

In the news

VIRUS-HUNTER GATHERERS

They may have met during an ice age but relations between early humans and their evolutionary cousins were anything but frosty. It seems that humans acquired MHC class I genes by mating with Neanderthals and another ancient people, the Denisovans.

Researchers led by Peter Parham of Stanford University, California, USA, found that non-African humans share HLA genes with Neanderthals and Denisovans. The scientists believe that when humans spread out of Africa, interbreeding allowed them to pilfer protective genes from these now-extinct populations, who had already adapted to viruses and other pathogens in the local environment. “The cross breeding wasn’t just a random event,” says Parham, “it gave something useful to the gene pool” (*CBC News*, 26 Aug 2011).

Indeed, certain ancient HLA alleles are remarkably frequent in modern humans. Neanderthal genes are thought to account for less than 6% of the genome in non-African humans. But, for one class of HLA genes, over 50% of the variants in Europeans and 80% in Asians originate from Neanderthals and Denisovans. As paleoanthropologist Milford Wolpoff puts it, “If canoodling was the whole story, that’s an awful lot of genes” (*Independent*, 27 Aug 2011).

Not everyone is convinced of the legitimacy of these ancient affairs. According to evolutionary biologist Rob Brooks, humans may have acquired the MHC genes “by any number of roots” (*ABC Online*, 26 Aug 2011). And could this have been a dangerous liaison? Human HLA alleles that are associated with autoimmune diseases were present in Denisovans. Study co-author Paul Norman proposes that when we acquired those genes “we weren’t kind of prepared for them, we hadn’t grown up with them ... they can start to attack us as well as the viruses” (*Today Online*, 27 Aug 2011).

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