Comment

The importance of veterinary microbiology: the role of the SGM

Many current infectious disease scares involve animal hosts as in SARS/vCJD or the animals themselves, as in BSE or foot-and-mouth disease. Expertise is required to deal with these outbreaks, which not only cause suffering but can have severe social and economic consequences. Veterinary microbiology has never been more important, but does it receive enough support?

Animal diseases have been recognized since antiquity as significant threats to human health. Since the time of Pasteur's pioneering work on anthrax and rabies, there can be little doubt that the study of infectious agents of animals has been used to great effect in informing our understanding of human transmissible disease. Yet there is considerable disquiet as to the present state of veterinary microbiology as manifested by the difficulty in persuading veterinarians and science graduates to adopt a career in animal infectious disease, coupled with a perception that fundamental questions of pathogenesis can be best answered by studying human infections. Recently, The House of Lords Select Committee on Science and Technology* has served to focus attention on the acute need for enhancing capacity in veterinary microbiology, emphasizing that we neglect the study of animal sources of infection at our peril.

As part of this strengthening process, it is clearly necessary both to gather information about infections in humans and to set this in the context of the increasing relevance of zoonoses and food-borne disease to human health, as well as to the animal populations with which we share this planet. We must also rekindle in the wider microbiology community a fascination and enthusiasm for agents which are often more accessible for study, offer fresh insights into the disease process, and may have a serious economic impact. It is thus timely that this issue of *Microbiology Today* carries several very interesting articles on new agents of wild animals and zoonotic infections. Since 1970, previously unrecognized agents have emerged as significant threats to human and animal health at an average rate of nearly one a year, most of which are proven, or likely to be proven, as zoonoses. The list is now extensive, and includes BSE, vCJD, Ebola, HIV, Lyme Disease, Legionnaire's Disease, Nipah and Hendra viruses. Others have adopted new mantles or new habitats, such as *E.coli* O157 and West Nile virus.

The concern over zoonoses is not confined to wild animals. Companion animals increasingly are implicated in the transmission of diseases to humans, such as cat scratch fever, monkey pox, salmonelloses, psittacoses and *Campylobacter*. West Nile virus has now become a major disease of equines in the USA. The keeping of exotic pets has increased sharply over the last decade, offering further opportunities for zoonotic spread of pathogens that are, as yet, unrecognized.

Effective surveillance and control of animal disease requires the mobilization of a wide spectrum of microbiological knowledge. Engaging expertise in the wider academic, research and commercial communities not only increases the knowledge base but adds value to individual contributions through communications and collaboration. This relationship is sorely lacking in the UK and in many other countries. For example, the technology used for serodiagnosis of foot and mouth disease virus during the 2002 UK outbreak compares poorly with the sophistication and sensitivity of tests used for the screening of human blood for infectious agents. Comparative study of microbes across species adds substantially to the knowledge base by providing clues as to the drivers of genetic diversity, pathogenesis and how more effective vaccines may be developed. A notable example is the work on influenza viruses of humans, birds, animals and fish.

SGM Council is currently considering how best it may serve veterinary microbiologists, in the belief that it is ideally placed to foster close interactions between the wider community and those with a specific interest in animal infectious diseases. We believe that international collaboration is vital, particularly by forging links with the developing world where epidemics amongst farmed animals and wildlife, if left uncontrolled, can have a devastating impact. Aquaculture should not be forgotten as this is an increasingly important sector of food production. Training and continuing professional development needs for veterinarians and microbiologists employed by Government, universities, institutes and industry must be developed and tailored to meet current requirements. The SGM can and should be playing a pivotal role and we would be pleased to receive suggestions and comments as to the way forward. Please send these to Janet Hurst at Marlborough House (email j.hurst@sgm.ac.uk; Tel. 0118 988 1809).

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'Fighting Infection' published by the House of Lords Select Committee on Science and Technology (2003) is available at* ***www.parliament.uk/hlscience*

● Please note that views expressed in *Comment* do not necessarily reflect official policy of the SGM Council.