

Important Essay on the History of One Medicine published in the United Kingdom (soon to be published in the USA): Contained within "The Oxford Handbook of the History of Medicine"

Medicine and Species: One Medicine, One History?

University librarians may well be interested in *The Oxford Handbook of the History of Medicine*, already available in the United Kingdom and to be published in the United States on November 1st, 2011. Although expensive at \$150, this innovative 672 page survey edited by Mark Jackson, contains an important essay by Robert G. W. Kirk and Michael Worboys, "Medicine and Species: One Medicine, One History?" which proposes "re-conceiving medicine as a set of knowledge-practices grounded in interspecies interactions." In brief, the authors (a Wellcome Research Fellow and the Director of the Centre for the History of Science, Technology and Medicine at the University of Manchester) contend that the history of medicine "should become *the history of one medicine*" because of "the complex interactions between species that have been present throughout history".

Intriguingly, the case for unifying human and animal medicine begins in ancient Egypt with its focus on preserving "the health of large animals due to their religious and economic value within a predominant 'cattle culture', producing practices that were subsequently applied to humans". Although the dissection of animals has been viewed in many societies as a means of gaining knowledge about the human body, the history of disease interactions of animals and humans has remained largely unexplored. Furthermore, the strict professional separation of human and animal medicine did not begin until around 1800, linked with the ascendance of hospitals as sites for human medical training, while veterinarians continued to work largely in yards and stables.

When the organized veterinary profession did emerge in the late nineteenth century, the focus was on the horse, especially in a military context, with a subsequent interest in prolonging equine life on wealthy estates and for use in agriculture, industry and transport. At the same time, within the nascent public health movement there were opposing views of various animals, especially swine, as either carriers of disease or attractive sources of essential meat for human consumption. Meanwhile, one area in which interspecies interaction was widely practiced until the middle of the nineteenth century was the use of leeches to draw blood from those who were ill in the mistaken belief that such a 'therapeutic' practice would promote human health.

Although Kirk and Worboys focus on trends rather than personalities, there is mention of the work of Edward Jenner (1749-1823) with cows and cowpox leading to the smallpox vaccination, the pioneering investigations of Claude Bernard (1813-1878) grounded in the study of keeping experimental animals alive, the reproduction of disease in susceptible animals by Robert Koch (1843-1910) and his fellow workers leading to his "postulates", as well as the manner in which the biomedical experiments of Louis Pasteur (1822-1895) were based upon continuing inoculations of different animals. It is pointed out that Pasteur's development of a rabies vaccine which was "produced in rabbits, tested on dogs, and used clinically with humans" was arguably "the first 'medical breakthrough' of the modern era".

The use of animals in the laboratory is linked with "the commercialisation of vaccines, antisera, and antitoxins" as part of "the industrialization of laboratory practices". In this context, credit is given to Bill Bynam and Roy Porter's 1992

Companion Encyclopedia of the History of Medicine with its over seventy essays that sketched an important foray into the history of medicine, especially Bynam's own analysis of how germ theories "linked human medicine inextricably with animals".

A few pioneering doctors such as William Osler (1849-1919) recognized the interdependency of human and animal medicine. However, even today we often forget how the discovery of vitamins, hormones and insulin have all "depended upon animals as source, mode of understanding, mode of production, and standardization in an analogous yet contextually different way to that of vaccines". Furthermore, Kirk and Worboys note the deficiencies of the contemporary laboratory in which "the health and welfare of animals has been delegated to animal technicians under the guise of veterinary expertise, leaving biomedical research scientists to pursue their object of study often at a molecular level that transcends any notion of species", with the result that "twentieth-century animal medicine developed more as a handmaiden to the pursuit of human medicine than for the needs of the animals in themselves".

Increasingly, the earlier divide between animal and human medicine is being bridged by the concept and implementation of "One Medicine, One Health," especially with the helpful funding of the British Wellcome Trust, the American Rockefeller Foundation, and a number of government and other philanthropic organizations. Kirk and Worboys lay down the challenge that it is only with the full implementation of the "One Medicine, One Health" perspective that we can "properly understand medicine's role in making up who we have been, are, and are yet to be". This essay deserves a much wider readership than it is likely to receive as the thirty-first essay among thirty-four.

Review provided to One Health Initiative Website September 6, 2011 by:

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