

# THE GENOGRAPHIC PROJECT VISITS HAIGAZIAN UNIVERSITY<sup>1</sup>

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Where do we really come from? And how did we get to where we live today?<sup>2</sup>

Many DNA studies suggest that all humans today descend from a group of African ancestors who—about 60,000 years ago—began a remarkable journey. The Genographic Project is seeking to chart new knowledge about the migratory history of the human species by using sophisticated laboratory and computer analysis of DNA contributed by hundreds of thousands of people from around the world. In this unprecedented and real-time research effort, the Genographic Project is closing the gaps of what science knows today about humankind's ancient migration stories.

DNA studies have permitted scientists to categorize all humans on Earth in genealogical groups sharing one common ancestor at one given point in prehistory. They are called haplogroups.

Y-DNA haplogroups are useful to determine whether two apparently unrelated individuals sharing the same surname do, indeed, descend from a common ancestor in a not too distant past (400 to a couple of thousand years back).

Human Y chromosomes are male-specific sex chromosomes; nearly all humans that possess a Y chromosome will be morphologically male. Because the X and Y chromosomes are so different in size, they do not engage in crossing over or recombination during cell division, so their genes are not mixed up. This means that men pass their Y-chromosome on unchanged from father to son, down through the generations (except for rare mutations). Rare mutations are derived from copying mistakes. When the DNA is copied it is possible that a single mistake occurs in the DNA sequence; these single mistakes are called single nucleotide polymorphisms (SNPs). These SNPs are used in order to reveal the haplogroup of each male. The haplogroups are the major branches on the Y chromosome tree defined by SNPs which have accumulated with time and which become markers for male lineages.

Located in Asia Minor, Armenia borders Turkey to the west, Georgia to the north, Azerbaijan (including the disputed Nagorno Karabagh region) to the east and southwest, and Iran to the south. The historical Armenian kingdom once extended into northeast Turkey and northwest Iran, from the Caspian to the Mediterranean seas. Armenia was located at the center of what has been called the "cradle of civilization." Because it was situated between Eastern and Western civilizations, the country was continually caught in the turmoil of war. At the same time, however, its seat astride trade and migration routes between Europe and Asia Minor allowed goods and ideas to pass frequently through the land. For most of



the period from the first century A.D. to the present day Armenia has been subject to the hegemony of more powerful neighbors. External powers that have ruled or exerted dominant political influence over Armenia include the Romans, Parthians (and later Persians), Byzantium, Seljuk Turks, Mongols (thirteenth to early fifteenth centuries), the Ottoman and Russian Empires, and most recently (until 1991) the Soviet Union. Forced and voluntary dispersions over the years have led to a large worldwide Armenian diaspora including in Lebanon.

Armenia has been little-studied genetically even though it is situated in an important area with respect to theories of ancient Middle Eastern population expansion and the spread of Indo-European languages.

As part of the Genographic project effort and because of particular interest in Armenian lineage/heritage, part of the Lebanese population, we visited Haigazian University in Beirut on March 24 in 2009. We were helped by the administration, who actively encouraged the students and staff to participate in the study and, thanks to the students' scientific curiosity and enthusiasm, we were able to collect enough male samples to add to our pre-existing 100 samples to draw a map of the male genetic lineage of Lebanese Armenians. At Haigazian we collected samples from 54 males and 42 females.

Our experiments and analysis<sup>3</sup> showed that the non-Armenian Lebanese and Armenian Lebanese communities both share the same major haplogroup, which is J2 (28.9% and 28.1%, respectively). Haplogroup J2 is mainly found in the Northern Fertile Crescent, the Mediterranean, Iran, Central Asia, and Southern Europe and is associated with Phoenician commercial and colonial activities. J2 subclades are also found in the South Caucasus (Georgia, Armenia, Azerbaijan), Iran, Central Asia, and South Asia. This suggests that, if the occurrence of Haplogroup J among modern populations of Europe, Central Asia, and South Asia does reflect Neolithic demic diffusion from the Middle East, the source population is more likely to have originated from Anatolia, the Levant or northern Mesopotamia than from regions further south.

24% of the Armenian Lebanese belong to R1b haplogroup. In fact, other genetic studies showed that the geographical distribution of the R1b haplotype is such that it is shared by Armenians (in Armenia) and two other populations from the Caucasus. Moreover, it is lacking in most other populations from the Caucasus, as well as in the other populations from further east. On the other hand, it is more frequently found in Europe, where as we know, haplogroup R1b tends to have higher frequencies as well. R1b is the most frequently occurring Y chromosome haplogroup in Western Europe.

In conclusion, the Lebanese Armenian community shares a lot of similarity with the non-Armenian Lebanese community. This is due to centuries of shared history and genetic interaction in a geographical neighborhood that has shared a similar political fate and cultural makeup.

## ENDNOTES

- <sup>1</sup> This report is provided upon the request of Antranik Dakessian, who helped us conduct DNA sampling at Haigazian University.
- <sup>2</sup> For this report we have referred to various genographic and scientific websites, like <https://genographic.nationalgenographic.com/genographic/index.html> ;  
[http://www.eupedia.com/europe/origins\\_haplogroups\\_europe.shtml#Introduction](http://www.eupedia.com/europe/origins_haplogroups_europe.shtml#Introduction)
- <sup>3</sup> Done in the laboratories of Dr. Pierre Zalloua, LAU, Byblos.

### ԼԻԲԱՆԱՆԱՀԱՅԵՐՈՒ ԾԻՆԱՅԻՆ ԱՌՆՁՈՒԹԻՒՆՆԵՐԸ - ԱՌԱՋԻՆ ՓՈՐՁ (Ամփոփում)

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Լիբանանցիներու ծինային ծագումնաբանութեան սերտողութեան ծիրին մէջ, հետազոտողներու խումբ մը 24 Մարտ 2009ին ժամանեց Հայկազեան Համալսարան եւ արեւան նմուշներ առաւ 96 հայերէ, որոնք աւելցուեցան հետազոտող խումբին կողմէ Լիբանանի այլ վայրերէ առնուած շուրջ 100 հայերու նմուշներուն:

Յօդուածը կը հաղորդէ գոյացած նմուշներուն հիմամբ կատարուած հետազոտութեան նախնական արդիւնքը:

Ըստ այդմ, լիբանանցի հայերն ու ոչ-հայերը ունին նոյն հեփլոկրոնի՝ J2 բարձր համեմատութիւնը՝ 28.1% եւ 28.9%: J2 հեփլոկրոնի առաւելաբար տարածուած է Արգաւանդ Մահիկի հիւսիսային շրջանին, Միջերկրականի արեւելեան աւազանին, Իրանի, Կեդրոնական Ասիոյ եւ Հարաւային Եւրոպայի մէջ:

Հետազոտութենէն ի յայտ կու գայ նաեւ, որ լիբանանահայութեան 24 առ հարիւրը կը պատկանի R1b հեփլոկրոնին: