

5 DNA AND DAD

Does DNA Produce More Questions Than Answers?

Genealogy doesn't often make news headlines, but in recent months, it has been a debated topic in newspapers worldwide. Why? Genetics and genealogy have merged into an amazing new research field which allows researchers to prove family connections beyond all doubt. The journal *Nature* recently reported that DNA testing was used to support the assertion that Thomas Jefferson fathered the last child of his slave Sally Hemings.

October 15, 2004

Surname Studies and Y-Chromosome Matches

Y-chromosomal STR Haplotype Analysis Reveals Surname-associated Strata in the East-German Population

Uta-Dorothee Immel et al.

European Journal of Human Genetics 14 (2006) 577-582

Abstract. In human populations, the correct historical interpretation of a genetic structure is often hampered by an almost inherent inability to differentiate between ancient and more recent influences upon extant gene pools. One method to trace recent population movements is the analysis of surnames, which, at least in Central Europe, can be thought of as traits "linked" to the Y chromosome. Illegitimacy, extramarital birth and changes of surnames may have substantially obscured this linkage. In order to assess the actual extent of correlation between surnames and

Y-chromosome
short tandem
individuals v
their respect
(M). The di
Molecular Y
group G (C
(PhiST=0.02
combined C
comparable
and linguist
countries in
observed co
recent rather
provide a sin
Y-chromosome
events.

In one of t
geneticists c
STR haploty
origin. Both
historical tim
and other tes

**Who's Your
Paternal Gr
and Longevi**

Gunnar Kaa
Circumstanc
15:784-90.

A study of
sex-specific
which, in tu

Y-chromosomal haplotypes in Central Europe, we typed Y-chromosomal short tandem repeat markers in 419 German males from Halle. These individuals were subdivided into three groups according to the origin of their respective surname, namely German (G), Slavic (S) or "Mixed" (M). The distribution of the haplotypes was compared by Analysis of Molecular Variance. While the M group was indistinguishable from group G ($\Phi_{ST} = -0.0008$, $P > 0.5$), a highly significant difference ($\Phi_{ST} = 0.0277$, $P < 0.001$) was observed between the S group and the combined G+M group. This surprisingly strong differentiation is comparable to that of European populations of much larger geographic and linguistic difference. In view of the major migration from Slavic countries into Germany in the 19th century, it appears likely that the observed concurrence of Slavic surnames and Y chromosomes is of a recent rather than an early origin. Our results suggest that surnames may provide a simple means to stratify and, thereby, to render more efficient, Y-chromosomal analyses of Central Europeans that target more ancient events.

In one of the first large-scale studies of its kind, a team of German geneticists concludes that the structure of populations as revealed in Y-STR haplotype clusters corresponds to surname groupings by country of origin. Both means of analyzing a population point to a relatively recent historical time frame—as has long been assumed by DNA Consultants and other testing companies.

January 26, 2006

Who's Your Granddaddy?

Paternal Grandfather Confirmed as Main Influence on Family Nutrition and Longevity

Gunnar Kaati et al., "Transgenerational Response to Nutrition, Early Life Circumstances and Longevity," *European Journal of Human Genetics* 15:784-90.

A study of 271 individuals with 1,626 grandparents finds that there is a sex-specific influence from grandparents on pre-pubescent's nutrition, which, in turn, determines longevity. The influence for boys comes from

DONALD N. YATES and TERESA A. YATES

their paternal grandfather and for girls from their paternal grandmother during the formative years between 8 and 12 years old, so the father's parents set the tone for childhood social circumstances that lead to poor, average or good nutrition.

The study confirms earlier findings, which ultimately mean that your father's ancestral Y chromosome line (with the female marriage partners attracted to it) is a major influence on your health and longevity. So who were *your* paternal grandparents?

April 25, 2007

A Future without Emperors

Y Chromosome DNA Fuels Dynastic Dilemma

David Cyranoski

Nature 439/7079:892-3

The Japanese imperial succession is in trouble because of the Y chromosome. Will Japan have a queen?

February 22, 2006

Not As Old as You Think

Roots of Human Family Tree Shallower Than Previously Believed

Matt Crenson

Santa Fe New Mexican/Associated Press, July 1, 2006

Brooke Shields is probably a descendant of Lucrezia Borgia. Humphrey Bogart is probably a descendant of the prophet Muhammad. And so it goes. Geneticists used to believe that "everybody on earth descends from somebody who was around as recently as the reign of Tutankhamen," according to an AP article titled "The Brotherhood of Man."

But revised thinking on their part puts the most remote common ancestor (MRCA) in a much more modern time frame, so that nearly everyone alive can claim Charlemagne and Ghengis Khan as an ancestor, if statistics and random mating hold true.

The reason is that many, many lines die out. Those that survive have

huge numbers of descendants within a few generations, and all of us have huge numbers of ancestors going back to a small genetic pool about a thousand years ago. So, a 13-marker Y-STR match such as those reported in Male DNA Ancestry products from DNA Consultants relates to a relatively recent time frame, unlike previous theories that a match went back many thousands of years to a common male ancestor.

July 1, 2006

Overestimating DNA

Having always been suspicious of the low rate of mutation in Y-STRs used to establish male lineages, blogger Dieneke Pontikos has posted a major critical review of the subject titled "How Y-STR Variance Accumulates: A Comment on Zhivotovsky, Underhill and Feldman (2006)."

His critique suggests, among other things, that the age of male haplotypes has been overestimated by 90 percent, and that the speculative rate of mutation favored by most population geneticists is three to four times the *observed* rate in germline studies of fathers and sons. Furthermore, most estimates neglect rapid expansions of the population and the short-term success of certain male castes.

Read the article on Dieneke's Anthropology Blog.

July 29, 2006

Basque DNA in Idaho

Geneticists seized the opportunity provided by an international Basque cultural event held in Idaho in 2010 to sample volunteers and study Basque DNA. The result was two studies, including "The Y-STR Genetic Diversity of an Idaho Basque Population," published in *Human Biology*.

It was the first DNA study to document the spread of the Basque male chromosome overseas. The Basque people were renowned seafarers.

"The idea is to better understand health risks for Basque people, including an increased incidence of both Alzheimer's and Parkinson's diseases," said Josu Zubizarreta, a Boise State graduate who conducted

DONALD N. YATES and TERESA A. YATES

research with the lead author, Greg Hampikian.

Mitochondrial DNA, which reflects a deeper history, was also studied.

Basques are credited with the invention of the rudder. They provided the crew and navigators for Magellan. Basque names are common on antique maps. The Bay of Biscayne is named for them, and many harbors, points and landfalls on the Atlantic Coast of North America are thought to come from the Basque language, which is known as an isolate and is unrelated to other European languages.

Citation: Zubizarreta, Josu; Davis, Michael C.; and Hampikian, Greg (2011) "The Y-STR Genetic Diversity of an Idaho Basque Population, with Comparison to European Basques and U.S. Caucasians," *Human Biology*, vol. 83, issue 6, article 2. Available at: <http://digitalcommons.wayne.edu/humbiol/vol83/iss6/2>.

December 10, 2011

Paternity Tests Available in Drugstores

Catherine Arnst

Business Week, 4/14/2008 Issue 4079, p.15

The drugstore chain Rite Aid began selling paternity kits in the U.S. on March 25, 2008. The kits, which are made by company Identigene, allow users to take DNA samples from children and parents, which are then sent to a facility for analysis. The article reports that the tests cannot be used in court, but that they are at least 99 percent accurate.

April 18, 2008

Right Pew, Wrong Church

Do You Have the DNA of Roman-British-Thracian Soldiers in Your Male Line? Probably Not

A member of the International Society of Genetic Genealogy (ISOGG) wrote an article online five years ago, and now, a substantial number of listers on the discussion board DNA-Genealogy-L believe their male lines may go back to a Balkan legionnaire in Roman Britain. This theory

has been accepted uncritically thanks to ISOGG members, who contribute most of the material on Y chromosome DNA to Wikipedia articles.

Read our review of this theory from an appendix on Jewish DNA hot spots in England and Wales in our book *The Early Jews and Muslims of England and Wales*.

Steven Bird in "Haplogroup E3b1a2 as a Possible Indicator of Settlement in Roman Britain by Soldiers of Balkan Origin," is, as the title makes clear, most interested in proving a Roman Balkan origin for the haplotype he investigates, now known as E1b1b1a, the most common type of the haplogroup E1b1b (formerly denominated E3b) in Europe. The structure and subclades of this very ancient North African Caucasian lineage have only recently been resolved and overhauled, and the ink is not quite dry. But the data used by Bird with the sometimes confused or outdated nomenclature of older reports can still provide valuable clues for our purposes, although one must proceed with caution in making too many differentiations in the tangled branches of the E tree. We must bear in mind that the target haplotype E1b1b1a2 (also called E-V13) represents 85 percent of the parent haplogroup E1b1b (also denoted as the E-M78 clade) and keep simple E before us without being distracted.

Bird's study appeared in one of the first publications of the *Journal of Genetic Genealogy*, an online journal of the International Society of Genetic Genealogy (ISOGG), founded in 2005 by DNA project administrators of the commercial DNA testing company Family Tree DNA, based in Houston, Texas, "who share the common vision of the promotion and education of genetic genealogy." It is an ambitious work with a very small goal. It uses arguments not only from genetics and statistics but also archeology, geography, history, anthropology and linguistics, often involving such fine points as the epigraphy of a Spanish soldier's diploma from the British Museum issued in 103 C.E. and the detailed movements of Thracian cohorts II and VII in the Roman army. Where angels fear to tread. Bird's theory about the origins of E1b1b in England have been enshrined in popular belief. We do not wish to appear ungrateful, but there are problems.

Bird's first mistake occurs in his review of the literature. He misreads Stephen Oppenheimer and represents the author of *The Origins of the*

British as having British E “originating from the Balkan peninsula (26).” If we open Oppenheimer’s book to the page cited (207) we see a map illustrating “Near Eastern (British English for American English ‘Middle Eastern’) Neolithic male migrations via the Mediterranean of E3b (i.e. E1b1b) and J.” The vector standing for the migration of these types launches forth from the Peloponnese in Greece at the cropped lower right corner, obviously intending to suggest origins from that general direction, not “the Balkan peninsula.” There is no mention of Balkan DNA in Oppenheimer except as part of the bigger picture. The archeological sites Bird adduces as evidence for E settlements in the Bronze Age are not necessarily associated “directly” or solely or chiefly with “proto-Thracian culture,” whatever that term may mean. Nova Zagora in Bulgaria is a Stone Age multisite. Ezero Culture occupied most of Bulgaria and extended far north into the Danube region of Romania. Yunatsite, Dubene-Sarovka, and the other “proto-Thracian culture” examples Bird mentions date to before the Thracians or even the Greeks. They cannot tell us anything about haplogroup E. If anything, all these sites vindicate Oppenheimer’s theory of the demic spread of Middle Eastern (read Anatolian) agriculture, which Bird calls “flawed fundamentally” (27). The center for the diffusion of E in the Balkans is not in Bulgaria or Thrace but northwestern Greece, Albania, and Kosovo. The Balkan Peninsula does not have to be the only place from which Bird can manage to derive E and get it to Britain in time to become part of the historical record. It is also strong throughout Greece, Cyprus, the Greek parts of southern Italy, North Africa, and even parts of Spain. In fact, its presence in many of those locations is acknowledged to be “due to a founder effect, i.e. the migration of a small group of settlers carrying mostly this lineage (but also a small amount of other North-East African lineages, notably E-M123 and T.” (See http://www.eupedia.com/europe/Haplogroup_E1b1b_Y-DNA.shtml.)

Despite these failings relating to statement of thesis and validity of arguments, Bird’s work is based on useful data. Three population surveys with frequencies for E in Britain were available to him, the data sets of Capelli, Weale, and Sykes. Notwithstanding the nomenclature confusion, only the Sykes data set has true shortcomings, as the Oxford Genetic Atlas Project at the time contained only 40 E haplotypes, too small for a valid sample. There are problems comparing them, as Bird realizes, but

trends and general conclusions are certainly possible. Before attempting to analyze the haplogroup E variation in Britain, though, we must address the matter of time depth.

We have no quarrel with geneticists' and genetic genealogists' methods of gauging coalescence times. Thus, Bird reiterates that the "time to most recent common ancestor" or TMRCA of Cruciani and others led to the "important finding . . . that E-V13 (read 85 percent of E) and J-M12 (read J) had essentially identical population coalescence times (27)." E and J are companion types that expanded from their Middle Eastern homelands together in the same fashion and probably reinforced each other in multiple phases of gene flow. But who is to say in any specific case of a haplotype that it arrived in Britain 4,000 years ago (TMRCA) or at any subsequent time, including the time when our grandfathers lived. The TMRCA sets a haplotype's time of origin but not its place of origin, except by inference. We hypothesize that from a host of other factors, chiefly present-day clusters, genetic distance between types and high concentration of haplotype diversity. Using TMRCA, Bird argues that a specific form of E "could not have arrived in Britain during the Neolithic era (6.5-5.5 kya) if it had not yet expanded from the southern Balkans (27)." We prefer to believe that it came to the British Isles at several critical times, first in Neolithic times but later with the Phoenicians, Jews, Egyptians, Iberians and related peoples.

Bird cherry-picks the data to support his Roman Balkan or what might be called Diocletian thesis, but data are data; these are amenable not only to bearing out the general storyline we present but also to supporting, within the same historical context, the existence of certain hot spots for Jewish and Middle Eastern DNA in England and Wales. We agree somewhat with Bird the Welsh cluster for E is "underestimated by an arbitrary division by Sykes into two geographic regions ('Wales' and 'Northern England') . . . [creating] an impression of a large number of 'Eshu' haplotypes located throughout Northern England, when in fact the Northern English cluster is linked to Welsh cluster geographically (29)." Only, we would see in that Northern English cluster the remains of the historical Welsh Old North (chapters 1 and 7). We would not necessarily see in the Wales-to-Nottingham cluster the fading footprints of "the Ordovices, the Deceangi, the Cornovii, the Brigantes and the Coritani tribes (30)," about whom little is known in any event, but a belt of pre-

existing Mediterranean culture reinforced by Roman occupation and somewhat resistant to Anglo-Saxon and Viking intrusions. Another shrinking pocket of the old British culture is shown in the elevated frequencies for both E and J in Strathclyde and Cumbria, part of the Welsh Old North.

Bird has an informative map of Britain illustrating E1b1b distribution according to the Kringing method (34). In this, we can trace all the major pockets of Mediterranean and Jewish DNA. Leaving aside Scotland, and aside from the Midlands pocket already mentioned, our eye is drawn to North Wales (along with a clear wall of high incidence surrounding it as though beating back the forces of history on all sides), Dorset, London, and East Anglia. It cannot be coincidence that these are the very regions where we have diagnosed the presence of Jews and picked up their trail through the chapters of our book.

As a final note, a 2005 paper by Robert Tarín provides phylogenetic analyses of E1b1b haplotypes that cast serious doubt on Bird's assertions and confirm our reading of the evidence. Tarín used 290 individual Y chromosome results to characterize "a separate cluster of mostly Iberian haplotypes which seem to represent a North African entry into Iberia distinct from the E3b (E1b1b) in Europe that may have arisen from Neolithic or other migratory events." He wrote that "it is unknown whether this finding reflects relatively recent gene flow from the Islamic rule of Spain or an older influx possibly from the Phoenicians"—the same quandary about time frame and coalescence we see above. Utilizing the Y Chromosome Haplotype Reference Database (YHRD), Tarín found levels of the Iberian E haplotype as high as 61 percent in one Tunisian population (Zriba, near ancient Carthage), while Andalusian Arabs and Tunisian Berbers both showed frequencies of about 7 percent. We believe this Iberian haplotype is a small, but important Jewish lineage that expanded from Tunisia to the Iberian Peninsula with the Berbers who aided Arab armies in conquering Spain. Interestingly, it accompanied Spanish Jews to Mexico and other places in the diaspora following the events of 1492. Its distribution in Britain should reveal an implantation originally under the Phoenicians reinforced by periodic migrations of North African and Spanish or French Jews throughout the medieval and early modern periods of British history.

January 15, 2012

Articles Cited

Steven C. Bird, "Haplogroup E3b1a2 as a Possible Indicator of Settlement in Roman Britain by Soldiers of Balkan Origin," *Journal of Genetic Genealogy* 3.2 (2007) 26-46.

Robert L. Tarín, "An Iberian Sub-Cluster Is Revealed in a Phylogenetic Tree Analysis of the Y-chromosome E3b [E1b1b] Haplogroup," published online Nov. 2005 and retrieved Jan. 2012 at <http://garyfelix.tripod.com/E3bsubcluster.pdf>.

DNA Was Discovered by Watson and Crick in 1953, Right?

Wrong. According to a correction in *Nature*, it was discovered by Swiss physician Friedrich Miescher in 1869, nearly a hundred years before. James Watson, Francis Crick and the less-often mentioned Rosalind Franklin were responsible for determining DNA's structure, a double-helix shape.

December 15, 2010

Seeing Red, Seeing Black

Sorry, Jack, no cigar. Your grandpa's Indians are not what you think. And it is not true "most free African American families that originated in colonial Virginia and Maryland descended from white servant women who had children by slaves or free Africans." Negro males did not go around randomly or selectively "fathering" little man-children on "white servant women" in early America.

It is ironic that these fantasies should even emerge in the widely publicized report, "Melungeon DNA Study Reveals Ancestry, Upsets a Whole Lot of People." The authors of the report, Roberta J. Estes, Jack H. Goins, Penny Ferguson and Janet Lewis Crain, have spent the better part of 10 years trying to prove they and others with Melungeon ancestry are just plain folks, that is, white folks.

Maybe they are just that, though. Among the conclusions of the report

are that Melungeons aren't Portuguese, aren't Native American, aren't Jewish, aren't Romani/Gypsy, aren't On and on. They just have a teeny-tiny bit of Sub-Saharan African in some lines. Not to worry, though, it is just a little soupçon of non-white. And it goes back to a few heroic "negroes" (Estes et al.'s language, not ours) who left a trace of their Sub-Saharan African Y chromosomes in the fathers and sons and grandpas of three Melungeon families.

From an article I published, lo! way back in 2002 in the *Appalachian Quarterly* (now sadly defunct), "Shalom and Hey, Y'all," comes the true story of these "negroes" fathering "multiethnic" babies on innocent white indentured servant women.

In discussing the will of Indian trader James Adair, I point out that Adair did not apparently approve of his daughter Agnes marrying John Gibson (from the selfsame Melungeon family that is creating all the brouhaha today). (Agnes, by the way, was not an indentured servant; her father had a considerable fortune.)

"Notice the harsh treatment Adair accords his daughter Agnes, leaving her and her husband John Gibson the nominal sum of only one shilling (if he had left her nothing, she could have protested to the probate court that he simply forgot her). John was one of the "mulatto" Gibsons of the Great Pee Dee river valley region. Gideon Gibson stands large on the pages of history for his role in the so-called Regulators Revolt. The Gideon Glass Antiques Store today pays testimony to the "richest man in South Carolina" of his time. When members of the Gibson family first moved to the state in 1731, representatives in the House of Assembly complained "several free colored men with their white wives had immigrated from Virginia." Governor Robert Johnson summoned Gibson and his family and reported:

"I have had them before me in Council and upon Examination find that they are not Negroes nor Slaves but Free people, That the Father of them here is named Gideon Gibson and his Father was also free, I have been informed by a person who has lived in Virginia that this Gibson has lived there Several Years in good Repute and by his papers that he has produced before me that his transactions there have been very regular. That he has for several years paid Taxes for two tracts of Land and had several Negroes of

his own, That he is a Carpenter by Trade and is come hither for the support of his Family" [Box 2, bundle: S.C. Minutes of House of Burgesses (1730-35), 9, Parish Transcripts, N.Y. Hist. Soc. By Jordan, "White over Black," 172.]

"The Gibsons are discussed as Melungeons in Brent Kennedy and as Sephardic Jews in Hirschman. They derive their origins from the Chavis family, one of the oldest Portuguese-Jewish names in America. If they are Jewish (as I believe they were), it is ironic—and probably funnier than any Fanny Brice skit—that historians trot them forth as shining examples of non-slave African American colonials owning land and marrying white women."

The moral of the story? Melungeons have often been hauled into court to prove they are not black. Now, they are being dragged through the Internet to prove they were not Jewish.

Now about those Indians ... That will have to wait until another time.

May 26, 2012

Article cited: Donald N. Panther-Yates, "Shalom and Hey, Y'all: Jewish-American Indian Chiefs in the Old South," *Appalachian Quarterly* 7/2 (June 2002) 80-89.

King-Sized Sheets

The fairytale is over, but it seems that Elvis' DNA may live on. No, I don't mean *that* way. I refer to the DNA extracted from semen- and bloodstained sheets believed to come from the King's Farewell Tour.

I thought the '50s were an innocent time. A time before groupies, drugs and the sexual revolution. Elvis has often been portrayed as a Southern gentleman coming from a simpler time. Girls swooned over him as they had over Frank Sinatra. Priscilla and Elvis were a princess and prince living in the fairyland of Graceland.

But according to these alleged sheets and an article published on March 21, 2010, in the Sunday Times, "Hound Dog: Elvis Presley and His Girls" by Tasha Collins that is far from the truth. Her article reviews the book *Baby Let's Play House: Elvis and His Women*, by Alanna Nash.

Collins states he was a "womanizer obsessed with teenage girls." It seems there was a lot of wild parties, drugs, and sex. A friend of Elvis, Joe Esposito, says, "We talked, smoked grass, drank, went for late swims, and even had orgies." Collins quotes Nash as saying, "'The number of his relationships, whether emotional or sexual, bordered on the pathological.'"

But if we can't have a fairy tale, we can have the truth. The DNA analysis of the sheets that belong to Bobbi Bacha of Blue Moon Investigations believed to be Elvis' will be revealed in a new book to come out next year, *Old World Roots of the Cherokee*, by Principal Investigator and author Donald N. Yates.

The DNA analysis and laboratory extraction were performed by DNA Consultants in 2005. The company was able to obtain information on what is believed to be Elvis Presley's ancestry and ethnicity from the Y chromosome, mitochondrial DNA and autosomal DNA fingerprint. The alleged Elvis sample turned out to have a Cherokee-specific form of mitochondrial haplogroup B on the mother's side and a Scottish Y chromosome on the father's. The autosomal profile confirmed these results with high matches for American Indian populations, Scotland and Spain.

The "Elvis" American Indian type, which seems to go back to his mother's Cherokee ancestor White Dove, has been compared with the mitochondrial results of participants in DNA Consultants' Cherokee DNA Project.

How did Bobbi Bacha get Elvis' sheets? Attending a celebrity auction more than a decade ago, she put in the winning bid for some blood and semen stained sheets. Nearly 20 years old, but carefully preserved, they were reputed to come from the hotel room where Elvis Presley stayed on his Farewell Tour in 1977. She won't tell us how much she paid but says, "I could have bought a comfortable medium-sized home."

Bacha is no stranger to high-profile mysteries, crimes and misdemeanors. Part Cherokee, she is also, verifiably, of Melungeon descent. "As you know," she told us from her swanky glass headquarters building in Houston, "Nevil Wayland is my grandfather, and it was he who first coined the term Melungeon." We didn't know, but we soon got an earful. "We believe his wife was the daughter of Chief Red Bird as his son was the Scribe to Chief Red Bird. Nevil built the first church in

Arkansas after the family told of a great war against the Indians and he took them to Arkansas and built Stoney Creek Church. That's the name of it."

Bacha has also been in the movies, or at least her character has. The plucky Texas private eye is played by actress Sela Ward in "Suburban Madness." This film is based on the real-life story of Clara Harris, convicted February 2003 of killing her cheating orthodontist husband by repeatedly running him over with the family Mercedes. Bacha was an eyewitness.

So what of Bacha's expensive king-sized sheet set? She tried for years to extract DNA, to no avail. The discipline had some growing up to do. Finally, she contacted DNA Consultants. Through the efforts of Sorenson laboratory director Lars Mouritsen in Salt Lake City, we were able to succeed where others had failed. We obtained the first DNA profile, Y chromosome and mitochondrial DNA results for what everyone believed was a 30-year-old sample from the King.

If Elvis isn't still around, maybe his hair still is. If it is his. According to Lorraine Bailey in the Courthouse News Service article, this isn't the first time something like this happened ("That's Not Elvis's Hair, Feds Tell Auction Execs"): "Federal prosecutors have accus[ed] three top executives of Mastro Auctions of selling bogus "bona fide" locks (from 2003 to 2008) of Elvis Presley's hair though they knew they were phony."

We don't know. But just maybe this is the real deal. For the rest of the story, and to see what you think, you'll have to read Donald Yates' new book, *Old World Roots of the Cherokee*, where Elvis' genetics is discussed in the chapter titled "DNA."

September 12, 2011