

# Culture

## Culture – A Short History

David Post

Founding member of the Culture Editorial Board


Culture has been publishing expert reviews for those interested to learn about areas of microbiology outside their immediate concerns for over 35 years. From the outset it was important that Culture became known for its science content and the publication has continued to track advances in microbiology until the present day. Various modifications to style occurred over the years but always this original concept was retained; this has been remarked on many times and is undoubtedly a reason for its success.

With this issue Culture enters the era of electronic publication under new editorial arrangements. This gives an opportunity to look back to its origin and highlight subjects it has covered since the publication of volume 1, number 1 in 1979.

First invitations to contribute were sent in 1978 for publication the following year. These were to Dr. Martin Skirrow for a seminal piece on the role of *Campylobacter* in enteritis, and to Mr. Ken Phillips of Luton Public Health Laboratory whose work on selective culture media for anaerobic organisms helped establish the importance of non-sporing anaerobes in infections of humans.

Glancing through past issues has shown how Culture tracked advances in microbiology from 1978 until the present day. Reflecting its importance, there were papers on *Campylobacter* in 1981, 1988, 1996 and 2004. The second issue in September of 1979 included a paper by Dr. J.G. Davis reviewing improvements to microbiological control in the dairy industry. Subsequently there were other papers covering food hygiene and preservation including one describing the state of the science before 1950 and predicting how it might become in the 1980s; it is fascinating to read it now.

Following the recognition in the USA of *Legionella* as the cause of a new respiratory disease, a Culture article by J. Fallon in 1979 was followed by another from Dr. Julian Dennis in 1986 on isolation of the organism from the environment. Other papers published included those on *Listeria* and *Clostridium difficile*, after



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## Campylobacters and enteritis

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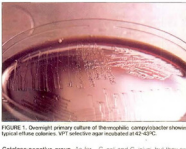
The recent emergence of campylobacters as a cause of enteritis might be regarded as serendipity in an environment in which medical microbiology is a well established discipline. Organisms that were thought to be extremely rare in man have suddenly become common, and yet we know little about the factors that cause or their epidemiology. The discovery that campylobacters have the ability to be cultured in a medium that is not only anaerobic but also contains a high concentration of bile salts, and that they are motile, has opened up a new field of research. This has led to the identification of a number of species, and the discovery that they are pathogenic to man. The first of these, *Campylobacter jejuni*, was first isolated in 1973 by the late Professor J. G. Davis and his colleagues in Brighton. It is now generally accepted that after the publication of Skirrow's paper in 1979, the significance of this organism was appreciated, and the publication of Skirrow's paper in 1979 was made to Butler and his colleagues in Brighton in 1973 but the significance of their work was not generally appreciated until after the publication of Skirrow's paper in 1979.

**Classification of Campylobacters**

The first campylobacters isolated in 1979 were organisms that were motile, anaerobic, and fastidious, and because they were associated with infectious enteritis and abortion in cattle and sheep, they were called "blue-bird" during the early years of their study. The first member of this genus, *Campylobacter jejuni*, was first isolated in 1973 by the late Professor J. G. Davis and his colleagues in Brighton. It is now generally accepted that after the publication of Skirrow's paper in 1979, the significance of this organism was appreciated, and the publication of Skirrow's paper in 1979 was made to Butler and his colleagues in Brighton in 1973 but the significance of their work was not generally appreciated until after the publication of Skirrow's paper in 1979.

**Campylobacter enteritis**

In 1979, Skirrow reported that the organism was the cause of enteritis in a number of patients. This was followed by a number of other reports, and it is now generally accepted that campylobacter enteritis is a common cause of acute infectious enteritis in man. The organism is also a common cause of enteritis in other animals, particularly in cattle and sheep, but the epidemiology of campylobacter enteritis in man is still unclear. It is thought that the organism is spread by contact with the faeces of other animals, but the exact mode of transmission is still unclear. The organism is also a common cause of enteritis in other animals, particularly in cattle and sheep, but the epidemiology of campylobacter enteritis in man is still unclear. It is thought that the organism is spread by contact with the faeces of other animals, but the exact mode of transmission is still unclear.



**Figure 1** - Diagrammatic representation of the structure of *Campylobacter jejuni*. The organism is a curved, motile, anaerobic, fastidious, Gram-negative bacillus. It is characterized by its characteristic "seagull" shape, and its motility is due to the presence of flagella at one end. The organism is also characterized by its ability to be cultured in a medium that is not only anaerobic but also contains a high concentration of bile salts.

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**Table 1** - Classification of Campylobacters based on Serotype

Organism	Serotype	Section	Pathic	Disease
<i>Campylobacter jejuni</i>	O:1,6	A	+	Enteritis
<i>Campylobacter coli</i>	O:5	B	+	Enteritis
<i>Campylobacter fetus</i>	O:13	C	+	Enteritis
<i>Campylobacter lari</i>	O:14	D	+	Enteritis
<i>Campylobacter sputorum</i>	O:15	E	+	Enteritis
<i>Campylobacter hyointestinalis</i>	O:16	F	+	Enteritis
<i>Campylobacter lari</i>	O:17	G	+	Enteritis
<i>Campylobacter coli</i>	O:18	H	+	Enteritis
<i>Campylobacter coli</i>	O:19	I	+	Enteritis
<i>Campylobacter coli</i>	O:20	J	+	Enteritis
<i>Campylobacter coli</i>	O:21	K	+	Enteritis
<i>Campylobacter coli</i>	O:22	L	+	Enteritis
<i>Campylobacter coli</i>	O:23	M	+	Enteritis
<i>Campylobacter coli</i>	O:24	N	+	Enteritis
<i>Campylobacter coli</i>	O:25	O	+	Enteritis
<i>Campylobacter coli</i>	O:26	P	+	Enteritis
<i>Campylobacter coli</i>	O:27	Q	+	Enteritis
<i>Campylobacter coli</i>	O:28	R	+	Enteritis
<i>Campylobacter coli</i>	O:29	S	+	Enteritis
<i>Campylobacter coli</i>	O:30	T	+	Enteritis
<i>Campylobacter coli</i>	O:31	U	+	Enteritis
<i>Campylobacter coli</i>	O:32	V	+	Enteritis
<i>Campylobacter coli</i>	O:33	W	+	Enteritis
<i>Campylobacter coli</i>	O:34	X	+	Enteritis
<i>Campylobacter coli</i>	O:35	Y	+	Enteritis
<i>Campylobacter coli</i>	O:36	Z	+	Enteritis

The cover of the first issue of Culture in 1979 with a seminal piece on the role of *Campylobacter* in enteritis by Dr. Martin Skirrow.

the importance of these organisms as human pathogens became ever more apparent. Problems of antibiotic resistance, increasing knowledge of *E. coli* as an enteric pathogen and the association of tuberculosis with HIV infection, have also been featured. The epidemic of the cattle disease Bovine Spongiform Encephalopathy (BSE) led to a paper about the causative agent, prions, in 1990. An issue in 1981 detailing the early attempts to automate microbiology contrasts with the current situation in many laboratories today. Much more recently, in 2011, the importance and role of biofilms and cell signalling was reviewed by Alexander Rickard and his colleagues at the University of Michigan.

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The epidemic of the cattle disease Bovine Spongiform Encephalopathy (BSE) led to focus on the causative agent, prions, in 1990.

Eric Bridson contributed a series about pioneers of microbiology, providing valuable insights into the origins of the science and the foundations of where it is today. Some subjects covered, such as *Aeromonas* and *Yersinia* did not achieve as great importance as human pathogens as it was once thought they would.

Special anniversary issues were published in 1999, 2004 and 2009, to mark 21, 25 and 30 years respectively. Professor Grahame Gould was a guest editor for the 25<sup>th</sup> year anniversary edition, with the theme of food microbiology and Professor Ian Philips for the 30<sup>th</sup> year edition which covered aspects of antimicrobial therapy and resistance. Professor Grahame Gould subsequently joined the editorial board as a permanent member.



Culture celebrated 25 and 30 years of publication with editions on key areas of food microbiology and infectious disease respectively.

As it stands today, Dr. Peter Stephens, now Director of Culture Media and AST R&D, holds the title for the longest standing member of the editorial board, with select representatives from R&D and Marketing injecting a fresh approach to Culture moving forward.

This personal overview of the history of Culture shows how it has comprehensively covered many of the most important events in microbiology over the past thirty years, with the strong ethos of superb scientific content underpinning every issue. In its future guise, Culture will continue to hold this ethos and knowledge of its roots, ensuring an interesting read for all and most importantly, scientific excellence. I wish them all the very best.

The complete Culture back catalogue is available to browse at: [thermoscientific.com/culture-reviews](http://thermoscientific.com/culture-reviews)

## Acknowledgements

**Author:** David Post

David Post, former Oxoid Technical Support Manager, was a founding member of the Culture Editorial Board, continuing to serve as a board member until 2013.



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