Television review

Walking tall, not talking heads

Walking with Cavemen
Executive producer and director
Richard Dale
A BBC/Discovery Channel/ProSieban co-production

Clive Gamble

How many TV series can claim that all human life is here? *Walking with Cavemen*, the third outing for the BBC's immensely popular format of wildlife documentary, computer-generated images, animatronics and stunning locations, can do just that. It ranges in time from 4 million to a mere 30,000 years ago. In four 30-minute programmes, the first of which was aired in Britain on 27 March on BBC1 and which will be shown on the Discovery Channel in June, it shows us nine hominid species, including ourselves, doing what we have always done best: eating, flirting, mothering, shouting and banging rocks and heads together.

Actors play the cast of hominids. At times it seems we have strayed into the UK House of Commons. There is the 'quiet one', *Australopithecus afarensis*, and a very excitable, even reckless, *Homo habilis* with a splendid set of Victorian sideburns. They scream at each other from different trees in the savannah while the docile vegetarians *Paranthropus boisei* lie deep in the reeds, where they become extinct.

Presenter Robert Winston sums up the aim of the series: "By watching their everyday lives closely we can see the seeds of humanity developing in these apemen and also we can see how much of the apeman remains alive in us." *Walking with Dinosaurs* was criticized for mixing up fact with speculation, particularly the sounds and colours of the beasts, for which there is scant evidence. The inclusion of Professor Winston as a Dr Who of human evolution, travelling through time to meet our ancestors, neatly defuses this charge. Instead we are allowed to reflect on our fragile humanity by visiting our distant relatives as they played out their equally small lives without the encumbrances of modern living.

Winston closely observes these unruly ancestors. He even tells a joke to a Neanderthal family. Their silence is stony. The point of the joke is to show that their brains were not yet wired for imagination. A brave scientific assumption as they had spent the morning pushing boulders over cliffs onto unsuspecting mammoths.

Of course I can quibble about details. Why was *Homo ergaster* white- not black-skinned? Couldn't Neanderthals make themselves a decent pair of boots? Monogamy has never been the norm, and language could be more recent than is depicted. But such criticisms miss the point. Scheduled for BBC1, a mainstream channel, this series is not about the debate over human evolution where the 'probablys' and 'how do you know?' are expected. That is for more specialist channels, such as BBC2 and Channel 4. This series is about drawing in a new and much larger audience to the scientific excitement and contemporary importance of asking where we came from. The programme's makers have succeeded precisely because the series' driving force is drama rather than debate.

How we represent the past, especially the deep past, has always been problematic. Stephanie Moser, in her excellent dissection of the iconography of human origins (*Ancestral Images*, Sutton Publishing, 1998), reminds us that the familiar images of cavemen are ways of expressing arguments that are difficult to put into words. Archaeologists have always borrowed from much older traditions of depicting outsiders, such as club-wielding wildmen, to make our ancestors scientifically believable. *Walking with Cavemen* provides a new slant on those vital, visual arguments. Raquel Welch and her million-year-old dinosaurs, Stanley Kubrick and the apemen of *2001*, eat your heart out! ■

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BBC

Metamorphosis: *Homo sapiens* gets a makeover as *Homo ergaster*.

Practical proteomics

Proteins and Proteomics: A Laboratory Manual
by Richard J. Simpson
Cold Spring Harbor Laboratory Press: 2003. 926 pp. $250 (hbk), $185 (pbk)

Stephen Oliver

We now have the complete sequences of a large number of genomes at our disposal. Each of these provides us with a complete inventory of the working parts of an organism's cells. The difficult bit is discovering what all these working parts do. Functional genomics is all about the analysis of gene action and interaction on a genome-wide scale. Four levels of analysis are commonly exploited: genes (the genome), messenger RNA (the transcriptome), proteins (the proteome) and metabolites (the metabolome). Although the genome is relatively constant, the complement of the other 'omes' changes with the physiological, developmental or pathological state of the organism.

Proteomics is probably the most important, but it is also the most difficult to study in a comprehensive manner. One reason for this is that the proteome is multidimensional: a single gene can specify a number of different protein products that may themselves be modified post-translationally by the covalent attachment of a range of functional groups. Moreover, proteins commonly occur in complexes whose composition and conformation have a profound effect on both their activity and their stability. Proteomics attempts to grapple with this complexity by using a vast range of molecular, chemical and genetic techniques.

This superb volume embraces this diversity and, even if proteomic techniques are far from comprehensive in their scope, this weighty tome is certainly comprehensive in its description of them. Everything is here, from detailed laboratory protocols to clear explanations of the theoretical basis of the methods used. The book is as up-to-date as possible. It is peppered with references from 2002, and deals fully with recent technical advances, such as protein microarrays.

Richard Simpson even manages to slip in bits of history, such as the derivation of the name Coomassie for the blue dye used to stain proteins in gels. (It was named to commemorate the British conquest of Kumasie — the capital of the Ashanti, in what is now Ghana — and was originally used to dye woollen jumpers.) Such nuggets make this volume more than just an excellent laboratory manual; it is also a book to dip into and enjoy. ■

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