

Cirencester Science & Technology Society

The May lecture given by Dr. Bill Amos, Reader in Evolutionary Genetics at Cambridge University, had the intriguing title of 'Genetic Fortune Telling'.

His background studies, ranging from a Ph.D on greenfly to DNA fingerprinting of whales and seals, also suggested we were in for a fascinating experience and he did not disappoint us.

The basis of his current work is to try to establish how much the future and lifespan of individuals, of whatever species, can be determined by their genetic make-up as opposed to the environmental influences to which they are subjected.

This 'Nature v Nurture' investigation has led him to a working hypothesis, backed up by many hours of detailed testing and analysis carried out mainly by his students, that not only does the genetic make-up of individuals have considerable influence on their success in breeding and susceptibility to disease but that, more specifically, a heterozygotic genetic make-up gives considerable advantages over the homozygotic state.

An example of this is that those individuals with double dominant and double recessive haemoglobin genes are much more likely to die earlier, the first due to susceptibility to Malaria and the second due to Sickle Cell Anaemia, compared to those with a mixed dominant/recessive gene structure.

Another study of a large number of Kenyan children showed that about 50% of infant deaths could be predicted by their genetic make-up, but that more money is needed to fund a much more extensive study which could produce a radical redirection in the method of treatment.

Such a change in thinking might be needed by the Dutch government who, having invested a large amount of money in setting up a seal treatment centre, could be releasing back into the wild animals which have a greater susceptibility to re-infection by the diseases for which they had been treated and in so doing proliferating the spread of those diseases.

Altogether then an intriguing and fascinating subject, for which Dr. Amos produced considerable data, suggesting that we are just on the threshold of a whole new slant on how our genetic make-up can influence and be used to predict our fortunes and how it could radically affect treatment in the future.