

It has been an embarrassing display, not just for the Republican Party but also for Congress and the US citizens it represents.

It is tempting to write all of this off as petty partisanship, a populist knee-jerk reaction to lost jobs and rising energy prices by a well-organized minority of Republican voters. After all, US polling data has consistently shown that, in general, the public accepts climate science. At a hearing last week, even Ed Whitfield (Republican, Kentucky), who chairs the subcommittee, seemed to distance himself from the rhetoric by focusing not on the science but on the economic effects of greenhouse-gas regulation. "One need not be a sceptic of global warming to be a sceptic of the EPA's regulatory agenda," said Whitfield.

Perhaps, but the legislation is fundamentally anti-science, just as the rhetoric that supports it is grounded in wilful ignorance. One lawmaker last week described scientists as "elitist" and "arrogant" creatures who hide behind "discredited" institutions. Another propagated the myth that in the 1970s the scientific community warned of an imminent ice age. Melting ice caps on Mars served to counter evidence of anthropogenic warming on Earth, and Antarctica was falsely said to be gaining ice. Several scientists were on hand — at the behest of Democrats on the subcommittee — to answer questions and clear things up, but many lawmakers weren't interested in answers, only in prejudice.

It is hard to escape the conclusion that the US Congress has entered the intellectual wilderness, a sad state of affairs in a country that has led the world in many scientific arenas for so long. Global warming is a thorny problem, and disagreement about how to deal with it is understandable. It is not always clear how to interpret data or address legitimate questions. Nor is the scientific process, or any given scientist, perfect. But to deny that there is reason to be concerned, given the decades of work by countless scientists, is irresponsible.

## Cause for concern

*Scientists studying diseases should be motivated by patients, but not led by them.*

In the furious debate over whether chronic fatigue syndrome is linked to a mysterious retrovirus called XMRV, scientists can at least agree on one thing: the whole thing is a mess.

In the year and a half since researchers first claimed they had found the virus — which resembles viral sequences in the mouse genome — in people with the disease, nothing close to consensus has emerged. Several groups have tried to verify the results using different methods, and most have found nothing, leading them to suggest that the initial, promising experiments were simply an artefact of laboratory contamination.

But the few scientists who have found evidence to link the virus to the syndrome, also known as myalgic encephalomyelitis, are rigorously defending their data (see page 282). Led by Judy Mikovits at the Whittemore Peterson Institute for Neuro-Immune Disease in Reno, Nevada, they blame patient heterogeneity, the geographical distribution of the virus and methodological issues among the reasons for the failure to verify a link.

Clarity is urgently needed, both by the scientists and by patients desperate for an answer. Owing to the difficulty in diagnosing a chronic disorder with diffuse symptoms, many people with the disease feel they have been marginalized by the medical community — told that there is no help for them, or even that they are imagining their symptoms. It's not hard to see why patients and advocacy groups have come to Mikovits' defence. XMRV provides legitimacy, and the hope of a treatment.

Given the long and convoluted history of infectious agents proposed and later disproved as a cause for chronic fatigue, this debate could continue for some time. Among the researchers searching for a definitive

That this legislation is unlikely to become law doesn't make it any less dangerous. It is the attitude and ideas behind the bill that are troublesome, and they seem to be spreading. Fred Upton, the Michigan Republican who chairs the full energy and commerce committee, once endorsed climate science, but last month said — after being pinned down by a determined journalist — that he is not convinced that greenhouse-gas emissions contribute to global warming. It was

**"The US Congress has entered the intellectual wilderness."**

yet another blow to the shrinking minority of moderate centrists in both parties.

One can only assume that Congress will find its way at some point, pressured by voters who expect more from their public servants. In the meantime, as long as it can fend off this and other attacks on the EPA, President Barack Obama's administration should push forward with its entirely reasonable regulatory programme for reducing greenhouse-gas emissions where it can, while looking for ways to work with Congress in other areas. Rising oil prices should increase interest in energy security, a co-benefit of the greenhouse-gas and fuel-efficiency standards for vehicles that were announced by the administration last year. The same advice applies to the rest of the world. Work with the United States where possible, but don't wait for a sudden change of tenor in Washington DC.

One of the scientists testifying before Whitfield's subcommittee was Christopher Field, director of the Carnegie Institution's global ecology department in Stanford, California. Field generously hoped that his testimony at last week's hearing took place "in the spirit of a genuine dialogue that is in the best interests of the country". Maybe one day that hope will be justified. ■

answer are several high-profile groups commissioned by health officials in the United States; they also aim to determine whether XMRV is floating around in the blood supply and being passed from person to person. There is a lot at stake. Hypotheses that are later discarded by science can linger on in the minds of the public: witness the supposed link between the measles, mumps and rubella (MMR) vaccine and autism, which has refused to die years after the weight of evidence should have squashed it. Patients who latch onto XMRV as the cause of chronic fatigue syndrome are likely to find it hard to let go, even if most scientists eventually conclude that the evidence is against it. Some are already being tested for the virus and starting to take potent, antiretroviral drugs if they test positive, all on the basis of an unproven hypothesis.

The challenge for scientists in this field, as in any other that involves patients, is to understand and be motivated by the plight of the patient community without letting their research be swayed by it.

Mikovits has worked with her critics to identify and pursue the research needed to resolve the debate. She is right to engage in debate about her science and defend it where necessary. But Mikovits and her critics need to maintain an open mind.

Scientists are taking the risk of XMRV seriously, as they should. The National Institutes of Health and others examining the link should see their studies through. A thorough, well-funded effort to get to the bottom of the situation should help to ensure that time, money and the careers of young scientists are spent effectively. But if the association is not borne out by these studies (and the preponderance of evidence thus far suggests that it may not be), will the spotlight on chronic fatigue syndrome endure or dim?

Many scientists who have waded into the debate are experts in viral disease, and they say they are unlikely to pursue work on chronic fatigue. This is a pity but, given the pile-up of criticism that was Mikovits' reward for diligently following up her data, perhaps no surprise. Several lines of evidence suggest that chronic fatigue has an infectious origin. It is to be hoped that one day scientists will manage to pin it down once and for all. ■

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