

## ***We Scots Are All Immigrants – And Cousins to Boot!***

*by*

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America is a nation of immigrants. In fact, North America was uninhabited until incomers from Asia crossed a land bridge from Siberia to Alaska some 12,000 years ago—right after the last Ice Age—to eventually spread across the continent. In addition, recent evidence suggests that at about the same time, other incomers arrived in South America by boat from Polynesia and points in Southeast Asia, spreading up the west coast of the continent. Which means the ancestors of everyone here in the Americas, everyone who has ever been here, came from somewhere else.

Less well known is the fact that Britain, too, has been from the start a land of immigrants. In recent years geology, climatology, paleo-archaeology, and genetic population research have come together to demonstrate the hidden history of prehistoric Britain—something far different than what was traditionally believed and taught in schools. We now know that no peoples were indigenous to Britain. True, traces of humanoids there go back 800,000 years (the so-called Happisburg footprints), and modern humans (Cro-Magnon Man) did indeed inhabit Britain about 40,000 years ago. But we also now know that no one alive today in Britain descends from these people. Rather, during the last Ice Age, Britain, like the rest of Northern Europe, was uninhabited—and uninhabitable.

A major force of Nature, the series of Ice Ages is largely responsible for reshaping all modern European populations—repopulating all parts of Europe by groups from which we in the ancestral Scottish Diaspora also descend. With northern Europe uninhabitable until 15,000 years ago, humans were forced into an evolutionary “bottleneck” around the Mediterranean and on the south Russian steppes—areas from which subsequently arose waves of migration for millennia to come, each moving largely from east to west, across what is now Europe.

Humans didn’t return to Britain until the climate became more hospitable—just about the same time that North America was first being populated. Because sea levels were still so much lower then than today (during the warming period following the last Ice Age), these people walked to Britain across a now-submerged land bridge. This long-lost landmass—what geologists now call the *Doggerland plain*—extended from the south England to the very northern tip of Scotland—uniting Britain in a continuous landmass with the Low Countries and Jutland.

We now know that Doggerland sank into the sea about 5,600BC—the result of two natural disasters: the so-called Storregga landslide that resulted in a large portion of the west coast of Norway sinking into the sea, and a huge tsunami in the North Atlantic which followed. After its

disappearance, all incomers to Britain from that point forward arrived (from somewhere else) by boat.

DNA analysis over the past decade has been able to shine a bright light on the modern markers we all carry from these great population migrations—generally moving from East to West across Europe over the last 14,000 years—mingling with, and sometimes displacing, the earlier Neolithic (New Stone Age) populations about which we know very little. Genetic research has proved that 80% of the DNA of most modern British people, Scots included, was passed down from a few thousand Neolithic hunter-gatherers resident on the island after the last Ice Age. The rest of their DNA comes from various groups of subsequent incomers who arrived by sea in Britain from elsewhere in Europe during more recent times—the Picts, Britons, Saxons, Scots, and Vikings, arriving in that order.

The Picts (*Cruithne* in their own tongue, *Picti* to the Romans—both words meaning “painted people”) arrived first—maybe from Scandinavia, but almost certainly coming down through Orkney). They concentrated in the northeast of Scotland (from Caithness down through Fife), and established seven powerful subkingdoms—*Caiti* (Caithness and the Western Highlands), *Fidah* (Moray, Nairn and Ross), *Ce'* (Banff, Buchan and Aberdeenshire), *Fotla* (Athol and Gowrie), *Circenn* (Angus and the Mearns), *Fortrenn* (Menteith and Strathearn), and *Fibh* (Fife and Kinross).

At some point, these Picts were followed by Britons from Gaul (now France) on the continent, arriving in multiple waves, some during the Bronze Age, other during the later Iron Age, and spreading all across the island. This is a Welsh-speaking Celtic people, many of whom, after the departure of the Romans in 407A.D., were forced into the far West (Wales and Cornwall). But other Britons held the north, where they formed a distinct ethnic enclave in the “middle belt” of what is now Scotland—from Strathclyde in the West to Loch Lomond and the Lennox in the East. This broad area was once called by them *Hen Oglad* (“the Old North”), or “Britain Between the Walls”—the area between the Antonine Wall stretching from the Firth of Clyde in the West to the Firth of Forth in the East), and Hadrian’s Wall (stretching from the Solway Firth in the West to the River Tyne in the East, facing the North Sea). This part of what is now Scotland was populated from Roman times onward into the Dark Ages by four powerful and independent north British tribes (the *Novantae*, the *Selgovae*, the *Damnonii*, and the *Votadini*)—all allies or clients of Rome for the roughly 350 years of the Roman Era in Britain. Together they formed a buffer against the wilder *Caledonii* to the north of the walls. The *Novantae* were centered on what is now Carrick and Kurkubright; the *Selgovae* ruled from as far south as Cumbria and Carlisle to up around Dumfries, Paisley and Melrose. The *Votadini* held sway around Dunedin (now Edinburgh); and the *Damnonii* occupied Strathclyde, around Dun Briton (now Dumbarton) and over to Stirling. After the arrival of Christianity and the departure of the Romans, these North British tribes coalesced into three powerful kingdoms—*Gododdin*, centered on Edinburgh, *Reghed*, centered on Carlisle, and *Altclud*, centered on Dumbarton—kingdoms which long maintained their ethnic and political independence.

Next came the Germanic Saxons, having invaded Britain in force by sea around 400, at the end of the Roman Era, spreading across the south of England and later moving up across the Cheviot Hills into Lothian from their strong base in Northumbria. They formed a number of competing kingdoms, the most famous of which was Wessex, in the south, but also Beronicia and Northumbria in the far north of what is now England. Later, a second wave of them moved north into Scotland—peaceably this time—after the Norman conquest of England in 1066, preferring the mild rule of the Scottish king to the harsh rule of the new Norman king in England. Much of the Scottish lowlands from the Borders northward was eventually populated by these Saxon incomers.

The Saxons were followed closely by the Gaelic *scotti* (sea-raiders), coming in waves by boat from Dalriada, in what is now Antrim in Ulster (Northern Ireland), and entering from Argyll, Kintyre and Cowall during the Dark Ages, starting around 600 AD. They established themselves first on the Western seaboard and in the Western Isles (Inner Hebrides), then moved east, across what is today the southern and central Highlands, coming into conflict with the Picts. When they arrived, the Scotti were loosely organized in four main “kindreds” (*cinella*)—the *Cinel Loarn*, *Cinel Gabhran*, *Cinel Aoengus*, and *Cinel Comgall*, which soon warred with each other for supremacy in their new homeland, which they called the Kingdom of Dalriada. In time, and due largely to the rugged topography of isolated straths and glens, these Gaelic kin-groups would evolve into the West Highland Clans as we know them today.

Finally came the Danish and Norse Vikings (the *fingall* and *duthgall* of the Irish annals), first raiding Ireland and the coasts all around the Island of Britain from about 800 AD onward and then invading the north of England, and large parts of northern and western Scotland (the Hebrides, Caithness and Sutherland) in force after about 900, establishing settlements. In Ireland, they established a strong base at Dublin and in the north of England, at Yarvik (now York). In the Western Isles, Norse and Gael would intermarry and merge, giving rise to the many branches of Clan Donald and other island clans. In time, these Norse-Gaelic clans would coalesce politically to form the semi-independent Lordship of the Isles.

By the 1070’s, under King Malcolm Canmore and his Saxon-born wife, Margaret (sister of Edgar, King of Wessex, who had been forced into exile by William the Conqueror and his Normans after 1066), these disparate peoples living north of the Tweed had become united, (through conquest, alliances, and intermarriage) to form the Kingdom of Alba—Scotland as we know it today.

It was only a decade ago when Brian Sykes, in his 2006 book, *Blood of the Isles*, (published here in the States under the title, *Saxons, Vikings and Celts: The Genetic Roots of Britain and Ireland*), started the current intense interest in using genetic testing to do human population research in Britain. Sykes produced an analysis of the results of 6,000 cheek swab samples and broke the British population into 12 *haplogroups*, which each predominated in different regions of the island—largely tracking with the different waves of invaders described above. (The related

term *haplotypes* are genetic classifications of population groups, and in a scientific sense haplotypes define ethnicity— which tribal population(s) we descend from.)

More recently, the firm Ancestry studied the DNA of two million inhabitants of Britain, using the results from home-based saliva tests. Breakdowns revealed marked differences in the genetic makeup of residents of Scotland, England, Wales, and Northern Ireland. Other genetic researchers have followed suit to further tease out the regional differences. (Somewhat surprisingly, all this analysis showed that Europe’s population is the newest on the planet.)

When we look at the British Isles, notably Scotland and Ireland (which are both fairly isolated), we are looking at some of the latest iterations of three major haplotype groups: R1b, R1a, and I. (These three haplotypes effectively replaced or co-mingled with Haplogroup H, the earlier Hunter-Gatherer groups, all across Europe.) Today, 75% of the male (Y-DNA) signatures in Europe are R1b, the highest being 80% in Ireland, where R1b predominates. R1a, which split from R1 well back in pre-history, represents a more Slavic and Eastern European geographic origin and accounts for about 8% of Britain’s population today. Haplogroup I and its sub-group I2b represent more northern Eurasian populations and are associated with Norwegian, Danish /Germanic (i.e., Saxon) populations representing about 12% overall.

Until 2013, STR’s (single tandem repeats) or specific forensic markers were primarily used to identify male populations-- hence we see those long strings of numbers that come back from the genetic testing labs, which we spend long hours puzzling over. These markers define which haplotype each of us belongs to – in other words, which tribal population(s) we descend from.

A newer, deeper level of genetic insight has now arisen from further breakthroughs in DNA research dating from 2013. For Scots, the work has been spearheaded by Professor Jim Wilson of Edinburgh University, who reported that he had discovered the unique genetic identifiers of most Scottish men—through SNP’s (“single tandem repeats”). SNPs reveal certain places in the genome where the genetic proteins (A, C, G, T) have mutated in a single ancestor. From that point forward, these “markers in time” are passed down from father to son, in each new generation, consistently. Therefore, anyone sharing a certain genetic SNP with you will share a common ancestor, as well.

So now your haplotype has a dash on the end, followed by additional coded numbers, called your “end-SNP.” Thousands of these SNP’s have been discovered in just a few short years. Anyone and everyone can now get a testing package (which can be ordered online) from one of the major testing companies (Ancestry, Family Tree DNA, 23&Me, Britain’s DNA, Full Genomes, G-2, etc.). A simple cheek swab is taken and sent off to the testing company, together with the required fee, in order to answer the key questions, who am I, and from whom do I descend? A written report is sent back to the testee.

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required fee in order to answer the key questions: “who am I”? And “from whom do I descend”? To get the answers, everyone is encouraged to do three tests, which are generally cheaper when bundled: Y-DNA (at least 37 markers) for the male line (father’s kin); mtDNA for your female line (mother’s kin); and Autosomal, a curious name which includes “everybody else.” (We each derive 50% of our genes from our parents. But they were passing on what they inherited from their parents, so everyone is getting 25% (roughly) from each grandparent—and 12.5% from each great-grandparent, and so on, all the way back. Many traits, both physical and s mental, come down to us from other relatives through one’s bloodlines—hence the value of the autosomal test.) Total costs for all three average under \$500, depending on the lab. After that, it’s down the SNP trail. Full Genome Corporation in Maryland literally tests the entire genome for SNP’s, and labs like YSEQ (Germany) publish massive charts of the various haplotypes and their SNP’s.

Family Tree DNA, Inc. of Houston, TX, in many ways the industry leader in genetic population testing, now has ongoing over 9,000 “DNA projects” that individuals tested by them can join. Of this number, some 6,000 are Family Projects, and of these, at least 200 are Scottish surnames. (All the named projects are listed on the FTDNA website).

While some of these Scottish surnamed projects are of modest size, others—like the Armstrongs, Campbells, Frasers, Gordons, Grahams, Grants, MacDonalds, MacFarlanes, MacGregors, MacKenzies, MacLarens, MacLeods, MacNeils, Montgomeries, Morrisons, Rosses, and Scotts—each consist of 400 or more participants, and in some cases more than 700. Significantly, project participants hail not only from the Scottish Diaspora in America and elsewhere but from Scotland, too. In many instances, clan chiefs have agreed to be tested and participate in these family projects, providing their DNA samples as important bench-markers for hundreds of their kin around the world.

In this brave new world of haplotypes and SNPs, a key word we in the Scottish Diaspora should use with more regularity is “cousin”— meaning a relative with whom a person shares one or more common ancestors. (In the general sense of the term, cousins are two or more generations away from any common ancestor, thus excluding siblings, aunts and uncles, nieces and nephews from the meaning of the term.) The 200 + Scottish family and clan projects of Family Tree DNA have clearly demonstrated that many far-flung members of these surname groups are closely related to each other, genetically.

Enthusiasm is incredibly high in America—a nation of immigrants—for DNA research. Here in the States, the West African, Jewish, Irish, and Armenian Diasporas are key examples of ethnic groups whose members by the thousands have enthusiastically embraced genetic research as a tool to help them reconnect with ancestral populations in the original homelands from which they have long been separated. And their cousins back home in their respective lands of origin have responded just as enthusiastically.

Then there's the situation of the Scots. Despite a curiously ambivalent attitude that persists in Scotland about connectedness to their ancestral diaspora, especially in America, and whether those who left should be viewed as "part of the family," Scottish-Americans have never had any doubt in this regard. And ours is a position now bolstered by science. In the last decade, DNA research has erased all doubt that we In the Diaspora are indeed close relatives of those now living in Scotland. They descend from those who stayed behind, while we descend from their adventuresome cousins--Scots who by the thousands emigrated to America and elsewhere across the world in the last 400 years. Together, we all descend from those waves of incomers to Scotland over the last few millennia. Which, after all, is a mere blink of the eye in evolutionary time.

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