

Ireland - The Outpost

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Ireland has lain in the path of great migrations, from Berber Africa, from the mouths of Frisian rivers, from the viks and fjords of the sterner northlands. From her own drowned valleys, the harbours that knew the ships of Gades and of Gaul, her people have moved westward and linked the old world with the new. At times she catches the light that floods across from Europe, and adds to its brightness the ardent glow of her response. At times the sea-mist gathers along her mountain-barriers, and she sinks back into the haze of the Atlantic, elusive as the Fortunate Isles.

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Ireland on the Globe.

NATURE allows no 'self-determination' to any point on the surface of the globe. An isolated volcanic peak rising from oceanic depths is washed by a stream-current that conforms at its place of origin to continental shores. It is swept by winds that can be traced into the trade-zones, or perhaps to the whirls of air around the poles. A patch of desert in the centre of a continent, where the streamlets, as mere intruders, die away in deltas of brown sand, leads our thoughts along the ravines and across the hill-crests to fertile lands that feel the rain. The study of a limited area may, for scholastic reasons, be carried outwards from the homestead to the globe ; but to comprehend the homestead and its home-folk, from the thatch of the roof to the colour of the children's hair, we must find the locality on the domed surface of the earth, and must realize that this earth is a very large and dominant region round it. In fact, if we start from the house and come full circle round the globe, we shall have gone 25,000 miles before we reach its door again.

The text-books will tell us that Ireland lies between certain parallels of latitude and certain lines of longitude on the surface of this great rotating ball. A true picture of the earth should, then, always stand near us, a globe and not a map. The old masters, who loved emblems in their art, placed a skull beside the religious and a globe beside the philosopher ; the latter, whatever his future outlook, could at any rate appreciate the fullness of the earth. We may do well, then, to regard from outer space the position of Ireland on the globe.

Ireland is seen to be an island, lying farther north than Newfoundland, but set on the warm side of the Atlantic. The prevalent winds from the south-west, themselves warmed by passing over water not far from the limits of the Gulf Stream, push forward a body of this water as a drift-current that spreads into the arctic seas. In our summer, the marine ice melts back as far as Spitsbergen, and the whole western edge of Europe gains warmth from the region of the Azores. Storms may beat and rain may fall somewhat freely on the Atlantic shores of Ireland, but there is much to be said for her uniform climate, despite her variable weather. The whole island is affected by changes of pressure that take place over the borderlands of the European continent, and these lead to frequent disturbances of the general flow from the south-west. Prolonged storms, connected with Atlantic cyclones, or fine episodes lasting over two or three weeks, may occur in any month of the year, and this uncertainty of conditions imparts a sporting character to the agricultural operations that are the main industry of the country. On the other hand, man is never driven from his homestead by a succession of arid seasons or by the long persistence of inundations. Some of the wettest lowlands will feed abundant cattle

for the export trade. The peat-bogs that developed when the rainfall was greater than at the present day are now drying and cracking on the upland areas, and are being reduced greatly by the sweeping winds. Where they are less exposed, as on the surface of the great limestone plain, they furnish a cheap and easily won fuel. With a roof above him for shelter in the days of storm, the peasant may be tolerant of the climatic conditions even in Kerry or the west of Galway ; he needs no rainbow to assure him that the sun will ultimately shine. With a house that he can call his own, and a few acres of land round it, he may continue to live simply, but may be at once content and prosperous. The general mildness of the Irish climate has probably been an attraction to discoverers and invaders, accustomed to long months of drought in lands south of the Mediterranean, or to rain-drifts that turned to snow against the Scandinavian hills. Even the east winds that occasionally sweep over Europe from the steppes are broken and kept from Ireland by the mountainous west of Britain. North winds are frequent on the Ulster coast, and bring sudden changes of temperature down to the plainland of Kildare, such changes being especially noticeable in the months of May and June. On the other hand, the general moist warmth of the south-western counties is often oppressive to the stranger, and exerts a restraining influence on the activities of a tall, well built, and intelligent population.

Though Ireland has its own characteristics, the island is by no means isolated. Just as the Lofotens are part of Norway, the British Isles are part of the drowned coast of Eurasia. Europe, omitting Russia, is a small north-western offshoot of the continental mass that stretches from the Iberian plateaus to the mountainous salient of Shantung. The great lines of structure that were developed in the broad region of Asia in Cainozoic times can be followed into the promontory-lands of Europe. In the far west, these lands converge, as it were, on Ireland, which is thus the last outpost of Eurasia against the oceanic depths of the Atlantic. The structural axes traced from Asia into Europe run on into the outpost, and the fact that it is an island, and its proximity to the larger island of Great Britain, are the two fundamental geographic influences on the course of Irish history.

II. The Foundations of the Outpost.

IN the north-east of the county of Antrim, an antique group of gnarled and crumpled rocks, including highly altered sediments and granites, has been exposed by the removal of the basaltic lavas and the chalk. In the county of Londonderry, and still more conspicuously as we go westward into Donegal, the same group forms a great part of the country. The trend of the earth-folds in this area is north-east and south-west ; if we follow this trend from the sea-board, it leads us to the Grampian Hills and to the Great Glen that provides a waterway across Scotland. We pass on into Europe, and the same lines of structure are at once apparent in the snow-capped backbone of Scandinavia.

We have here, in these highly altered and crystalline masses, the relics of a great continent that once stretched across to Canada, in what is called the Devonian period, when fishes were the dominant creatures in lakes and seas, and when nothing much more noble than a scorpion moved upon the surface of the land. This Devonian continent has been styled ' Caledonian', on account of the control exercised by its system of folding on the structure of the Scottish highlands.

The heather-clad ridge of Slieve Camph or the Ox Mountains, and the pallid domes of Mayo and Connemara, worn by frost and rain out of ancient and resisting sandstones, are a portion of this continental mass. Throughout the west of Ireland, extensive intrusions of granite have still further emphasized the moorland character of the uplands, and in the south-west a huge granite bar, which oozed in its former molten state into one of the north-easterly upfolds, has weathered out as the axis of the Leinster Chain. On its flanks, the remains of the long arch or crust-tunnel in which it was moulded are seen in the slaty rocks that lie on the east side between it and the sea, and on the west side between it and the limestone levels

of Kildare. The streams fed by cloud-drift on the upland have washed out broad open basins on the crumbling surface of the granite, and, as they become more concentrated, have cut steep ravines across the stratified series on the margins. There is a striking contrast between these wooded glens and the inhospitable moorland at their heads. The backbone of Leinster bars out for eighty miles the interior of the country from access to the eastern sea. Even the natural gates of Wexford and Waterford, on the drowned valleys of the Slaney and the Suir, were limited as means of entry to Ireland by the proximity of a race bred in the Leinster highland. The broad inlet of Dublin Bay, where the granite is outflanked by the limestone of the plain, affords, as we come up the channel from the south, the first free way to the interior.

Throughout the Devonian period, denuding forces were active on the surface of the Caledonian continent, and semi-arid conditions are believed to have prevailed. In desert-areas, reddish and purplish sandstones were formed, where the waste products accumulated as broad cones at the feet of the decaying hills. Occasional floods, operating over wide areas of sun-dried detritus, spread beds of pebbles across the lowlands, and here and there more regularly stratified sands and muds were laid down in shallow lakes. These Devonian deposits are now cemented into rocks of high resistance, and the whole system of strata is styled the Old Red Sandstone.

In time, however, the continental surface sank, admitting the sea gently across the delta-flats of the Upper Old Red Sandstone. A shore remained across Donegal and central Scotland ; but the deeper and purer water to the south encouraged a rich growth of marine organisms over nearly all the Irish area. The abundance of corals, sea-lilies, and shell-fish in the Lower Carboniferous epoch led to the formation of a great thickness of limestone, a rock easily attacked by weathering and soluble in natural waters. Hence, over most of the limestone area, long wasting of the surface has produced a lowland, the great central plain of Ireland, offshoots of which proving the former extension of the limestone, stretch up among the western hills. The modern seas have cut into the plain on the west at Galway and Donegal Bays, and on the east between the Liffey and the Boyne. Near Sligo, however, which is one of the most beautifully placed cities in our island, masses of the upper beds of limestone still remain 1,500 feet above the sea, and their huge vertical scarps, like those of the Pennine Chain, are superposed on the earlier features of a singularly romantic country.

As the ' Carboniferous' sea gradually shallowed, sands and shales replaced the limestone, and ultimately swampy land appeared, on which the forests of the Upper Carboniferous epoch spread. A second system of earth-folds then crumpled the region of western Europe, the thrust coming this time from the south. The prevalent structure of southern Ireland is due to this epoch of earth-movement. From the Atlantic coast to Waterford the folds run east and west, and the limestone, exposed on the upfolds and caught in the downfolds, has worn away more easily than the underlying Old Red River-Sandstone. Hence the rivers of southern Ireland have southern worked their way along the downfolds, leaving ridges of the harder and barren sandstone rock between them. These rivers began their history on a fairly uniform surface, which had been planed across the stratified mass by long ages of denudation. The Upper Carboniferous strata, with their forest-beds converted into coal-seams, were gradually but generally removed ; and the thick mass of grey limestone became attacked throughout the folded region. The tilt of the fairly even surface of denudation that was thus developed was southward, as we may judge from the courses of the Shannon, the Nore, the Barrow, and the Slaney, and from the lower courses of the Blackwater and the Lee.

In the working down of the formerly smooth surface over the crumpled southern lands, the tributaries of these southward-running streams have cut their way back farther and farther westward along the downfolded portions of the limestone, which became their natural field of operations as the underlying structure was etched out. Many of the southward-running rivers, the original streams ' consequent' on the general slope of the country, have been cut across and tapped by the growing tributaries of those lying eastward of them ; their upper waters

have in consequence been drawn off along the capturing tributary to a more eastern outfall, while their lower courses have been 'beheaded'. Where one of the lower portions has survived, it may now appear as the mere concluding reach of one of its own tributaries ; it runs at right angles to the course of the 'subsequent' tributary, which has assumed predominant proportions along the limestone groove. J. B. Jukes, [1] when director of the Geological Survey of Ireland, gave the first systematic account of the relation of the rivers to the former surface and to the underlying structure of the south, and his carefully reasoned paper has served as a classic model for observations on what is now known as 'river-capture'.

The net result, then, of the crumpling that took place in late Carboniferous times, combined with exposure to weathering during several later epochs, has been the production of a series of valleys, in which woodlands gather, and in which tillage can be carried on in somewhat stiff clay soils. The walls of these valleys are formed of barren moorlands, set with ledges of grey and purple rock. The structure is well realized when we ascend the Knockmealdown range from the plain at Clogheen, west of Clonmel, by the pass that leads over to Lismore. The vale of the Blackwater to which we then descend from the Old Red Sandstone ridge repeats along its narrow limestone floor the features of the great plain that we left behind us in the north.

In Kerry and the west of the county of Cork, the residues of limestone are still more limited, and the Old Red Sandstone asserts itself in the serrated ridge of Carrauntoohil, in the deeply-dissected mountains of Killarney and Glencar, and in the desolate moor of Gouganebarra. Six miles south of the railway from Killarney to Cahersiveen, we may find ourselves in tangled forests where the only passage lies along the guiding streams. Then, through some notch of the grey crags we may pass to a further downfold, where a strip of soft shale or limestone has produced a sudden contrast, where the land has long invited settlers, and where the white farmsteads are grouped along a natural highway that leads westward to the sea.

The continent recorded in this second series of European earth-folds is styled 'Armorican', from the jutting relic of it still exposed in the wind-swept promontory of Brittany. This relic is paralleled in Cornwall, and Armorican land rises boldly in the South Wales coalfield and in the terraced Brecknock ranges that bound the valley of the Usk. A patch remains as the Mendip Hills, and borings have shown us that a ridge comparable with those of southern Ireland underlies London and connects England with the Ardennes. Away in the heart of modern Europe, the Europe of late Cainozoic times, blocks of this far older Armorican continent form the Vosges, the Schwarzwald, and the Slavonic stronghold of Bohemia, while Armorican masses, long buried under younger strata, have been caught up and reared to dangerous eminence, towering to-day as the noblest features in the young earth-folds of the Alps.

The connexion of southern Ireland with the Cornwall of Arthurian romance, and across Cornwall with the land of Iseult the maiden-wife, is, then, far more than a matter of human story. The Armorican continent, however, has become broken like the fragments of an ancient tale, and remains a mere palimpsest for the earth-records of far later times.

In the course of geological ages, the Cretaceous sea began to spread over all this region, depositing white chalk in its pure water, and sandy beaches in addition in the north of Ireland. Once more the invading ocean from the south-east was checked on the stubborn hills of Donegal ; but at the opening of the Cainozoic or Tertiary era chalk must have covered a considerable part of eastern Ireland. The uplift of the sea-floor, and the consequent development from Ireland to Scandinavia of rolling downs of chalk, like those remaining as the Salisbury plateau at the present day, was the first act in the growth of modern Europe.

The warped and rising land cracked open. Through hundreds of vents, basaltic lavas flowed from the depths where rocks lay molten in the crust. They filled and flooded over the

hollows of the downs, destroying the vegetation, levelling up the country, and converting it into a rugged waste. These conditions extended northward beyond the region of the Faroes, and they have prevailed in Iceland to the present day. The volcanic outbreak in Ireland heralded the vast movements that shattered the Armorican floor, folded and over folded Mesozoic and Cainozoic strata in the Pyrenees, the Alps, and the Carpathians, and sent the waves of their ground-swell across France and England to the western margin of the outpost.

The outpost land, however, was not again submerged, and it was closely held by the new continent of Europe. It is true that the extension of the Atlantic Ocean began to threaten its existence on the west ; but the Irish Channel and the North Sea are very modern features. Some of the invertebrate animals still found in Ireland may have entered the area by land in late Pliocene times and may have survived the Glacial cold on ground now lost to us in the west. The comparatively recent date of the movements that have determined the present boundaries of Ireland is well seen from the geological evidence in the south-eastern area. A plane of denudation had been worn across the folded rocks of Waterford, Pembroke, and Cornwall, probably with the aid of the early Pliocene sea. An uplift followed, which allowed the streams that wandered on this surface to convert their valleys into gorges in maintaining their connexion with the sea. Then a downward swing occurred, and the opening of the cold Glacial epoch found these young valleys partially and marine water already in the Irish Channel. A long glacier that came down between England and Ireland from the north drove out the sea before it, and carried mud and sand, enclosing foraminifera and molluscan shells, to heights of more than 1,500 feet across the bordering lands. The ice-sheets that occupied the interior of Ireland profoundly modified the surface, as became apparent when they finally melted and shrank back. The rock-floor was polished and scratched by the stones and sand carried in the ice ; but this 'englacial' material, together with a vast quantity of clay, representing all that was loose or could be loosened on the land-surface over which the glaciers moved, was left as the solid residue of the composite mass that we call an ice-sheet. This 'boulder-clay', or more strictly 'boulder-loam', often remains as a thick deposit, levelled on its surface by flooding waters from the ice-edge and by the subsequent sweep of wind and beat of rain. In other places, where it was irregularly distributed in the ice, the boulder-loam forms steep-sided hills, elongated in the direction in which the ice-sheet moved. These hills, to which the name 'drumlin' has been restricted, [2] may be more than a hundred feet in height. Lakelets gather between them, and the post-Glacial streams have been forced to take winding courses round their margins. In addition, the rivers that ran beneath the melting ice have left casts of their channels in the form of ridges and elongated mounds of roughly stratified sand and gravel, along which many of the early road-tracks have been carried. These ridges are now well known to geologists as 'eskers', and the almost continuous series, the Eisgir Riada, that can be traced from Galway Bay to near Dublin was selected about A. D. 125 by the rival kings of north and south as a line of division across the island.

When warmer times returned, an upward swing of the uncertain continental edge had again joined Ireland with Britain and the mainland, and peat and forest spread over wide areas that are now submerged. The great deer, *Cervus giganteus*, which is now extinct, roamed from the Atlantic shores of Ireland into Baltic lands. The connexion between Great Britain and Ireland was severed before early man came into the outpost. The great low-lying delta between Britain and Scandinavia, on which the Thames was tributary to the Rhine, became also invaded by the sea, and the passage, where eighteen miles of water have controlled our English history, was carved by wave-action, [3] on the course of an earlier valley, between the newly formed North Sea and the English Channel. Great Britain was thus also marked off from the Continent, and Ireland, as an island beyond an island, became still more emphasized as the outpost.

To understand, then, the present position of Ireland in the economy of Europe, and the natural regions of Ireland in regard to one another, we must realize that the country and these natural regions have been moulded by a long series of changes that affected an area much

more extensive than the outpost. The early movements that we call 'Caledonian' gave us the intractable highlands of Connaught and Donegal, the stubborn slate-strewn fields of Down, and the forbidding barrier of Leinster that guards the plainland on the east. The inflow of the Carboniferous sea furnished the limestone that prevails across the central plain. The mountain-rim was completed in the south by the 'Armorican' wrinklings of late Carboniferous times. In the Cainozoic era, the high plateaus of Antrim were superposed upon milder domes of chalk, while the block of the Mourne Mountains was added to the country, where one of the cauldrons of molten rock cooled down as a mass of granite under its cover of Silurian shales. From Triassic times onwards, denudation has swept from the country nearly all the Coal Measures that once stretched above the limestone of the plain. In compensation, this limestone, and much of the Old Red Sandstone uplands in the south, have been covered by boulder-loams, deposited as the ice-sheets of the Glacial epoch melted, and the dry cold episode that for a time drove life out of the area has in the end largely contributed to the fertility of Irish land.

The final earth-movements that established Ireland as an island left her with high ground on her margins, and with natural harbours formed by the drowning of valleys that led up far among the hills. Where the sea has reached inwards against the limestone plain, still more serviceable gates occur. Galway and Sligo on the Atlantic, and Dublin Bay, opening towards the parent lands of Europe, form effective breaches in the sheltering girdle of great hills.

Neither here nor in Britain has true geological stability been achieved. The raised beach at Larne, whence the steamers start for Scotland, contains chipped flints side by side with marine mollusca, and thus shows that an uplift of some 20 feet has occurred on the north-east coast since man settled in the country. We have no proof that the west of Ireland has been lowered since the epoch of the submerged forest-beds ; but the legends of lost isles may well have had an origin in human observation. The traditionary island of Brasil appears somewhere in Brasil. the position of the Porcupine Bank in a French manuscript chart drawn about 1660. [4] This record was made when the Strait of Dover was closed to the Netherlands during war, and when Dutch ships bound for the Indies reached the Atlantic round the north of Scotland. The belief in Brasil descended to the cartographer who recorded Nelson's voyages in 1815 ; but the location had by this time shifted southward. The Porcupine Bank is formed, as dredgings have shown us, [5] around a core of rocks similar to those of Carlingford. Though it now lies 500 feet below the surface of the sea, it once rose as an isle beyond the outpost, and subsidence, combined with the Atlantic scour, may have involved it in recent and somewhat swift destruction.

The west coast of Ireland still suffers from the tremendous surge of the Atlantic. The sharp cones of Tearaght and the Skelligs attest the undermining and flaking action of the waves. The level shelves of Clare and of the Aran Islands are being lifted from one another, slab by slab. The dome of Croaghaun in Achill has been cut back to its very heart ; and away in the north, on the quartzite mountain of Slieve League, the noblest cliffs in our islands rise 2,000 feet from a sea where few ships venture. The size of these huge rock-walls is scarcely realized until the clouds gather at evening half-way between their crowning edges and the restless foaming at their feet.

Yet, in face of all this battery, Ireland remains as a coherent geographical entity, bounded by a strong frontier on the sea. Like Verdun, the outpost 'tient toujours'.

III. The Peopling of Ireland

To the early venturers, and even down to the days of steam-navigation, there was a marked difference between the ocean and the 'narrow seas'. When forests prevailed across the mainland, and only the higher uplands and the coastal fringes enjoyed the sunlight, continuous routes for travel could best be found along the sea. [6] After the close of the Glacial epoch, the

north-western prolongation of Eurasia dipped, as we have seen, towards the Atlantic, and a part of its low peat-covered ground became submerged. The marine band of the Mediterranean formed a sound between Alpine Europe and coast-Alpine Africa, a survival from the larger 'midland sea' that once stretched eastward over India. On the north of the new Europe, the sea had entered between Britain and Scandinavia, flooding the joint delta of the Humber, Thames, and Rhine, and had found an outlet southward by the Strait of Dover. After man had settled in the Danish region, subsidence opened a channel from the North Sea to the Baltic ; and hence, as human communications grew, the ships of the Levant, laden from the caravans of Baghdad, could transfer their bales to reindeer-sleighs at Torneå. There, in a figure, is the history of European civilization.

Meeting one another as conflicting tribes in lands that narrowed westward, making their ways along the promontories until they came to the inevitable open water, fashioning boats and going forth to occupy, not only new shores, but unexpected isles, the men whom we call primitive carried their practical arts and their ideals of culture from harbour to harbour of the indented coast. We group successive waves of humanity together as palaeolithic, neolithic, and so forth ; but it is difficult to conceive the length of time required for the establishment of any of these types as dominant in a given district of the earth. Thanks to the narrow seas of Europe, the inventions of one group became superposed on groups of diverse origins, without the delay involved in great migrations ; and thus even the folk of the outpost, in prehistoric as well as in historic days, came again and again under eastern influences without being entirely overrun.

Can we picture the first arrival of the Mediterraneans, rowing in their light vessels, perhaps scarcely larger than the currachs of to-day, from ria to ria of Iberia and Armorica ; reaching that other Armorican land of Cornwall ; crossing the great indent of the Bristol Channel ; and finally, from the bleak promontory of Pembroke or the unprofitable sands of Anglesey, descending on the inviolate Irish coast ? The shore itself, with its flats of boulder-loam, which are relics of land that once stretched across the Irish Sea, presented grassy terraces fit for camps and cultivation. Beyond them, the wooded glens harboured no enemies but wild beasts, and the attractive and open moorland at their heads was visible on the skyline from the beach. The short rivers, consequent on the Leinster Chain, were not yet contaminated by inland farms. The water came down, in this temperate climate, freely throughout the year to its sluggish loops among the grasslands, and the noise of its rapids in the ravines led the venturers upwards to the falls. At the north end of the chain, a fertile lowland stretched away indefinitely, covered with forests of oak and holly. Through its midst ran the Liffey vale as a guiding line for settlement. The Leinster upland, with its freedom of air and sunlight, could here be reached on gently rising slopes at a height of 500 feet above the sea. The rugged dome of Howth commanded the bay, and offered a good post for defence and observation. Charcoal and split bones from primitive hearths can be found in the talus on the edge of its cliffs to-day. We may conceive the existence of a rivalry from the very first between those who occupied the Irish gate at the Liffey mouth and those who, entering by the glens, felt their way towards it through the hills.

From this coast, and probably also from the south, the long-headed neolithic race laid the foundation of the Irish folk. The language that these settlers brought with them from the Mediterranean and from temporary homes in Gaul was no doubt still flexible, and in time it may have received a local tinge in the isolation of the west. We have, however, no knowledge of it at the present day. Various stages of neolithic culture were probably represented among the seamen who reached the Irish coast. These venturers must have brought their women with them ; but from early days strength was gained by intermingling with new arrivals from various European shores. In the course of ages, local habits no doubt grew up in the island. We may regret, from a modern standpoint, that the hunters who sheltered in the narrow caves of Ennis [7] were driven to cannibalism by the stress of hunger or the fervour of religious faith ; but a very long interval separates their primaeval habits from those of the people, still

in the stone age, who met the wave of broad-headed immigrants from the Baltic. The founding of homes, the clearing of woodlands, the marking out of limited areas as the property of something like a clan, went on through unrecorded ages, with the usual accompaniment of jealous misunderstandings and selfish and ill-considered raids. Bloodshed, murder, and the capture of women, were no doubt sung as the foundation of enduring fame, in days when the franchise of a man could be earned by the mutilation of the slain. Yet in all these struggles the bonds of association were growing stronger within the boundaries of the tribe. The talk of the young men was of warfare and the chase, but the household year by year was advancing in the arts of peace. A chief who had earned distinction with the spear was proud towards the close of life to receive the title 'good' or 'wise'. The long primary epochs of dissension prepared the way for coalitions, though in prehistoric Ireland, as in every other country, sparseness of settlement and difficulties of communication precluded the formation of a state.

It is too early to say that we possess accurate knowledge of the successive immigrations into Ireland. Anthropologists, however, are hard at work in the reconstruction of prehistoric history. [8] It seems probable, according to Fleure, that a trading race of dark and fairly broad-headed Mediterraneans, following on the earlier long-heads, introduced the building of dolmens, of which numerous examples occur in Ireland. These megalithic structures are records alike of religious observances and of veneration for the dead. Just as at Rolde in Holland, and among the cornlands of the Danish isles, so the designers in Ireland often used boulders transported by the glacial ice. In places the site of the dolmen may have been determined by a sense of mystery attaching to the stones. Sometimes the rocks were quarried on a high exposure, and the monument attained dignity, like that at Mount Venus near Dublin, from the natural eminence that it crowned. The position of many dolmens, on the other hand, on low ground and in sheltered places shows that they were often associated with the homestead of a chieftain or the communal holdings of a tribe. Now and then, as in the meadows at the foot of the great dome of Knocknarea, an open area was marked out as a sacred cemetery, and the abundance of megalithic monuments gave rise to the story of a battle, [9] the casually spaced dolmens being held to enshrine the heroes almost where they fell. The element of daring embodied in the construction of a dolmen is nowhere displayed more finely than in the superb example at Ballymascanlan in the county of Louth. If the primitive type reminded the builders of a house, and, by thinking backward, of a cave, design has here progressed some way towards an artist's dream of a cathedral.

The building of dolmens continued into the age of bronze. The great mounds, moreover, of the bronze-age architects cover stone structures of the dolmen type. The solitary megaliths, formed by setting huge slabs on end, represent a more primitive type of art, and for a long time they led to nothing further in the way of stones that point to heaven. Noble examples remain here and there in Ireland, and some may be associated with the first entry of neolithic man.

The building of round towers is also regarded as a Mediterranean feature. The numerous instances in Ireland are undoubtedly of Christian origin ; but the architects of the sixth to the ninth century of our era seem to have revived in connexion with ecclesiastical requirements an earlier and once familiar form.

Somewhere about 1700 B. c. a race of powerful broad-headed invaders reached the outpost, bringing with them the civilization that we associate with the use of bronze. The best clue, however, to their settlements is given by their pottery, and hence, from a particular type of drinking-vessel, they are commonly styled the 'Beaker' people. Their original home seems to have lain north of the Alps, and they gradually occupied the south side of the Baltic, prevailing over the long-headed 'Nordic' folk who characterized western Germany and Scandinavia. They moved westward along the easily traversed coastlands that led to the mouths of the Rhine and Scheldt, and they established themselves in England as an important social stratum, to which the neolithic Britons became underlings. [10] In a far less marked

degree, they made their impress upon Ireland. They worked the rich deposits of alluvial gold on the east flank of the Leinster Chain into ornaments and objects of fixed weight that came to have the currency of coins. The double spiral patterns marked on the stones of their huge tumuli have been traced from Mycenaean Greece through Scandinavia to the Boyne. [11] Though these broad-headed immigrants brought with them new and fascinating arts, and had gained long experience in European warfare, they failed in Ireland to produce any general physical change by mingling with the folk whom they overran. The long-headed Mediterranean race had probably already received fair-haired and similarly long-headed additions from the 'Nordic' folk on the far side of the North Sea. [12] Despite the coming of the Beaker people, the long-headed type prevails to-day throughout the country.

Some authors are impressed by the fact that the bronze-age or Beaker type of settler entered Britain without metallic weapons, and later acquired the use of bronze. Hence it is urged that these migrants came to us as traders, and not as a conquering tribe. In Ireland, however, the relative magnificence of their sepulchral monuments, compared with those of the neolithic folk suggests a desire to record something definitely accomplished in the land. Though the tumuli of New Grange, Dowth, and Knowth stand near the port of the Boyne, they are not the work of merchants bartering for a site, but of men who held the country and in death proclaimed themselves as kings.

The language introduced by the Beaker people is now thought to be 'proto-Celtic', and to have thus laid a foundation in Ireland for the Goidelic or Gaelic speech introduced in far later times. Madison Grant [13] holds that 'all the original Celtic-speaking tribes were Nordic'; but it is not clear that any Nordic settlers who preceded the Beaker people had acquired a Celtic tongue at the early date of their immigrations. E. C. Quiggin [14] wrote in 1910 that the Goidels of 600 to 500 B. c. were 'the first invaders speaking a Celtic language' who 'set foot in Ireland'.

More than a thousand years after the arrival of the Beaker folk, men skilled in the use of iron broke in upon the outpost. Their chief contribution to Irish civilization was the introduction of the new metal and of what are called the 'La Tene' designs, which find their type in lake-dwellings at the northern end of the Lake of Neuchatel. If we call these people Celts, we associate them with the vigorous round-headed folk, tall and possibly fair-haired, [15] who spread from Alpine Europe, that is, from a mountainous district lying somewhat to the south of the homeland of the Beaker people. It is more likely, however, that the iron-age invaders of Ireland were a long-headed group that had felt the pressure of the Alpine folk. They formed, as it were, the outer fringe of the expansion from Gallic lands that made itself felt, some centuries later, in menacing descents on Rome. Madison Grant [16] holds that these tribes were Nordic, and he places their arrival in Britain no earlier than 800 B.C. Fleure [17] believes that the Brythonic-Celtic language reached south-eastern England not much before the invasion of the Belgae perhaps, then, about 300 B.C. Between these dates we may place the adoption of the Goidelic or Gaelic language by the Irish folk.

A Goidelic race cannot be separately recognized, and we cannot assert with any confidence that there are 'Gaels' or 'Celts' in Ireland. It is suggested that the 'Goidels' whom Quiggin mentions entered Ireland across Scotland, after a considerable period of residence in that country. It must be admitted that great uncertainty enshrouds the Irish language-question; but we may conclude that the introduction of Gaelic is contemporary with the arrival of men who could support their culture by the use of iron weapons. In about the sixth century before our era, something new in the way of customs and even language is a custom arrived from Europe to the outpost, and for seventeen hundred years loosely banded groups of tribesmen, whom we cannot describe as Celts or Gaels, remained united in this one thing, the acceptance of a Gaelic mould.

The traditions of the bronze and neolithic ages that were handed down under Gaelic influences during the age of iron would naturally impute a 'Celtic' social system to those far more primitive times. The earlier Irish population was never replaced by later settlers to the extent that broad-headed immigrants replaced the Mediterraneans in south-eastern England. [18] Mentally, however, the Irish people remained plastic and receptive, and the most profound impression was produced by the invaders of the age of iron. The Gaelic question in Ireland is one of the best examples of the impossibility of making language a test of nationality or race.

No anthropologist nowadays will support the contrast alleged to exist between 'Celts' and 'Teutons', with all the boastful controversies that have clustered on both sides round these terms. [19] The very names have been used so indefinitely, and have been applied to such varied racial groups, that they may well be abandoned by those who strive for accurate conceptions. There is a glamour yet in a 'Celtic' twilight and a thrill of hope deferred in the promise of a 'Celtic' dawn ; but the Irish qualities of imaginative insight, leading to a warm sympathy coupled with a shrewd perception, and the power of unbroken persistence against a sea of troubles, date back far beyond the clan-system of Gaelic days. Though these qualities were doubtless specialized and intensified by isolated conditions in the outpost, they reached us with the men who sailed from the Mediterranean and who first opened up the forest-lands to the waves of European immigration.

If the Gaelic habit spread comparatively rapidly in Ireland among the southern representatives of the Mediterranean race, some credit must be given to those who introduced it from abroad. Tacitus, tired of Rome, and ready to support the myth of the noble savage, records the acceptance by British gentlemen of Roman speech and Roman manners as a degradation and a mark of servitude. Far more probably, it was a response to their just and friendly treatment by Agricola, and by his master Vespasian, who had met and respected them in the field. The Anglo-Saxon tongue, on the other hand, held its own against Norman French in England, and Chaucer, the poet of a civil service that had changed little since the Angevins, wrote in the vulgar language that remained prevalent and that was, in the fourteenth century, perforce accepted in the schools. An opposite example is found in the spread of Arabic speech through northern Africa by a comparatively small number of militant invaders ; and this may be traced to the enforcement of an Arab religion by the imminence of slavery and the sword. It is reasonable, then, to believe that an imported language spreads with the culture, and especially with the religious observances, that it represents. As we have already hinted, there may have been something in 'proto-Celtic' and 'Celtic' customs, and in 'Celtic' opinions on the after-world, that appealed to the Mediterraneans, whose gods had deserted them in the outpost at the coming of the iron spears. Even the terminology of Irish townlands owes its present appeal and beauty to expression in a Goidelic form. If we knew the earlier tongue of Ireland, it might be interesting to trace translations, and perhaps unintelligent corruptions, of Mediterranean or Nordic place-names. Such grotesque forms as the English 'Boosterstown' and 'Stillorgan', with which we may compare the twentieth-century 'Wipers', may have had their prototypes during Gaelic penetration into Ireland. The evolution of 'Celtic' civilization moved slowly in the island, and century after century of the resonant age of iron saw very little change in the material advancement of the clans. It has often been remarked that the epoch of Connaire and Cuchullain, when heroes fought in chariots and a strong man matched himself against an army at the ford, belongs to the Homeric stage of European culture. The same culture prevailed in Britain down to the coming of the Romans, and it is interesting to remember that, if communications had been more easy, Queen Medb might have entertained Caesar Augustus in her palace at Rathcroghan, while the fame of Finn MacCumhail might have added to the apprehensions of Aurelian.

[1] 'On the Mode of Formation of some of the River-valleys in the South of Ireland', *Quart. Journ. Geol. Soc. London*, vol. xviii, p. 378 (1862).

[2] Maxwell H. Close, 'Notes on the General Glaciation of Ireland', *Journ. R. Geol. Soc.*

- Ireland*, vol. i, pp. 211 and 212 (1867).
- [3] Perhaps along a valley caused by the overflow of a lake formed on the front of the shrinking North Sea ice, as suggested by P. F. Kendall in 'The British Isles', *Handbuch der regionalen Geologie*, Band iii, Abt. i, p. 310 (1917).
- [4] W. Frazer, 'On Hy Brasil', *Journ. R. Geol. Soc. Ireland*, vol. v, p. 128 (1879), where the date 1640 is suggested. Also T. J. Westropp, 'Brasil and the Legendary Islands of the North Atlantic', *Proc. R. Irish Acad.*, vol. xxx, sect. C, p. 223 (1912).
- [5] G. A. J. Cole and T. Crook, 'On Rock-specimens dredged from the Floor of the Atlantic', *Mem. Geol. Surv. Ireland* (1910).
- [6] See H. J. Fleure, 'Ancient Wales—anthropological evidences', *Trans. Roy. Soc. of Cymmrodorion*, 1915-16, p. 75 (1916), and H. J. Fleure and L. Winstanley, 'Anthropology and our Older Histories', *Journ. Roy. Anthropol. Inst.*, vol. xlviii, p. 155 (1918). These papers contain much valuable discussion of early immigrations into Ireland.
- [7] T. J. Westropp, 'Exploration of the Caves of County Clare', *Trans. R. Irish Acad.*, vol. xxxiii, p. 71 (1906).
- [8] See especially H. J. Fleure, in the *Oxford Survey of the British Empire*, vol. i, pp. 298-317 (1914), and 'The Racial History of the British People', *Geographical Review* (Amer. Geogr. Soc.), vol. v, p. 216 (1918).
- [9] I owe this suggestion to Professor R. A. S. Macalister.
- [10] Arthur Keith, Presidential Address, 'The Bronze Age Invaders of Britain', *Journ. Roy. Anthropol. Inst.*, vol. xlv, p. 12 (1915)-
- [11] George Coffey, *New Grange (Brugh na Boinne) and other incised tumuli in Ireland : the influence of Crete and the Ægean on the extreme west of Europe in early times* (1912), and *The Bronze Age in Ireland* (1913). R. A. S. Macalister, whose work is always illuminating, would prefer to regard the Irish spirals as an independent growth, marking a ruder type of the civilization that reached a climax in Mycenaean art ('Temair Breg', *Proc. R. Irish Acad.*, vol. xxxiv, sect. C, p. 387, 1919).
- [12] For a eulogistic appreciation of the Nordic type, see Madison Grant, *The Passing of the Great Race* (1918). To these long-headed people, who are characteristic of Scandinavia, the author assigns an eastern origin, distinct from that of the smaller neolithic Mediterranean race with which they have been associated by other writers.
- [13] *Op. cit.*, p. 175.
- [14] *Encyclopaedia Britannica*, vol. xiv, p. 757 (1910).
- [15] A brunet type of 'Celt' is, however, recognized in the Bavarian district.
- [16] *Op. cit.*, p. 175.
- [17] *Op. cit.*, *Geographical Review*, vol. v, p. 227 (1918).
- [18] H. J. Fleure, *op. cit.*, *Geographical Review*, vol. v, p. 227 (1918).
- [19] For the modern point of view, see the critical essay by A. Keith, 'The Ethnology of Scotland', *Nature*, vol. c, p. 85. (1917)

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