WHY IS CLIMATE SCIENCE FAILING US?

A lecture with this title was given by a retired climate scientist [1] in the early 2000s. It was one of those lectures where the presenter made several bold statements early, that few believed, but by the end of the lecture most were convinced.

He opened by stating that if you approached any honest scientist and asked them 100 questions about the climate, they would answer “We don’t know” for 99 of the questions. On the last question they might say “We think we are getting close to understanding that but, at this stage, don’t put your money on it”. He then went on to explain why climate science was failing our society.

Climate science is very new specialisation in the field of science and has only been with us for a few decades. So, it should not surprise us that the level of knowledge is about the same as medicine was 500 -1,000 years ago. Just because all the other fields of science are well advanced, does not mean this field is just as advanced. For the layman, who has much faith in science, this is hard to accept.

One of the first tasks of medical science was to identify all the major parts of the human body. Then try and find out how each part worked in isolation. During that investigation more parts of the body were identified.

The level of knowledge began to expand rapidly when the interplay between all the parts of the body was studied. This required a much deeper examination of what appeared to be the smaller parts of the body. This top down approach over several centuries continues today but, although there is much to discover, medical science today has a wealth of knowledge.

In contrast, at the highest level, climate science has a lot of educated guesses but not much knowledge. Since the birth of the planet, most think that there has been five Ice Ages each that lasted for millions of years. Some believe there has been six Ice Ages. The Ice Age that we are in today has been going for 34 million years [2]. In between these Ice Ages, Earth was ice free, even in the high latitudes.

We still don’t know what causes the climate to go into an Ice Age or what happens to bring it out of one. When we apply some of our educated scientific guesses, they seem to work some of the time but not all the time. We are not talking about a lack of perfection – it is better described as having some rudimentary knowledge.

Within an Ice Age, there are alternating glacial and interglacial periods for approximately 80% of the time. Glacial periods last approximately 100-120 thousand years and inter glacial periods last approximately 10-12,000 years. We have some educated guesses but no real knowledge that explains what triggers the start or end of glacial or interglacial periods. Also, there is no solid explanation of what causes the other 20% of the climate when it is not oscillating between glacial and interglacial periods. We don’t know.

Taking a further step down, we don't know why some glacial periods are more severe than others. Or, why some inter-glacial periods are significantly warmer than others. The inter-glacial period before the one today was five degrees warmer. Why? We don't know. We have some knowledge, but it is not solid. There are too many things we cannot explain.

Coming out of the last glacial period into the present interglacial period there was significant 'turbulence' in the climate for 2,000 years, followed by the "Climate Optimum", a 4,000 year warm period with global temperatures several degrees higher than today. Can we explain, rather than guessing, what was causing the climate changes in this 6,000 year period. No. We don't know.

After the Climate Optimum, the climate settled into oscillating multi-century warm and cold periods and, within each of these periods, there were alternating multi-decade warm and cool periods. Do we know how this happened with a level of knowledge that we could predict the start and ending of such oscillations? No, we can't – we just don't know. So, what are we doing today?

Nonplussed about our significant lack of knowledge at the upper levels of the climate science "body", we have dived down ten levels and are now confidently pretending to know what is causing average global temperature movements measured in tenths of one degree in a century, one hundredths of a degree in a decade and thousandths of a degree in one year.

Having shown complete scepticism on the level of knowledge in climate science so far, let us now turn the coin over see what we might expect to see if we had near perfect knowledge about global temperatures - and look reality in the face.

To have perfect knowledge about global temperatures we would need to know;

- All the factors that affected global temperatures,
- How each one of these factors worked, and
- How all of these worked together.

With this perfect knowledge we could replicate the past movements in global temperatures and, more importantly, make accurate predictions of future global temperature movements. Because of the complexity of this system, these predictions could be made using computer models.

For forty years now Green climate scientists have been inputting the very best science they have into computer models and making predictions based on the output from the models. Although never claiming they had perfect knowledge, they allowed the United Nation's bureaucrats to tell the World that their science was 95% solid.

Unfortunately, after this courageous boasting, their predictions have been failing with 5-15 fold errors. Welcome to reality. Obviously, there is something wrong. Let us take a step by step back from the idea that climate scientists have near perfect knowledge about global temperatures.

If they had perfect knowledge about every factor except the greenhouse gasses, and in particular CO_2, then the 5-15 fold overestimation errors could be attributed to a serious lack of knowledge about the greenhouse gasses.

Or, they could still have near perfect knowledge about everything, including the greenhouse gases, but be unaware of one or more unknown factors that affect global temperatures. The 5-15 fold errors could then attributed to these unknown factors. This is not very helpful especially as the World is spending trillions of dollars [2] trying to reduce the assumed impact of CO_2 which is not the problem.

One final step backwards before we arrive back at "We don't know" level of knowledge. If they had small, individually, but large, collectively, errors in every 30 presently known factors affecting global temperatures, then the 5-15 fold errors could be attributed to a general lack of knowledge about all these factors.

Any objective scientist, who did not have the near religious zealotry shown by most climate scientists, would suggest that these errors were caused by a combination of;

1. Unknown factors. Several new factors have been discovered in the past few decades. Why assume you have identified all factors?
2. The significant lack of knowledge of how the factors work and the size of the effect of most of the known factors.
3. The very poor understanding of over half a dozen feed-back factors, and finally
4. An unprofessional and unsubstantiated exaggeration of the effect of CO_2.

This is now very close to the "We don't know" level of knowledge in climate science. Even if agreement cannot be reached about the reasons for the 5-15 fold errors, we cannot ignore the reality of such large errors. We should not continue to claim that the climate scientists' theory and science is solid. It is anything but solid.

SLOW IMPROVEMENT FOR CLIMATE SCIENCE

The rest of the lecture discussed several reasons why knowledge about our climate could only be discovered very slowly – unlike any other field of science.

We Cannot Experiment

Many scientific experiments have a scientist creating a control group and an experimental group. Then changing one variable in the experimental group and identifying the effect by comparing the two groups.

This cannot happen while studying the climate for two obvious reasons. First, we cannot set up a "control" planet identical to Earth orbiting the sun. Second, scientists have no control over the variables affecting our climate.

Consequently, climate scientists cannot experiment – they can only observe. This also has problems because of the difficulty of determining what is 'normal' climate during their observations.

Difficulty Identifying "Normal"

If we tried to tell someone what the weather would be on June the 30th next year we have a problem. Because our weather changes every day, we can only use statistics to tell the person what chance they had of seeing certain temperatures, winds and precipitation on future June the 30ths.

To identify a valid statistical answer, we would require 30 samples of the weather on June 30th. We would then describe this as climate on the 30th and not the weather on the 30th.

This can be accomplished but it does take thirty years of observations. Now if we study an ocean current that has a three-year cycle, we will need 90 years of observations. Some ocean currents have a thirty-year cycle which would require 900 years of observations. Studying a glacial period that lasts at least 100,000 years requires observations over three million years.

This is increasingly difficult and is only going to identify what is "normal" and doesn't answer any questions about 'Why?'.

An added complexity is taking these observations while there is a steady change taking place. In our current multi-century warming period, temperatures are rising slowly. The first 30 years of weather will be different than the last thirty-year period before temperatures start to decline again. We could expect more "records" in the latter 30 year period at the end of the warming of the multi-century warming period.

Obviously, there are surrogate measures of past climates that can be used but these will not provide the same accuracy expected today when we ***think*** we can measure average global temperature to an accuracy of tenths of a degree in a century, hundredths of a degree in a decade, and thousandths of a degree in a year

Finally, as we have only had five or six ice ages each lasting tens of millions of years, we are unlikely to ever to establish what is a 'normal' ice age.

A Multi-discipline Area of Science

The study of our climate involves more than 90 sub-disciplines in science and other areas. This will slow progress significantly. A multi-discipline team of three specialists will not be slowed by much. But as more and more disciplines are added to the team, progress will slow.

Already in studying our climate, there have been wasted years when some of the team have gone down a path before another team member tells them that it was an obvious false start and they are wasting their time. It took over ten years before some of the climate scientists were willing to admit that the "Hockey Stick fiasco" was just that – a fiasco. Ten years of wasted effort that non climate scientists could see in the first year!

A Growing Lack of Professionalism Amongst Scientists

The presenter divided his criticism into two groups; first all scientists, but then spent most of his time criticising climate scientists.

He believed the following factors were causing decreasing professionalism in science;

- The increasing amount of dishonesty in Western societies,
- The decreasing standards or discipline seen in secondary, tertiary and advanced educational schools, where sub standard students survived in a climate of "we are all as good as one another – and no one should fail"
- The dominance of government research funding,
- The "Publish or Perish" pressure on scientists, and
- Too many scientists.

His criticism of climate scientists, in particular, was detailed and much of it, is covered on this Website in Misbehaviour, page 6. He identified two main causes of the lack of professionalism in the climate science discipline. The first cause was understandable, and he felt some compassion for them. The second however was inexcusable and was damaging the whole professional image of all scientists.

This is a very young field of science with very little knowledge. However, governments and citizens expect climate scientists to perform as well as all other scientists – which is impossible. To exacerbate this effect, governments are pouring extraordinary amounts of taxpayers' money into climate research. To try and justify this expense far too many climate scientists exaggerate their knowledge and understanding.

Secondly, most climate scientists are 'infected' with a near zealotry commitment to their 'cause', which has them losing sight of reality. They try to "hammer the square peg of their unscientific ideas into the round hole of reality". When that fails, they bury their heads in the sand and claim their efforts as a "victory for the cause."

Conclusion

The presentation concluded with the presenter saying he was horrified at the amount of money [3] Western governments were spending/wasting on this issue when even a casual glance at the IPCC reports – which monopolise the information given to governments – showed how inadequate this advice was.

As a scientist, he was ashamed to see scientists telling their governments that they had 95% confidence in the science while their predictions had 5-15 fold errors and some of these errors were still growing.

He believed one way that might ‘ground’ climate scientists in reality, and to alert all governments to the lack of quality in the advice, was to change the name of “Climate Science” to the “We Don’t Know Science”.

Notes:

1. Because he was retired, he was now no longer ‘gagged’ and could air his criticisms about the failure of climate science.
2. https://en.wikipedia.org/wiki/Ice_age
3. In the Kyoto period from 1995-2010, EU countries spent 15 trillion dollars trying to prevent man-made catastrophic global warming.