of the causes of climate change. The former associate the intensification of extreme climatic phenomena with the increasing concentration of greenhouse gases (mainly CO_2). However, the geochemical balance shows that the anthropogenic emission is only a small percentage of the total CO_2 emission. Therefore, the question about the actual role of man is still open, especially since the share of emissions of these gases from natural sources is little known. We cannot deny that burning coal can also cause a surplus of CO_2 emissions by several percentage points, and that today's increase in CO_2 concentration is almost sudden in geological terms. However, such a thing happened naturally also in the geological past - for example at the turn of the Permian and the Triassic. However, the real unanswered question is about the extent of the effects on climate change. There are too many things we still don't know: the role of clouds and albedo, for example.

Was the Kyoto protocol a wise initiative?

I do not think so. Undoubtedly it has been a failure. It aimed at a worldwide emission reduction in comparison to the 1990 emissions. However, emissions are today 60% higher than those of 1990. The EU would like to reduce CO_2 emissions by 50% before 2030 and by 100% before 2050. These are unattainable goals, as unattainable was the goal of the Kyoto Protocol. Just trying to implement those goals will seriously affect the cost of industrial production and electricity generation. The contents of all these purposes seem to have nothing to do with science and knowledge, which is used selectively. Instead, any step to reduce greenhouse gas emissions – assuming it makes sense to do so – should be based on a reliable knowledge of the balance of all gas emissions from all sources (natural and anthropogenic) and absorption/sequestration (natural and anthropogenic), and taking into account the actual climatic sensitivity (i.e., the temperature increase by doubling the CO_2 concentration), which is a data with enormous uncertainty.

Do you believe these actions are responsible for the increase of energy bills?

Yes. I well recall your 2012 speach: you were already then warning that the EU climate-energy policy would have increased energy prices. Indeed that was the title of your talk: "Soaring energy bills, a failure of EU's energy policy". Your line of reasoning was very simple, yet for some reason some politicians refuse to see the facts.

Franco Battaglia