



Private prescription:

A thought-provoking tonic on the lighter side

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Please note that these are the personal opinions of the author and do not necessarily represent those of AstraZeneca.

Microbes, viruses and verse – microbial musings

In recent articles for this column [1,2], I have extolled the use of poetry and verse in scientific communication. While researching a collection of quotations for the pharmaceutical scientist, I was amazed at the quantity of verse that had been written about microbes, bacteria and viruses over the past century. An interesting feature was that, not surprisingly, it mirrored the growth in the knowledge of the subject.

Early verse

The verse written in the latter part of the 19th century was generally concerned with the observation of the microbe using light microscopy. For instance, in his *Ode to the Bacillus*, William Helmuth, an American surgeon, wrote in 1879 [3]:

'Oh, powerful bacillus,
With wonder how they fill us,
Every day!
While medical detectives,
With powerful objectives,
Watch your play.'

The expression of wonder is not really surprising since Helmuth was writing at a time of Koch's discovery of *Bacillus anthracis* in 1876, and Neisser's discovery

of *Neisseria gonorrhoea* in 1879. Similar sentiments are found in Hilaire Belloc's poem *The Microbe* written in 1897 [4]:

'The microbe is so very small
You cannot make him out at all,
But many sanguine people hope
To see him through a microscope.
His jointed tongue that lies beneath
A hundred curious rows of teeth;
His seven tufted tails with lots
Of lovely pink and purple spots,
On each of which a pattern stands,
Composed of forty separate bands;
His eyebrows of a tender green;
All these have never yet been seen.
But scientists who ought to know,
Assure us that it must be so...
Oh, let us never, never doubt
What nobody is sure about!'

Without the last four lines this poem would have been regarded as frivolous and whimsical, but Belloc's final sarcastic comment makes it noteworthy. It would appear that scientists were distrusted as much then as they are now!

The golden age

The early part of the 20th century was the golden age of microbiology with the

discovery of all the major pathogens, the acceptance of the role of microbes in the transmission of disease and the development of new therapies and public health. Two doggerels that reflect this are: first, one written by Humbert Wolfe in 1927 [5]:

'The doctor lives by chicken-pox,
by measles and by mumps.
He keeps a microbe in a box,
and cheers him when he jumps.'

And second, one written by William Juniper in 1933 [6]:

'And if from man's vile art I flee
And drink pure water from the pump,
I gulp down infusoria
And quarts of raw bacteria
And hideous rotatorae,
And wriggling polygastricae,
And slimy diatomacae
And various animalculae
Of middle, high and low degree.'

This poem certainly exemplifies one of the most fascinating and attractive aspects of the microbial world, namely its extraordinary diversity, but I suspect the writer was not a microbiologist.

'Microbiology can be fun and verse can be a fun way of communication'

Streptococci

The only bacterium named in verse has been *Streptococcus* and two doggerels have been written about the genus; the first by Wallace Wilson in his *Parody of Coleridge's Ancient Mariner* [7]:

'He prayest best who loveth best
All creatures great and small.
The *Streptococcus* is the test
I love him least of all.'

The second by Frank Loesser in his *Adelaide's Lament* from the musical *Guys and Dolls* [8]:

'It says here in this book
The average unmarried female,
basically insecure
Due to some long frustration may
react
With psychosomatic symptoms
difficult to endure
Affecting the upper respiratory tract.
In other words just from waiting
around for that plain little band
of gold
A person can develop a cold
You can spray her wherever you
figure the *Streptococci* lurk
You can give her shot for whatever
she's got
But it just won't work
If she's tired of getting that fish-eye
from the hotel clerk
A person can develop a cold.'

Both these were written in the mid-20th century and reflect what was then known of the genus and its association with upper respiratory tract infections. Why *Streptococcus* is more favoured than any other bacterium is open to debate. It is probably because upper respiratory tract infections and the common cold are so common and are seen as the bane of human existence.

Viruses

By the 1950s, it was clear that some diseases were caused by particles an order of magnitude smaller than bacteria, beyond the resolution of the light microscope. These viruses were also known to consist solely of nucleic acids and proteins and could only reproduce in living cells. Over the next couple of decades the mode of replication for many of the viruses was discovered. The parasitic behaviour of viruses, their size and replication are aptly and succinctly described by Michael Newman [9]:



'Observe this virus: think how small
Its arsenal, and yet how loud its call;
It took my cell, now takes your cell,
And when it leaves will take our
genes as well.'

As can be seen, verse can provide some interesting insights into microbiology. The majority of the verse is in the form of doggerels providing a rich source of comedy and satire in a subject area many would find dull and certainly not humorous. Admittedly some of the verse is frivolous and in no way can be called science but it does express sentiments that should be understandable to both scientists and non-scientists alike. Anything that can be done to increase popular interest in the subject must be worth the effort. Scientists should not be hesitant about committing their thoughts to paper in such a format. Microbiology can be fun and verse can be a fun way of communication.

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