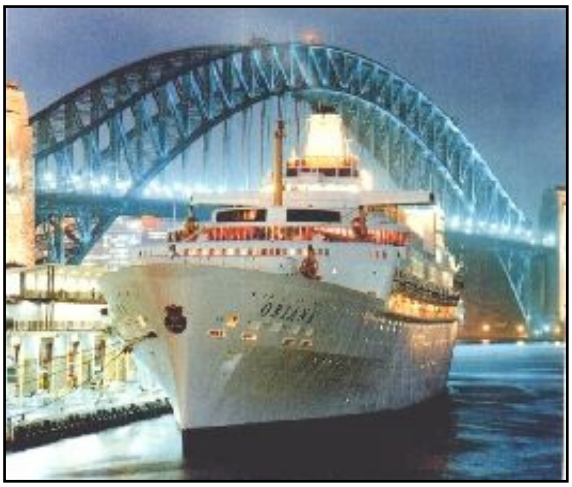
HOW MY PEOPLE TRAVELED FROM AFRICA TO THE UNITED KINGDOM



By Ken McNaughton

All my life I have been interested in Scotland, because of my Scottish name. What I understand now, as a result of getting my DNA analyzed in 2009, is my lifelong predilection toward Spain, France and the Mediterranean.

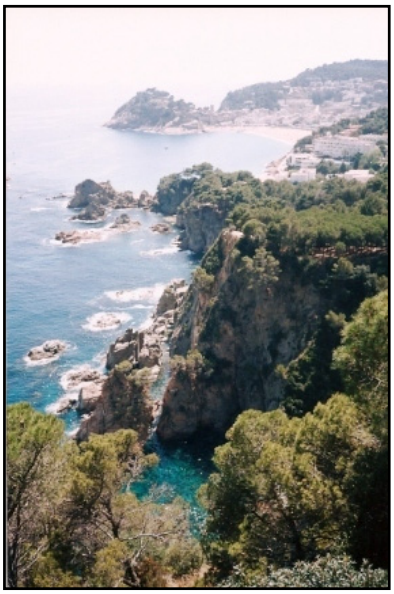
Figure 1. In January 1964 Ken sailed from Melbourne to London via the Mediterranean on the *Oriana*; here it is tied up in Sydney (image courtesy of http://www.nzmaritime.co.nz/oriana.htm).

My earliest known ancestor lived in eastern or southern Africa about 150,000 years ago. The structure of the African ecosystem, with its vast savannas in close proximity to forests, is an ideal habitat for a primate making the transition from trees to the ground [1]. But while forest-dwelling apes are gatherers (their diet consists primarily of fruit and insects) those who moved onto the savannah had to become hunters—plants and insects simply don't provide enough nourishment. This was a more challenging environment, requiring cooperative hunting technology, with its strong selection for intelligence and social interaction.

The world was getting colder 70,000 years ago as the last ice age accelerated into a deep freeze. The forests were shrinking, the interior was drying, and it seems most likely that a "climate pump" pushed my ancestor's people north along the African coast—because of the competition and difficulty of living inland, with dwindling access to water resources and easy prey. Think of the vast Sahara Desert to the west. On the coast there were no mountain ranges or great deserts to cross, no need to develop new toolkits or protective clothing, no drastic fluctuations in food availability, and only a couple of stretches of open water that would have required a boat to cross. As soon as conditions created an easy exit to the Eurasian landmass, they started to migrate out of Africa. This would have been easiest between Djibouti in Africa and present day Yemen on the Arabian peninsular, a straight shot out of the Rift Valley to the endless beaches of Eurasia. Today this gap in the Red Sea is about 20 miles (30 km) wide.

MIGRATION

In January 1964 at the age of 23 and having completed two degrees in Melbourne, Australia, I boarded the P&O liner *Oriana* to do post-graduate research at University College, London (Fig. 1). *Oriana*, built in 1960, was the largest and last passenger ship of the Orient line. We stopped at Aden, in Yemen (where Al Qaeda bombed the U.S.S. *Cole* in October 2000). Aden had a reputation for duty-free electronics so I ran around the streets and purchased my first single-lens-reflex camera, a transistor radio and a reel-to-reel tape recorder. As we sailed into the Red Sea through that 20-mile gap between Djibouti and Yemen I was transfixed by my first glimpse of Africa. On shore was a large gathering of Bedouins (possibly the *Beja*) in flowing robes—some



white, some black—with a few tents. At this time I had no idea that my ancestors probably migrated out of Africa into Eurasia at this very point some 60,000 years ago.

Figure 2. Costa Brava between Barcelona and the French border, May 1997.

Genetic anthropologists have revolutionized our understanding of ancient human migration, not by digging up skeletons in the desert, but by studying the DNA of current indigenous populations around the world. By looking at these DNA signatures they can see the most common patterns in each area and make conclusions about the most likely earliest inhabitants, since some people never moved. Our DNA is remarkable stable, so when a mutation does occur, it is passed on generation after generation for thousands of years. And since a mutation occurs in only one person at a time, a characteristic mutation that is found in many people today can theoretically be traced back to the first person who displayed this mutation. Further, since such mutations only occur at long intervals, from the number of mutations evident today we can estimate how long it took to accumulate them.

That is how I know my earliest ancestor lived in Africa about 150,000 years ago—because this woman is the ancestor of all modern human beings. She passed on a pattern of DNA that can be found in everyone, through the mitochondrial DNA her children inherited. Let's call her mitochondrial Eve, or mt-Eve. There were others before her but she was the first to display this characteristic mutation. And there were other men and women around her, perhaps a thousand, but their descendants have not survived. She is the mother, or grandmother, of all us *Homo sapiens*. Her daughters passed this message onto their children, and so on down the line.

Figure 3. Black bulls graze on the Camargue plain in southern France, May 1997.

By a similar chain of logic, we can think of the last woman in Africa who manifested a characteristic mutation found in all those who moved on. Based on her descendants in Africa today, it is most likely she lived in northeast Africa, in the region of present day Ethiopia and Sudan. Once she and her band crossed into the Eurasian landmass, various groups took different routes, each of which can be identified by a mutation characteristic of the endpoint population. Antonio Torroni, an Italian geneticist, developed an intricate technical system for these markers, based on letters of the alphabet. Brian Sykes speaks of the Seven Daughters of Eve [2], and gives each of these seven streams a female name starting with one of Torroni's letters. Over 95 per cent of modern-day native Europeans fit into one or other of these seven groups.

Figure 4. Flamingos feed in a Camargue lagoon, May 1997.

My ancestors can be identified with the tribe of Helena [3], which is easily the most successful clan in Europe, reaching every part of the continent. Forty-seven per cent of modern Europeans are members of her clan. The reference sequence with which all mitochondrial mutations are compared is Helena's sequence. Helena was born about 20,000 years ago on the strip of land that joins France and Spain, near what is now Perpignan. She belonged to a family of hunters who harvested the rich oyster beds in the lagoons of the Camargue to supplement their diet of meat. Helena's clan arrived in Europe from the Middle East, pushing their way along the Mediterranean, constrained to the narrow strip of land that was still habitable below the ice line.

THE MEDITERRANEAN

In May of 1997 I flew from the USA and landed in Lisbon, Portugal, at dawn. As we flew across northern Spain I was amazed by the barren, rugged, unpopulated nature of the country. In Barcelona I rented a car and drove up the Costa Brava to the southern coast of France (Fig. 2). I drove through Perpignan, now a sprawling city, and Montpellier, to enter the plain and lagoons of Camargue. At Aigues-Mortes ("Dead Waters") on the flat marshy plain was a huge wall, stretching, it seemed, for miles (actually about a mile or 1,650 meters around). I located a gate and found myself inside—a walled city, started in 102 B.C. and rebuilt in the 13th century by King Louis IX as a base from which to launch the disastrous Seventh (1248) and Eighth (1270) Crusades. I wanted to spend a week at Les-Saintes-Maries-de-la-Mer at the annual festival of the Gypsies (Rom) and also wanted to see the black bulls, wild white horses, and pink flamingos for which the area is famous. Again, I had no idea that my ancestors had passed this way 20,000 years ago on their migration west.

Not long after she was born, the glaciers that covered the Pyrenees—which Helena could see on a clear day only thirty miles (50 km) from her camp—began to draw back as, little by little, the summers grew warmer. Some of her clan moved south of the mountains, up the valley of the Ebro to the West to reach the lands of the Basque, where they remain to this day (Figs. 6-8). The Ebro, Spain's most important river, rises in the northwest and flows 565 miles (910 km) across northern Spain to enter the Mediterranean in the province of Tarragona, south of Barcelona.

The Basque country is another area that has fascinated me over the years. I drove through in 1964 (Figs. 9 and 10) and went back in February 2003. This time I flew to Madrid, rented a car, and lingered in Burgos, Santander, Bilbao, Gernika and San Sebastián. I crossed the River Ebro twice. The first time I was driving north from Burgos to Santander, just south of Escalada, heading into the mountains. Snow was piled up high on either side, encroaching on the road, and dusk was falling. There were no houses, people or other cars, and I was beginning to wonder if I would have to turn back. I also wondered if I might get snowed in and die of exposure. One of my inspirations to continue was seeing this black bull on the

hillside, actually a two-dimensional metal sculpture (Fig. 11). My second crossing of the Ebro was driving south from Orduna to Miranda de Ebro. This was to be my final encounter with the Spanish countryside before returning to Madrid and I soaked up every inch of the atmosphere.

Figure 5. Wild white horses in the Camargue. The dark one on the right is too young to have grown white hair over its dark body.

BRITAN AND IRELAND

The most adventurous of Helena's children took advantage of the climatic improvements and journeyed ever northwards to join the great movement of hunters across the plains of France. Archeological evidence suggests that the Paleolithic (earliest stone age) population of Europe was confined to the Iberian peninsular (possibly named after the River Ebro, which the Romans named *Iber*), southern Italy and the Balkans during the period of most extensive glaciation around 16,000 years ago, and that human populations then expanded northward during the postglacial period. We know that Helena's clan reached England around 12,000 years ago because DNA recovered from a young male skeleton found in Gough's Cave in Somerset shows that he too belonged. At this time the sea level was 100 feet lower than it is now; Ireland and the British Islands were connected to one another and to the rest of continental Europe (Fig. 12). Only the Shetland Islands, 60 miles north of Orkney, were truly islands.

At several independent locations around the world there was a sudden transition from hunting and gathering to settled life around 10,000 years ago. In the Middle East, people specialized on plentiful species and settled near their favored plants. The need to store gathered grain tied them to one location. These people stopped being entirely controlled by climate and began to mold their environment to suit themselves. Agrarian societies are more densely populated than those of hunter-gatherers, and this set off a population explosion. It was not the farmers who out-migrated the hunter-gatherers, it was the concept of farming that swept the world [2].

Figure 6. Rugged mountain ranges, such as these between Burgos and Santander, probably forced my ancestors to follow the Ebro valley from northeastern Spain to the west.

The people who came from southern France and northern Spain developed a unique culture and became knows as Celts. Those of Helena's clan who finished up in England are mostly Celtic, with a bit of Anglo-Saxon and Danish-Viking mixed in, presumably because

those warlike men of the Continent kept coming for the fair English beauties. Helena's clan is dominant in England, Wales and Scotland, accounting for about 45% of all the maternal clans. What happened to my ancestors between that time 12,000 years ago and the 19th century is a bit of a blur. What I do know is that one of Helena's clan, most likely from England, returned to Spain, married an Englishman and had a daughter who found her way to Australia and made it possible for me to write this story.

Figure 7. Peaceful fields between Bilbao and Miranda de Ebro.

Matilda Hynes was born on 20th January 1838 in Gibraltar to Margaret Holland and William John Hynes, a gunner and driver for the Royal Artillery. Matilda arrived in Australia at the age of 16. When she was 23 she married the 26-year-old miner Henry James Dawson who was born in Yorkshire around 1834 to Anna (née Smith) and William Dawson, a farmer. Henry and Matilda were married 5 September 1860 in Buninyong, nine miles south of Ballarat, when they both lived at Winters Flat. Gold was found here in 1851 and continued to be mined into the 20th century but most of the miners deserted to Ballarat. Matilda and Henry had nine children, including Frances Ann Dawson, who was born 22 July 1863 at Magpie, Ballarat. Frances married young John Yates on 25 August 1883 when she was living at Broomfield and he was living at Ballarat. John and Frances had five children, the first of whom was Matilda Mary, born at Broomfield 18 June 1884. Matilda married Frank Besant on 14th October 1908 when she was 24 and he was 25 in Yackanandah in the beautiful north-eastern highlands of Victoria. Supposedly the town brass band turned out to play "Goodbye My Bluebelle" as the two of them left for their honeymoon in a hansom cab. Frank and Matilda had two daughters, Doris Thelma and my mother, Lilian May Besant.

HERE COME THE MEN

The earliest common ancestor for all modern human males lived in Africa, most likely about 60,000 years ago [1]. He passed on his characteristic DNA via the Y-chromosome to his sons and so on down the line. Of course, there were other men before him, but he is the most recent common ancestor to all us modern men. Just as in the case of mt-Eve, Y-Adam was not the only male around at the time, but the progeny of the others have not survived. It would be romantic to suppose that Y-Adam and mt-Eve lived at the same time but the evidence shows otherwise.

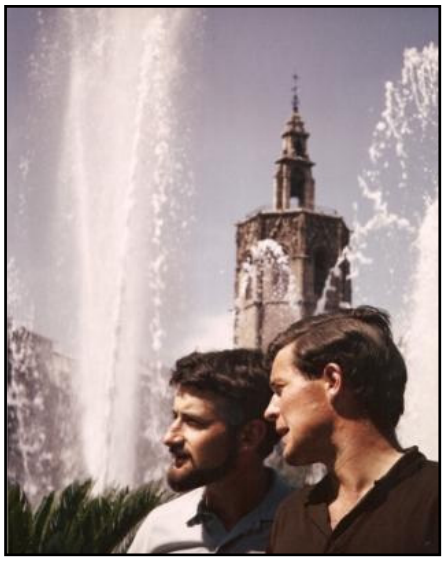
And here is where it gets really weird. While modern European women took the more direct route via the northern Mediterranean coast through the Iberian peninsular to the British Isles, the men took an entirely different route at a later date. Most European men trace their ancestry back to Central Asia within the past 35,000 years. This is not to say there were no men in Helena's clan, or that there were no women with the Central Asian men. Again it is a matter of survival. The female genes that traveled the more direct route are dominant, as are the male genes that traveled via Central Asia.

Figure 8. Between Burgos and Miranda de Ebro.

The analysis of my DNA aligns me with the clan of Oisin (pronounced O'Sheen) to a high degree of certainty [4]. This is an offshoot of the so-called "Seth" clan. Seth lived in the Middle East about 50,000 years ago and his descendants are found in an arc extending from the Middle East to Iran, Afghanistan and the Indian subcontinent. The clan of Oisin broke away about 35,000 years ago and traveled west toward the Iberian Peninsular.

In the far west of Ireland almost 100% of men with Gaelic surnames are in the clan of Oisin. The proportions are also very high in Wales (83%) and Scotland (73%) and to a lesser extent in England (64%). The very high proportion in Iberia (70%), particularly among the Basques, indicates the genetic continuity between Iberia and the Celtic west of Britain and Ireland, and supports the importance for the colonization of Britain and Ireland of maritime migration along the Atlantic coast of Iberia, France and Brittany, beginning 7,000 years ago. Those of the Oisin clan in Scotland are mostly Celtic with a bit of Norse Viking thrown in. The Norse Vikings controlled portions of Argyll and the western islands where the McNaughton clan was strong [5]. This clan supposedly originated with King Nechtan, a Pict, who would have been genetically indistinguishable from other Celts. While the Picts had distinctive artwork and a stronghold in northeastern Scotland, there are those who say they just happened to be Celts who held off the Romans and the Norse until subdued by the Celts from Ireland.

Figure 9. In love with Spain, Ken (left) traveled with his friend Ron Haig in August 1964.



Fast forward a couple of thousand years and we get to James McNaughton, a coppersmith, who married Christian Ross in Edinburgh in 1804. The couple's second son, John Ross McNaughton, married Agnes Stirling in Glasgow in 1837. In 1838 they migrated to Melbourne, Australia, and had eleven children. Their third child, John, married Catherine Grant Brown in 1872 and had five children, the second of whom, Charles Robert, married Annie Florence Carver on February 17th, 1908, the same year my maternal grandparents married. Charles and Annie had five children, the first of whom was my father, Charles Dudley McNaughton. He married my mother, Lilian May Besant, on 7 December 1935 in Melbourne.

Figure 10. Fresh out of their Spanish pensione one morning in August 1964 (l-r) Ron, Ken and Dave Jellie.

Back in January 1964, after leaving Aden, my ship, the *Oriana*, sailed up the Red Sea. At Suez, a couple of friends and I opted to hire a car to drive us through the desert to Cairo while our ship headed for the canal. We were surrounded on all sides by flat sands stretching to the horizon and nothing but the road straight ahead. At one point, a Bedouin rose out of the sand on the right, crossed the road and descended again to the sand on the left. Where had he come from, and was he going? We spent a day and a night in Cairo—enough time to visit the pyramids at Giza, see the relics of King Tutankhamen in the Cairo Museum, and witness armed troops of Colonel Gabel Nasr trotting through the streets in formation.

We rejoined the ship at Port Said and sailed through the Mediterranean, where my maternal ancestors had skirted the northern shore. We stopped at Naples and, at the southern tip of the Iberian Peninsular, anchored off Gibraltar (Fig. 13) where Janet Henderson, one of the friends I had made on board, disembarked to travel overland to England. Janet's cabin-mate surreptitiously helped me organize a farewell ceremony. I begged some balloons from two other passengers, David and Pam Jellie, who became friends and travel companions. As Janet put to shore in a small boat she was able to see an item of her personal clothing flying from the stern of the ship. The *Oriana* sailed up the Atlantic coast off Spain and France, where my maternal and paternal ancestors would have hugged the coast.

BONUS ANALYSES

One of the reasons I decided to get my DNA analyzed by Oxford Ancestors [6] was because they offered two bonus analyses—"Genghis Khan" and "Tribes of Britain."

Genghis Kahn might be considered one of the most influential genetic influences on modern humans after mT-Eve and Y-Adam. He conquered half the world from horseback in the 13th century and tried to leave enough sons to rule his vast kingdom. It has been estimated he has sixteen million descendants living today. If you are skeptical about his genius I highly recommend *Mongol* (2007) a film directed and co-written by Sergei Bodrov. Since my paternal ancestors lingered in Central Asia, I wanted to see if I had inherited the genes of Genghis Khan. However, a comparison of my Y-chromosome signature with his matches only four out of the nine genetic markers for which there are comparable results. Although this result does not completely rule out a connection with Genghis Khan, it is not a sufficiently close match to be confident that I am one of his direct paternal descendants. It seems likely my paternal ancestors were already far to the west by the time Temudjin became the Great Khan.

Figure 11. A two-dimensional sculpture of a bull materializes out of the fog and snow on the road from Madrid to Santander, February 2003.

The "Tribes of Britain" analysis, however, did fine-tune the Celtic origins of my paternal ancestors; it partly reads as follows:

> *From what we can tell from archaeological discoveries, Britain was first permanently settled after the last Ice Age, about 10,000 years ago, by hunter-gatherers moving across dry land from Europe on what is now the bed of the North Sea. These were relatively few in number and were augmented over the next three thousand years by a sustained movement of people arriving by sea along the Atlantic coast of France to western Britain and Ireland. Four thousand years later, the first signs of farming appeared, carried along this same Atlantic route. Though the population grew as the native woods were cleared for crops, it does not necessarily follow that these farmers replaced the indigenous hunter-gatherers. It is more likely that the hunters gradually adopted the new agricultural way of life, while being joined by fresh arrivals from Iberia.*
>
> *About 3,000 years ago, during the late Bronze Age and Iron Age, material artifacts from the thriving Celtic cultures of central Europe, like weapons and jewelry, began to appear in Britain. However, this vivid cultural change seems, from the genetic evidence, to have involved the movement of relatively few people.*

Figure 12. Huge Atlantic swells off San Sebastián now isolate The British Isles from continental Europe, February 2003.

Our genetic analysis of your DNA shows that it is likely that you have inherited your Y -chromosome from one of the ***earliest*** *(my bold face) inhabitants of the British Isles, perhaps even from one of the first settlers who arrived 10,000 years ago. There are intriguing genetic connections between your Y-chromosome and those found in the Iberian Peninsula, especially among the Basques. This suggests that your ancestor took part in the vigorous sea-borne traffic between Ireland, western Britain and the Atlantic seaboard of France and Spain, which archaeologists have long suspected. This connection began with the pre-farming hunters and fishermen and continued with the peoples who built the large stone monuments, the megaliths, which also link these western sites from Spain to Scotland.*

Figure 13. At Gibraltar in August 1964 Ken (right) and Ron pause by the yoke-and-arrows symbol of the Spanish Falange party.

POST SCRIPT

One of the most memorable films I saw in my four years as a student at the University of Melbourne was *La Reve des Chevaux Sauvages* (Dream of the Wild Horses), a slow-motion tribute to the wild white horses of the Camargue. This must have been a print from *Le Songe des Chevaux Sauvages* (1960), directed by Denys Colomb Daunant, although there is also *Le Songe de Chevaux Sauvages* (1962), directed by Albert Lamorisse, who also directed *Crin Blanc: Le Cheval Sauvage* (1953)—about a boy and those who try to capture a wild white horse—which won the Cannes Film Festival Grand Prize for short film (Lamorisse won an Oscar in 1956 for *Le Ballon Rouge*).

I wonder if Helena's clan related to the horses of Camargue when they lived there. This is an ancient breed that has lived for centuries, possibly thousands of years, in the harsh environment of the wetlands of the Rhone delta, developing the stamina, hardiness and agility for which they are known today [7]. Did Helena watch the wild white horses and dream she could capture one? In 1967, while spending a year living on the Gulf of Mexico in Yucatan, I ventured into the jungle one night and found out how hard it is to capture a wild white horse. These days my interests have progressed from capturing wild horses to eating at tapas restaurants and attending flamenco performances, for which I sometimes publish reviews on http://www.dcflamenco.com/.

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