

RECENT REPORTS

in the media raise concerns about the appropriateness and the accuracy of terminology used by microbiologists to communicate with the public and each other. A key issue has to be the casual and indiscriminate use of 'bug', which is prevalent in its use within the community of microbiologists. The term has a broad range of definitions, including (but not restricted to) an annoyance, a surveillance device and all sorts of small organisms, from viruses and bacteria to insects in the garden. More significantly, to the general population, 'bug' is the umbrella term of choice used to describe a variety of illnesses, including food poisoning, which may be caused by different types of organisms – notably, viruses and bacteria.

The outbreak of food poisoning centred in northern Germany during spring 2011 was picked up by the British media and reported widely. This story joined the notorious list of similar *Escherichia coli* outbreaks that have hit the headlines, with their associated morbidity and mortality issues. If a positive outcome of these recurring headlines could exist, then perhaps the repeated reporting of these stories would lead to factual accuracy. However, this last outbreak showed that such factual accuracy is not always apparent. Media reports described the steps being taken by the authorities to track down the bacterium responsible for this outbreak – the deadly but elusive '*E. coli* virus (*sic*)'. This highlights incidents where virus and bacterium are used interchangeably, revealing a clear misunderstanding of the differences between these organisms, or 'bugs'!

The reporting of this story highlights concerns about the use of 'bug' as appropriate scientific terminology. Rather than laying the blame at the door of sloppy reporting and the lack of scientific education of the average journalist, perhaps the problem lies closer to home? Turning the spotlight back on ourselves as microbiologists, let us examine the fine line between pedantry and literary ease, associated with the prevalence of and our willingness to describe all microscopic life forms as 'bugs'. The attraction of this term is clear: it is a shorthand, umbrella term that is accepted and understood by our peers and the public. Or is it? Perhaps by using this term we have blurred the key distinctions between microbial life forms. Therefore, should we be shocked when we have this lack of clarity reflected back at us?

But should it really be a concern that there is a lack of exactness in using this term? Let us review one of the key microbiological issues affecting humanity today: the growing number of disease-causing bacteria that are developing antibiotic resistance. This has been exacerbated by indiscriminate, mis-prescribing of antibiotics for infections caused by 'bugs'. To counteract this issue, many campaigns have been directed at governments, healthcare workers, the food industry and the general public with an emphasis on developing an

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A listening device, an annoyance, an illness or an indiscriminate term for various types of microbe – what is a 'bug', and does it have any place in microbiological parlance?

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COMMENT

Stop bugging me!

understanding of the differences between microbiological taxonomy, especially those of viruses and bacteria. These campaigns show signs of success. For example, there is growing acceptance among healthcare workers and the public that a sore throat caused by a virus is a self-limiting illness that should no longer be treated with antibiotics, but a 'Strep' throat may be. Would this advance have been achieved if all sore throats had been described as 'throat bugs'? Compare this to our subtle acceptance of the phrase 'tummy bug' as a catch-all term and our consternation when it is replaced by the '*E. coli* virus'.

Clearly, a tension does exist when communicating with the public. Describing detailed and complex scientific concepts in a straightforward manner while maintaining integrity and accuracy is a challenge. However, I would argue that, as a scientific community, we are not meeting this challenge by our reliance on the term 'bug'. Instead, at the very least, as an umbrella term to describe any member of the microbiological kingdoms we should replace 'bug' with 'microbe' and instantly remove the confusion associated with illness, insect, annoyance and listening device. In fact, I would like to suggest that if we know our microbe's kingdom, its phylogeny or its classification then let's be bold and accurate, and use that instead. I agree that it will take a few more characters on the keyboard, a renewed confidence in the public's scientific literacy, as well as an additional clarity of thought from within the community of microbiologists. However, a positive outcome as far as I am concerned is that replacing the indiscriminate use of 'bug' with clearer and more accurate terminology will reduce the microbial confusion that is bugging me!

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