DISCOVERING THE ORIGINS OF CHARLES DARWIN

Genographic Project's DNA Test Reveals Charles Darwin's Ancestors’ Migratory Journey; Gives Insight into Deep Ancestry of Scientist Who Developed Theory of Natural Selection

SYDNEY (Feb. 4, 2010)—It is something that Charles Darwin himself may never have imagined. The man who penned “On the Origin of Species”, the seminal work that hypothesised that all humans evolved from common ancestors, could now discover his own “human deep ancestry”.

Today, 200 years after his birth, DNA technology has helped determine who Darwin’s ancient ancestors were. Darwin’s great-great-grandson, Chris Darwin, 48, who lives in the Blue Mountains near Sydney, took a Genographic Project public participation cheek swab test analysing his “Y” chromosome. According to Dr. Spencer Wells, project director of the Genographic Project, a research partnership between National Geographic and IBM with field support from the Waitt Family Foundation, Darwin’s deep ancestry shows his ancestors left Africa around 45,000 years ago.

“I couldn’t wait to find out my family’s deep ancestry. I suspect that most people would be fascinated to know their family history over the past 60,000 years. After all, how can you understand who you really are, if you don’t know where you have come from?”, Chris Darwin said.

The test revealed that Chris Darwin, and therefore his paternal great-great-grandfather, Charles Darwin, are from Haplogroup R1b, one of the most common European male lineages.

“Approximately 70 percent of men in southern England belong to Haplogroup R1b, and in parts of Ireland and Spain that number exceeds 90 percent”, Wells said.

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The Genographic Project’s test results show that Darwin’s paternal ancestors would have migrated out of northeast Africa to the Middle East or North Africa around 45,000 years ago. Diverging from this Middle Eastern clan, a new lineage emerged in a man around 40,000 years ago in Iran or southern Central Asia. Before heading west towards Europe, the next mutation, which defined a new lineage, appeared in a man around 35,000 years ago. Men belonging to Haplogroup R1b are direct descendants of the Cro-Magnon people who, beginning 30,000 years ago, dominated the human expansion into Europe and heralded the demise of the Neanderthal species.

Chris Darwin, son of George (known as Erasmus), grandson of William (Billy) and great-grandson of the astronomer George, who was one of Charles Darwin’s 10 children with Emma Wedgwood, migrated to Australia from England in 1986. A Blue Mountains guide and adventurer, (Chris often takes tourists on the Charles Darwin walk through the mountains to Wentworth Falls), Chris said that he was excited to find out his family’s true history.

The Genographic team also tested Darwin’s mitochondrial DNA to provide an insight into his mother’s genetic heritage. The result shows Darwin is part of Haplogroup K — and likely directly descended from the women who crossed the rugged Caucasus mountains in southern Russia to reach the steppes of the Black Sea.

“What National Geographic and IBM are doing with the Genographic Project is incredibly important. The project is one way to show us the true story of humanity, of how we migrated across the world and that we are all related, tracing back to a small group of men and women who lived in Africa”, Darwin said. “There are over 100 direct descendents of Charles Darwin who attended a family reunion in London last March”, he continued. “I can’t wait to share this with them”.

The Genographic Project seeks to chart new knowledge about the migratory history of the human species and answer age-old questions surrounding the genetic diversity of humanity. At the core of the project is a global consortium of 11 regional scientific teams following an ethical and scientific framework and who are responsible for sample collection and analysis in their respective regions.

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Members of the public can participate in the project by purchasing a public participation kit (US $100) from the Genographic Web site (www.genographic.com), where they can also choose to donate their genetic results to the expanding database. Sales of the kits help fund research and support a Legacy Fund for indigenous and traditional peoples’ community-led language revitalization and cultural projects.

The Genographic Project's consortium including the principal investigators from around the world are in Sydney this week for their annual scientific conference. Among the population geneticists are Australian principal investigator, Assoc. Professor John Mitchell from La Trobe University in Melbourne, and Professor Alan Cooper, who heads up the Ancient DNA Centre at Adelaide University, as well as Sydney-based ethicist, Dr. Simon Longstaff, who chairs the global advisory board for the project.

There are currently 265,000 public participants who have actively consented to be included in the scientific database. “With the quantity of data and new methods of analysis that the Genographic Project team at IBM are pioneering, we are able to deliver insights into our past that were simply not possible before,” said Dr. Ajay Royyuru, the leader of IBM’s computational biology team.

Today’s announcement of Darwin’s deep ancestry was held at the Australian Museum in Sydney where a panel of Genographic scientists, including Wells, Royyuru, Mitchell and Longstaff, also gave a public presentation. A project exhibit, sponsored by IBM, details the three key elements of the project — field science, public participation and the Genographic Project’s Legacy Fund, which benefits cultural preservation and education projects in indigenous communities around the world. The exhibit will be on display at the Australian Museum until the end of February 2010. Genographic Public Participation kits also will be on sale at the Australian Museum during February.

Images:
Photographs of Chris Darwin swabbing his cheek and other Genographic Project images are available: ftp://ngsftp1/genotemp/press/ username: genopress; password: g3n0pr3s5.

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