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## **Earth palettes: sources and origins of colour attribution in place-names in West Cork**

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**Abstract:** The contributions that geology, hydrology, biology and sister disciplines have made to the elucidation of place-names are well established but some published interpretations seem outdated in the light of recent advances in many disciplines, including land-use studies. Since the primary function of a place-name was to identify a particular place and not to confuse it with another, perhaps all that was sought or needed was a very minor discriminatory feature. A colour characteristic, either strong or subtle, could and would have been an obvious choice. With ever-increasing data-banks relating to rocks, soils, waters and vegetation and on the changes in land use over recent centuries, data are presented in the belief that some of the earlier postulations made about the colour attribution of place-names can be challenged or amended. Data from West Cork sources are used to show that the origins of colour may be many and that this aspect of toponymy could benefit by reference to recent publications in a range of sciences.

**Keywords:** place-names; colour names; earth sciences; toponymy; landscapes

### **Introduction**

Three distinct scientific disciplines have devolved in part from the Greek word, *topos*, meaning 'place': **topology**, the study of geometrical properties and spatial relationships (Mathematical Science); **topography**, description/representation of natural and artificial features of an area (Earth Science; Geography); and **toponymy**, the study of place-names of a region or district (Linguistic Science). The study of topography necessitates an understanding of the earth sciences – geology, geomorphology, meteorology, hydrology, biology, pedology and their sub-disciplines. By virtue of its mid-latitude location at the ocean edge, its complicated geology, its repeated glaciations, its wide altitudinal range, its profuse vegetation and an array of river systems fed by a marine rainfall climate,

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Ireland has been endowed with a multiplicity of landforms on which unique types and associations of soils have developed. Over the millennia, culturally distinct peoples settled on these landforms, their fortunes attuned in a manner quoted by Miller *et al.* (1975, p. 24): ‘The parade of civilizations through time has often marched to the cadence of the resource trinity – soil, water, and climate. History is replete with attempts to march to different drummers’. In their marches and sojourns, these civilisations named and renamed parts of the lands, landforms and soils on which they settled, however temporarily, herding their animals, tilling their soils and growing their crops. With increasing populations, aided by a nomadic propensity, forced at times by soil deterioration and/or emboldened by forest clearance, new land facets opened up, necessitating the naming of increasingly smaller parcels. Consequently, our forebears left behind words in various languages in disparate forms which toponymists are eager to unravel and interpret. In this they are aided by progressive advances in the earth sciences and in the expanding volumes of land-use history relating to this country.

Both robust and subtle interconnections between natural resources and toponymy were highlighted by P.W. Joyce in his treatises on the names of places in this country, especially his 1875 ‘The origin and history of Irish names of places’. Many authors, professional toponymists and interested amateurs alike, have written on the likely origins of local names but it seems that twentieth-century advances in information on factors of the Irish environment and on agricultural history have not been adequately applied in these studies. One aspect of the environment to which Joyce (1875, reprint 1912) devoted considerable comment was that of the use of colour (Chapter XVII, ‘Colours’) ‘...whether applied to the surface of the land, to rocks, rivers, or lakes, are names characteristic of most of these places and objects to the present day’. Joyce noted exceptions (p. 267) ‘...where the prevailing hue was given by trees, shrubs, bogs or marshes which have been removed by cultivation’. Pointing out that colours are infinitely varied and are subject to imperceptible gradations, Joyce discussed the subject under individual colour names: ‘Black’ (*dubh, ciar*), ‘White’ (*bán, fionn*), ‘Red’ (*ruadh*), ‘Yellow’ (*buidhe*), ‘Brown’ (*donn, crón*), ‘Green’ (*glas*), ‘Blue’ (*gorm*), ‘Grey’ (*riabhach*), ‘Pale grey’ (*odhar*) and ‘Speckled’ (*breac*). While offering many examples of places with colour names, Joyce gave only a few instances why a particular colour was used: inky black, (infusion of bog water, presence of a dye, p. 268); white, (whitish grass, p. 272); red, (red soil, mud, p. 278); green, (grass or foliage, p. 281); bluish grey, pale grey, (colour of the soil, p. 285); speckled, (vegetation/soils/rocks, p. 288/9).

In the period since Joyce’s treatises, many toponymic studies [among them Mac Neill (1913); Power (1917/8, p. 23), Ó Foghludha (1935); Price (1938, p. 41), Bowman (1934/2000), Mac Cárthaigh (1966/7, 1977, 1970/71, 1972/3, 1974), O’Donoghue (1986), Flanagan and Flanagan (1994), Ó Muraíle (1999), Ó Riain *et al.*, (2003)] have noted connections between the names of places, mostly townland names, and their environmental setting but few have addressed the details of the possible origins of/causes for colour attribution.

The environmental setting of places has also been included by Lambert (2015) in his discussion of human interactions with nature and the natural world. He challenges the divide between the Arts and the Sciences and states that environmental history blends the planet's history (the scientific story) with the people's history (the socio-cultural story). Pointing out that the use of place-names is a form of communication, Keller (1994) asserted that it is near unthinkable to describe a landscape without at the same time using place-names. 'Still, the name is not physical, and it is definitely not a natural thing. It is purely cultural, immaterial and a product of oral tradition'. The use of colour in place-names offers an opportunity to study the interplay of the scientific and the socio-cultural stories in some detail.

### Procedure

Approximately 160 names of places were selected for study. These were mostly official townland names, recorded in O'Donoghue's (1986) monograph on *ca.* 2,400 names from the topographically-diverse West Cork region. The 'colour' part of their names is believed to have been derived from characteristics of rocks, soils, waters and vegetation and/or from past land-use. Factors and features of the West Cork environment, including published works on the earth science literature and on land-use history which may have led to colour discrimination, are assessed. Pertinent data from the works of other authors are also examined.

Many of the treatises reviewed and quoted, including O'Donoghue's, used the Classical Early Modern Irish (1200-1650 A.D. onwards) spelling system. This was replaced by the Official Standard spelling system in the early 1940s, *Gramadach na Gaeilge agus Litriú na Gaeilge: An Caighdeán Oifigiúil (Rannóg an Aistriúcháin, 1958)*. In quoting published material, most of the terms which used the pre-1940s spellings are recorded as found, with those names in Irish converted to italic font. The correct spellings of some place-names with colour significance, from *An tOrdú Logainmneacha (Contae Chorcaí) 2012*, abbreviated to *An tOrdú ...* (Placenames Branch 2012), that are pertinent to this study, are recorded below.

The subject is addressed using the same colour headings as used by Joyce and, where relevant, the examples given are presented in the following order; geology, land and soil, water bodies, vegetation. To avoid unnecessary or repetitive reference to O'Donoghue's (*op. cit.*) monograph, the numbers in parentheses after the names of places refer to pages in that work, unless otherwise indicated. The Gaelic language versions of place-names are used sparingly in the presentation and only to show connectivity to official Ordnance Survey names, as listed in *An tOrdú* and in the General alphabetical index (1861).

### Places defined by *dubh*, *ciar*, (*dorcha*), black

Names such as Benduff, (98), *Beann Dubh*<sup>1</sup>, ‘Black peak’, Cobduff (297), ‘Dark gap’. Cloghduff (269), Doolieve (175), Lackaduv (225) and Lackenduff (128) seem to have origins in the West Cork geological basement (Sleeman, 1991; Sleeman and Pracht, 1991; Pracht and Sleeman, 2002) and to reflect its dark colours in a manner similar to that ascribed by Mac Cárthaigh (1974) to Black Ball Head in Canalough townland: ‘evidently named from a conspicuous knob of dark slate’. Other places exhibiting shades of ‘blackness’ are: Coomdorragha (240) and Cooldorragha (49, 249). Likewise, dark soilscape and landscape features are recorded in Clashadoo (58), Coolduff (258), Curraduff (305), Cusduff (249), Dromduff (256, 298), Glanduff (115), Gouladoo (63), Knockduff (76, 168), Lackaduff (128) and Tooreenduff (240), *Tuairin Dubh*, ‘Black or dark reclaimed grazing land’. O’Donoghue glossed Knockanecosduff (299), *Cnocan Cos Dubh*, as ‘Black-footed hillock, having turf or peat’ and noted that a former name for Castletreasure (186/7) was *Cos Dubh*, ‘Black foot of land’. Names reflecting blackness and darkness in the hydrological sphere include Ahaneduff, Ahacrinnduff, Duvean (Blackwater, tributary of River Bandon), Meenaduff and Pouladuff. A minor name in Derreen (278) is Drohideenacloghduff (Little bridge of the black stones) and in Ballinveiltig (213), Toberdurragh, *Tobar Dorcha*, is ‘Dark well’. Darkness or blackness associated with vegetation is incorporated into the names Durrus/Doorus, (Black or dark copse), Derryduff, Dereenduff, Dinnis Island, Doughill and Garranduff.

### Possible causes or origins of blackness, darkness

Acknowledging that some dark or blackish geological strata outcrop in various places, bare, vegetation-free examples, including vertical rock faces, though rare, are an inevitable outcome. A review of the recent literature suggests that the two reasons for blackness in rocks, offered by Joyce (infusion of bog water, presence of a dye) and others can be extended. There is now a comprehensive literature on humic substances including their chemistry and roles in determining the colours of soils and waters (Hayes *et al.*, 2001; Clapp and Hayes, 1999; McDonnell *et al.*, 2001). Humic acids are produced by microbial degradation of dead organic matter and, being resistant to further degradation, they stain solid surfaces and decrease the transparency of waters (Hayes and Hayes, 1997). Since dead organic materials absorb all incident light-waves, they appear black. Hence, they are responsible for dark colours of many hard materials and surfaces. One of the major influences governing soil colour is the nature and content of humic materials and provision is made in soil colour assessments for (achromatic) black in the Munsell colour notation (Munsell Color 2000) either as low chroma /1, in the YR and Y hue charts or as Neutral N1, N2, in gley charts.

<sup>1</sup> Referenced place-names with colour connotations from *An tOrdú Logainmneacha (Contae Chorcaí)* 2012: for *Beann Dubh* read *An Bhinn Dubh*. 2: for *Cúm* read *Com*. 3: for *Poll a’Dhuibh* read *Poll-Duibh*. 4: for *Leaca Buidhe* read (*An*) *Leaca Bhui*. 5: for *Muine Ghorm*, read *An Muine Gorm*.: 6: for *Inse an Bhreacáin* read *Inse Bhreacáin*. 7: for *Clais a’Ghúail* read *Clais an Ghúail*.

O'Donoghue suggested an origin of 'blackness' in the place-name Gurteenaduige (p. 47), *Goirtin a'Dubhaidh*: 'Little field of the black stuff often found in bogs and used for dyeing'. A similar explanation is likely for the minor places Portduff Lough (in Skeaf, p. 110), *Port Dubh*, 'Black bank' and *Poll an Dhuibh* in Gortafudig (p. 239). It is to be noted that scientific names for this humic product include 'dopplerite', 'gyttja' and 'sapropel', and in terms of its genesis, 'humiluvic'; (Collins *et al.*, 1989; Feehan and O'Donovan, 1996, 178). An alternative source of blackness of rocky islands or rocky shorelines may be algae (e.g., *Pyrophyra umbilicus*) and black lichen (e.g., *Verrucaria maura*, *Lichina spp*) which proliferate on rocks, stones and boulders in the intertidal fringe (O'Riordan *et al.*, 2002). The minor name, *An Cuas Dubh*, 'The black cove', in Cooscreeen (Burke, 1917, 108) and two 'Carrigduff' islands in Roaring Water Bay (OS 6" sheet, Cork) may represent algal/lichen coatings such as those mentioned.

A likely exception to an organic source of dark colours in soils is a high or very high content of manganese oxides. The black oxides, mostly the dioxide, pyrolusite,  $MnO_2$ , occur commonly in some West-Cork rocks (Fay *et al.*, 2007; Conry and Ryan, 1965) and they have accumulated substantially in many alluvial soils, especially those of the Ilen and Mealagh rivers and of the upper River Bandon catchment. A dense hardpan in some West-Cork alluvial sub-soils, composed of cemented black manganese and reddish iron oxides, is known as 'cock-iron', *cac-iarann* (Conry and Ryan, *op. cit.*). The  $MnO_2$  contents of these soils surpass levels quoted in the world's literature but when it is dispersed through the soil, the matrix colours are mostly very dusky red to black (Munsell hues: 2.5YR 2.5/2, 3/2 and related low chromas and values). There is little doubt that manganese lurks behind *An Gaothradh Ruadh*, an old name for the bank of the River Ilen at Skibbereen (Burke, 1918, 79). It is possible that similar oxides occur in River Sullane alluvium where a derivation of Bardinch (p. 228), *Barr Duibh-Inse*, is 'Height of the black or dark river inch'.

Although unlikely to be a factor in darkening West-Cork soil surfaces, some aspects of land management, itemised in the reports of the Law and Practice Commissioners 1845, are noted. They include excessive topdressing of 'worn-out' tillage land with bog-soil: Co. Galway: '(Bogstuff) is carried on to such a pitch that the land has actually become moory' (II, p. 537); Co. Westmeath: 'good wheat-growing district, now unable to grow wheat in consequence of the constant bog-manuring and conacring' (II, p. 307). (This author has noted surface-darkened brown earth soils in the River Clariana catchment in Co. Tipperary where the addition of organic matter accompanied the practise of marling).

### **Places defined by *bán, fionn, geal*: white**

Apart from three places named Carrigbaun (46, 69, 239), *Carraig bhan*, there are not many examples of townland names in the study area which would point to bedrock as a source of whiteness. Mac Cárthaigh (1974) noted Tilickafinna, P. Kilnamanagh as *Tigh Lice Finne*, 'White-rock house' (56); likewise, *Clai Geal*, (quartz stones) and *Clocha bána*, were said to refer to 'white boulders' of quartz

on the hillside (Mac Cárthaigh, 1977, p. 146). Power (1917/18, 229) noted *Carn Geal*, as ‘White or glistening cairn’. Burke (1917) drew attention to *Talamh na leice báine*, ‘Land of the white stone’ (108) and O’Donoghue glossed Scobaun, (37) as *Scoth Bhan*, ‘White reef’, both coastal places. O’Donoghue explained Derrybaun (95), *Doire Ban*, as ‘White wood...’ Scartbaun (291), *Scairt Bhan*, as ‘White thicket’, and Annahala (253), as *Eanaigh Gheala*, ‘White marshes’. A vegetation source may lie behind Coolbaun, (part of Lisleecourt, 132), Coolbane (54, 61) and Coolabaun (82), and in the final syllable, -vane, in Ballycrovane (315). Whiteness associated with hydrological features is suggested in some names: Aubane and Owenbane (222), *Abhainn Bhan*, both ‘White river’, while Awfune (bridge), in Coolkisha (272), is *Ath Fionn*, ‘White ford’. Beese (1998, 45) used the term ‘white-water rock’ in referring to the shallower part of Roaring Water Bay and Daly (2004, 170) suggested that one meaning of Carrignagal, Heir Island, may be rock ‘of the foam’. The townland of Mashanaglass (271) has a holy well, Toberbaun, *Tobar Ban*, ‘White well’.

### **Possible causes or origins of ‘whiteness’**

Since neither the Devonian nor the Carboniferous rocks in the study area have formations or units rich in light-coloured, silicious sediments, colour names that may be traced to a bedrock source, are confined to a few areas where lenses of quartzite constituted a distinct feature. As a result of intense weathering of the alumina-silicate rock mantle, veins of quartzite become prominent and when detached by glacial and other processes become noticeable terrain features. During pedogenesis, quartz-rich material accumulates (by preferential concentration) in podzol soils as bleached subsurface horizons (labelled A2 or E, and termed ‘albic’ in profile notation). However, any effects that quartz-rich materials may have on soil colour would most likely be suppressed by the dark/blackish colours of the overlying peaty topsoil. Only those podsolised soils, developed on shoulder slopes and on coarse sandstones (and susceptible to erosion, solifluction) would be likely candidates to contribute whiteness. While limestone outcrops and amendments can also be discounted, many flowering plants could excite whiteness on the landscape. The flowers of whitethorn (*Crataegus*) and of daisies (*Bellis*) have been postulated as sources of whiteness but Joyce’s ‘whitish grass’ (p. 272) seems to be a more realistic option.

Most dictionaries define the adjective, *bán*, as white, fair, pale, flaxen, adding, that when applied to land, *bán* may mean empty, infertile, untilled, or waste and in the Munster counties, ‘bán’ denotes a green field. Based on the second meaning of *bán* (‘untilled’, ‘uncultivated’, ‘desolate’ or ‘waste land/lea/pasture’), it is tempting to conclude that the word *bán* in many place-names refers to the whiteness of stems, stalks or flowering heads (culms) of grass species, some or most of them moribund in fields, meadows and hillsides, surviving in acid, nutrient-deficient soil conditions. In such infertile states, the once-productive meadow grasses, ryegrasses and fescues tend to be replaced by Bent grasses (*Agrostis*), Yorkshire fog (*Holcus*), Dog’s-tail grass (*Cynosurus*) and other acid-tolerant species (see

Feehan *et al.*, 2012). After a brief mid-season spurt of growth and seed production, senescence sets-in, the older leaves lose their chlorophyll, and turn yellow and white. Even the tussock-forming Cocksfoot (*Dactylis glomerata*) has a functional life of only a few months; as the leaves cease to function, the grass withers and begins to decay. However, due to their extensive root systems, most grasses survive adverse conditions, including severe drought. While the sward may appear white from a distance, those parts close to the soil surface, including leaf bases and creeping runners, survive under Irish winter temperatures.

On wetter sites, other vegetative associations would prevail. Since the general meaning of *currach* is ‘marsh’, Ballycrovane, *Béal an Churraigh Bháin*, may represent an abundance of one or more of:

- 1 *Molinia caerulea*, ‘Purple moor grass’; a deciduous grass whose fallen leaves blow about in the wind (Moynihan, 2003, 36), giving the mountainside a shiny look on a windy day (Feehan *et al.*, 2012, 177/8); and said by Mac Cárthaigh (1974, 46) when writing about *Eisc Fionn*, to be a coarse grass which grows on peat soil and turns white on age’;
- 2 *Ceannbhán móna*, (Cotton-grass/Bog Cotton, *Eriophorum vaginatum*), a conspicuous sedge with white, cottony tufts;
- 3 *Holcus lanatus* (Yorkshire fog, *Féar an chinn bháin*), a grass that forms fog-like, meadow-wide swards on all kinds of grassy surfaces.

In addition to the pervasive loss of fertility during the mid-second millennium, winter foddering and crop rotation practices must have contributed to the gradual ‘de-greening’ of the Irish landscape. In his thesis on cattle rearing, Lucas (1989, p. 34) noted the change from the Giraldus Cambrensis observation of about 1185 (‘The grass is green in the fields in winter as it is in the summer’) to that of Sir William Temple in 1697 (‘... two, three or at best four years old cattle ... bred wholly upon the Mountains in Summer and upon the withered long grass of the lowlands in the Winter’). Lucas concluded that the consensus of commentators, spread over a long span of time, was that Irish farmers made little or no hay for over-wintering but relied instead on grass which had been fenced off or otherwise preserved from grazing during the summer, ‘so that it was available in winter as hay-on-the-root, so to speak’ (p. 35). The dearth of manures in tillage rotations also facilitated downward spiral towards soil exhaustion in the eighteenth and nineteenth centuries. Standard crop rotations included three or four successive grain crops prior to the land being let out to grass (Law and Practice Commissioners 1845). Referring also to larger farms, contributors to this report were very critical where rotations, without manuring, included one crop of white straw after another to exhaustion. While ‘white crops’ included wheat, oats, rye and barley, it is likely that less-demanding oat crop became the dominant one, especially in the more acid soil regions. One contributor described lands near Castleisland as ‘entirely neglected, the best of them had a yellow and sickly appearance, and the grasses were choaked with moss’ (II, p. 26) According to Fergus Kelly (personal communication, 2012), the meaning of *bán*, as ‘untilled,’ seems unattested in Old or Middle Irish and the Royal Irish Academy *Dictionary of the Irish Language*

gives only two examples from Early Modern Irish around the fifteenth-sixteenth centuries.

The white sensation produced by refraction and light-scattering in air bubbles incorporated by water turbulence, is well expressed in fast running streams and at shorelines. Restless water, eddies and swirls off the coast of Sherkin, were invoked by Beese (1998, 45). It is also likely that Aubane, *Abha Bhan*, and Owenbane (p. 222), *Abhainn Bhan*, ‘White river’, represent refraction and light-scattering in air bubbles amid the stream-bed stones. The whiteness arising from light scattering by tiny spherical air bubbles entrapped within the water body is well represented in rapids and cataracts; other gases and ageing may give rise to greys, yellows and darker colours. The Toberbaun, referred to above was evidently producing clear unpolluted spring water.

### **Places defined by *ruadh* (*rua*), *dearg*, red and by *donn*, *crón*, brown**

The colours ‘red’ and ‘brown’, being closely related and sometimes indistinguishable, the names of places incorporating these colours are discussed together. Dinneen (1927) defined *Ruadh*, ‘Red, brownish-red, brown; used commonly to represent the brown colour of newly-ploughed ground’. He also defined the adjective, ‘*Crón*’, as ‘any dark shade of red, tan, brown’, and the adjective, ‘*Donn*’, as ‘brown, strong, firm, (somewhat equivalent to *ruadh* in *arán ruadh*, brown bread)’.

The geologic/geomorphic surfaces in West Cork that express ‘reddishness’ include *carraig*, *cloch*, *cnoc*, *cúl*, *cúm*<sup>2</sup>, *ladhar*, *mullach*, *oileán*, *rinn* and *sliabh* (rock, stone, hill, recess, hollow, fork, summit, island, headland/promontory and hill/heathland). Those with more pedologic leanings include Clashroe, *Clais Ruadh*, ‘Red trench; Dromlickacroe (296), *Drom Liceach Ruadh*; Screhaneroe (166), Mullaghroe (282) and Rangaroo (299), *Reanga Ruadh*. One of O’Donoghue’s explications of Rooves (280), *Ruaidhtibh*, is ‘Reddish spots of land’. He and others found only few names which suggested that reddishness arose from water bodies, Moanaroane, *Móin Ruadhain*<sup>3</sup>, being one. In the centre of Derryroe (274) ‘Red oakwood’, is Toberderg ‘Red well’.

### **Possible causes or origins of redness, reddishness, ‘brownishness’**

Old Red Sandstone rocks, being extensive in the study area, it is to be expected that some townlands would inherit -roe, *ruadh*, reddish, characteristics. Likewise, many soils inherit properties from their parent rocks as is evident from the terms ‘Red Stone soil’ and ‘Brown Stone soil’ used in the eras when Smith (1740-56) and Townsend (1793-1815) were writing. Ferguson (2001, p. 362) quoted from correspondence from the ‘Notes and Queries’ Journal of 1850: ‘In Munster the word *bane* or *bawn* is used to express land that has long been in grass: *tholluff bawn* being used to signify grassland about to be brought into cultivation and the *tholluff breagh*, or red land, which has recently been turned ...’. The redness associated with ploughed land in Munster is doubtlessly associated with the widespread occurrence with Red Sandstone (Devonian) rocks and the inherited

redness passed on to soils. The term ‘reddening’ is more applicable to stony, well-drained soils of the anticlinal ridges, especially north of the River Lee, where more of topsoil colours trend towards the Munsell 5YR hue; in the Carboniferous lowlands, the trend is to the browner 7.5YR hue. The reddish brown/yellowish red sub-soils (Bs horizons) that are common in many well-drained soils, have been referred to as ‘red till’, ‘red earth’ or ‘yellow earth’ in some parts of the country. It is to be noted that the iron oxide content, usually less than 3 or 4% of the fine earth (<2mm) fraction of well-drained soils, has a disproportionately large effect in influencing soil colour. The values reported for Bs horizons may range up to 7/8%. In general the soil solum colours of the study area soils are coded from the Munsell Soil charts 2.5YR to 10YR, most of them expressed in words as ‘brown’, with adjectives that include pale, light, dark, very dark, reddish and dark reddish. Though rarely needed, manganese-rich subsoils occasionally match low chroma chips on the 10R Munsell chart, e.g., 10YR 2.5/2, very dark red (*cf. An Gaothradh Ruadh*, above). Possible minor or local contributions to colour modifications of land surfaces were the manorial practices of sand/shell applications (‘...we ought always...procure the reddish Shelly Sand’, Rye, 1730) and sod-burning (‘and everywhere small heaps of earth turned red from burning...’, (Ní Chinnéide, 1952, citing De Montbret, 1791).

Compared with the Irish midlands, accumulations of Sphagnum-type mosses are relatively uncommon in the Co. Cork environment (most bogs and bog-soils having grass/shrub/reed antecedents which decompose to blackish products) and hence ‘red bogs’ are few (Hammond, 1979). Bog iron, one time an important source of smelting iron, results from the oxidation of the hydroxides of iron to the red/yellow ferric oxide form. It is of common occurrence in aerated waters emanating from marshes and peatlands, often choking artificial land drainage systems. Even though some moorland grass and sedge species exhibit degrees of reddishness during their annual growth cycle (Webb, 1959, *Scirpus caespitosus* (p. 192), ‘brown’; *S. lacustris* (p. 192), ‘reddish brown’) there is little evidence that they contributed to reddishness in place-names. According to Daly (2004, p. 169), the red, edible seaweed, dulse, *duileasch*, *Palmaria palmate*, may have been the origin of the name *Carraig a’Duilisc*, off Heir Island. Could dulse (and/or ‘clouts/ribbons’ of *Laminaria digitata*, Beese, 1998, 48) also be the reason why a six-acre island, in Skull parish (OS 6” Cork sheet 140) was named Illaunroe?

### **Places defined by *buidhe* (*bui*), yellow**

The ending ‘-boy’, *buidhe*, yellow, is common in names, especially in hilly areas. Bare rock examples include Barrboy, and Barraboy Mountain (307), *Barra Bhuidhe*. Carrigboy names, which are common country-wide, occur three times (58, 251, 294) and some townlands have related minor place-names including *Carraig na hAghaidhe Buidhe*, ‘Yellow-faced rock’, in Lislebane (124) and *Faille Righe Bhuidhe*, Dursey Island, ‘The cliff of the yellow slope’ (Mac Cárthaigh, 1966/7, 53). Of the townlands with -boy/-bwee/-*buidhe*, yellow, terminations discussed by O’Donoghue [Ballinaboy (173), Bawnboy (53), Cappaboy (298),

Carrigboy (58, 251, 294), Coolboy (54), Creboy (118)], only two, Cappaboy, *Ceapach Bhuidhe*, ‘Yellow cut-away wood or tillage plot’, and Creboy, *Cre Bhuidhe*, ‘Place of yellow clay or subsoil’, suggest a soil source. Names of places reflecting yellowness arising in the hydrological sphere include Owenbuoy Bealaboy, Ahaunboy, Aughnaboy and *Eisc Bhuidhe*. The minor placename, Cummeenboy, *Coimin Buidhe*, ‘Little yellow commonage’ in Reenaboul (228) may have its origins in its vegetation but in others, such as Knockbwee and Knockeenbwee (680), *Cnuicin Buidhe*, the colour may reflect either a biological or geological legacy. The sub-townland names, Lackawee (315), part of Gowlane, P. Kilcatherine, *Leaca Buidhe*<sup>4</sup> ‘Yellow or sunny hillside’ and Tobereenaboolyboy (85) part of Maulrour, *Tobairin na Buaile Buidhe*, ‘Little well of the sunny milking field or cattle enclosure’, are also candidate members of this genre.

### Possible causes or origins yellowness

As well as having bedrocks with intrinsic yellow hues, exposure to weathering processes causes some reddish rocks to become bleached and mellowed, and indeed yellowed. Thin films of organic acids on near-vertical rock faces may produce or strengthen a yellow hue, and some of the yellowness at ground level is likely to be due to subsoil exposures on slopes. The B horizons in West Cork soils match many of the value/chroma combinations of the Munsell 10YR page which range from yellow, to brownish yellow, to yellowish brown and to dark yellowish brown. Conry and Ryan (1963) stated that a characteristic feature of these Brown Podzolic soils was the presence of a sub-surface horizon of strong red-brown or yellowish-brown colour. A variety of mechanisms, including absorption, filtering, scattering and reflection, is involved in different ways to give water bodies their distinctive colours. Heiermeier (1956) concluded that Irish river names, with colour attributes including *Bui*, fall into three classes:

- 1 those from the physical character and qualities of the water itself;
- 2 those from natural or cultural elements outside the water; and
- 3 those taken from a place-name within the river catchment itself.

Depending on the catchment, both the soluble and suspended load would reflect the aggregated composition of local soils and would contribute to the colour of down-stream stretches.

With the exception of charlock, (*Sinapis arvensis*, *Praiseach Bhui*), suggested by O’Riordan (1933, p. 63) and Mac Cárthaig (1977, 140) as sources of a yellow colour, the vegetative cover most widely noted to give yellowness to many terrain facets is furze (gorse, whin), *Ulex*. Webb (1959, 39, and later editions) gave the colour of the corolla of *Ulex europeaeus* (*Furze*, *Aiteann*) as bright yellow and that of the smaller *U. gallii*, (dwarf or Autumn furze) as deep yellow (as ‘deep, golden yellow’, by Parnell and Curtis, 2012). Furze grows in a wide variety of conditions with the exception of calcareous soils (Feehan, 2003, 205). Kelly (1997, 394) has recorded that both species were important members of the environmental/agricultural landscape of the country in the late first millennium A.D. Persisting

as an extensive covering through the second millennium (Lucas, 1960), furze (a legume with nitrogen-fixing capabilities) may have had a far-reaching role in the naming of places. Two related, yellow-flowered plants are the herb, bird's-foot trefoil, *Lotus corniculatus* and the shrub, broom, *Cytisus scoparius* (Parnell and Curtis, 2012, 165, 175).

### **Places defined as 'glas' and 'gorm', green and blue**

The Irish language word 'gorm', represents two primary colours: blue and green, while one meaning of 'glas' is pale green. Despite the presence of chlorite and the characteristic green colours of some West-Cork rocks (especially slates), it seems that few if any place-names devolved from it, Baurgorm and Knockgorm being possible exceptions. Likewise, it seems that none of the 2,200 townland names listed by O'Donoghue reflect a blueness originating from characteristics of local subsoils. Minor names involving water bodies include Poulgorm, Pouleengorm and Lough Gorm, while a vegetation origin is suggested in Moneygorm, *Muine Ghorm*<sup>5</sup> 'Dark green shrubbery', part of Carrigdangan (248). By contrast *glas*, -glass, is well represented in names but, also being a word meaning 'stream', it is difficult to establish where it may be a colour attribute. O'Donoghue's list of *glas* names with vegetation associations include Ballyglass, Cappaglass (14), *Ceapach Ghlas*, 'Green pasture plot', Curryglass (311), Derreenglass (238), *Doirin Glas*, 'Little green oakwood', Garryglass and Greenfield, Greenmount (*Ard Glas*) (22), Kilglasse, *Coill Ghlas*, 'Green wood', Knockglass (274), Maghlass (256) and Tullyglass (92, 137, 198).

### **Possible causes or origins of greenness, blueness**

Despite the long history of copper mining (most of its minerals are green) in the Cork peninsular areas, it seems neither the surface rocks nor mine spoil caused even a minor place to have a green attribute. Neither does the sporadic occurrence of gley soils [especially the Glan series in the western part of the study area (Conry and Ryan 1963)] seem to contribute. Gleys often have greenish and bluish sub-surface colours (Munsell 5GY, 10G, 5G 10G, 5BG. 5B, 10B and 5YB and related), in which the causal agent can be traced to the hydroxide Fe(OH)<sub>2</sub>; (on absorption of oxygen it turns to a dirty green colour). Due to their wetness and/or induration (Gardiner and Radford, 1970, Creamer *et al.*, 2014) such soils were seldom inverted to expose these colours to view.

The appellation, 'Emerald Isle', arises from the greens of the grasslands that have covered most Irish terrain features (hills and dales, ridges and peaks, valleys and plains) and which, in turn, arose from the ability of the vegetable kingdom to synthesise chlorophyll. Ireland's first grasslands were quickly invaded by shrubs and trees but for several millennia now, the once-wooded lowland mineral soils have been clothed in a grass-rich carpet (Feehan *et al.*, 2012,vii). The relative paucity of 'glas' in names supports the view that it was the absence of greenness, not its presence, that gave a place its distinguishing name.

The use of *gorm* instead of *glas*, may signify an agronomic development – a possible change from light green to a ‘luxuriant’ green. O’Donoghue glossed Baurgorm (p. 292), Knockgorm (pp 52, 162) as well as part of Reenmurrageha (p. 20), as *Cnoc Gorm*, ‘Blue or rich green hill’. Not knowing the era of adoption of particular names, it is not possible to say if the rich green hues were associated with green-manuring practices, using clovers and/or other crops that could assimilate atmospheric nitrogen and make it available for absorption by plant roots. The rich greenness of after-grass (or aftermath) would reflect a contrast with the much lighter colours of nutrient-deficient pastures or stubbles. These comments are to be considered in conjunction with the earlier notes on the use of *bán* to denote a green field. A blue sensation of a different kind is caused when hydrocarbons, emitted by (forest) vegetation, interact with nitrogen, ozone and other atmospheric chemicals. These microscopic aerosols scatter the short blue and violet wavelengths of incident light, causing hills and mountains to appear blue, but the effect is too extensive and imprecise to act as a local toponymic marker. Joyce (1912, 282) gives examples.

### Places defined as *liath*, *riabhach*, grey

The widely scattered ‘grey’ townlands in West Cork which may owe their origin to geology include Baurleigh (112), Brulea (57), Carrleigh (220, 245), Crosslea (37), Curraleigh (200, 249), Dromleigh (249, 251), and Knockleigh (178) (Grey hill-top, hillock, rock, cross/cross-roads, projection, ridge and hill, respectively). Landscape or terrain features with the termination ‘-reagh’, from *riabhach*, as signifying greyness, include (from O’Donoghue, *op. cit.*) Knockanreagh (135), Knockanereagh (252), Lackareagh (9, 251, 298, 316) and Slievereagh (229). Similar names which seem to have pedological undertones are Aultaghreagh (252), Inchireagh (72), Mawreagh/Moreagh (77) and Maularaha (297), *Mealla Riabhacha*, ‘Grey mounds’. O’Donoghue also cites Clonlea (122)/Clonleigh (168), Coomleagh (295), Coorleigh (122), Dromleigh (249, 291), Leitrim (305), Leighcloon (20), Inchaleagh (272)/Inchileagh (220) and Knockaneleigh (270). An origin in soil or in vegetation seems to lie behind Coorleigh (122), Fahalea (188), and Sraleigh (213), *Sraith Liath*, ‘Grey sward or lowland along a river’. Leighmoney (154) / Moneylea (242), *Liath Mhuine* / *Muine Liath*, ‘Grey shrubbery’, point to taller (woodland) vegetation. Burke (1915, 187) suggested ‘Grey/greyish land’ for Leitry (67) and O’Donoghue advanced alternatives for Monareagh (278): *Muine Riabhach*, ‘Grey thicket’ and *Moin Riabhach*, ‘Grey or cold moorland’. Of the three Killeenleagh (55, 98, 284) townlands, he glossed that of the parish of Ross (98) as *Coillin Liath*, as ‘Little grey, partly withered wood’. [*Muing Liath*, part of Slievereagh, (230), ‘Place of thick grey grass growth’ is noted already.] Excepting Ballea (190), *Beal Atha Riabhach*, ‘Grey ford mouth’, there are no obvious place-names associated with water bodies that reflect either *liath* or *riabhach* in the study area.

### Possible causes or origins of greyness

Direct inheritance from a geological base may be widespread in many of the grey-coloured places mentioned but interplay and intermingling of processes and materials are likely to have dominated in many instances. Such processes may have been either or both constructional and degradational, as well as pedogenic and vegetative transformations. (See discussion on drift deposits, pp A5-9, in Conry and Ryan, 1963). In addition, anthropogenic events such as soil inversion (ploughing), woodland clearance and land enclosure/exclosure may impart many of the shades of grey along the spectrum between black and white. Grey colours are prominent descriptive characteristics of many of the sandstone formations described by Pracht and Sleeman (2002) and accompanying colour photographs of vegetation-free examples add support. Where their content is high/very high, light-coloured stones may dominate the overall colour of a soil profile but most of the greyness of most Irish soils is due to wetness. Soils suffering wetness (known scientifically by their mid-European name, 'Gley') can occur on hill-crests and side-slopes as well as in dales and depressions. As already noted, oxygen deprivation of subsoils leads to greenish, greenish grey and bluish grey colours (matching Y, GY, G, BG, PB and related Munsell hues). Being maintained in a reduced state, the iron contents of these soils are usually very low.

The centuries-long and country-wide practices of sod-paring, sod-burning and ash production ('denshiring', 'burnbeating'...), reviewed by Lucas (1970) and Collins (2008) nation-wide, and by Dickson (2005, 350/1, emphasis on Co. Cork) were likely to create greyish surfaces by a combination of removing the blacker sods (O horizons), exposing the sub-joined leached, eluvial, E, horizon(s) and producing grey organo-mineral ashes for spreading (as a fertiliser). The outer surfaces/barks of the trunks of many mature Irish hardwood trees exhibit a range of grey colours commensurate with aging. Best expressed after leaf-fall, greyness may be emphasised by lichen and moss coatings, a characteristic of pristine woodlands, especially on decaying branches. The considerable number of *liath/riabhach* names associated with vegetation suggests that the 'conventional' greenness was giving way to greyness when widespread naming was progressing. As well as noting the degraded nature of Irish woods in the early modern period, Nichols (2001) referred to a 1589 brochure that advertised the 'greate woods, the trees of wonderfull length' on the Becher estate around Bandon.

McWilliams (2012, 80) has pointed out that the colour of any body of open water is to some extent determined by the sky. 'The water reflects the changing patterns of blue and white and grey above and this alone can impart to it a wide variety of different tinges'. A variety of mechanisms, including absorption, filtering, scattering and reflection, can combine to give water bodies distinctive colours. Due to cloud cover, the tinges exhibited in Irish water bodies are prone to be grey but, in the cases of marshes and swamps, the greyness is vegetation-related.

Joyce listed 'odhar', pale grey, amongst his list of colours, with the addendum that bluish grey, pale grey colours originated in the soil (p. 285). However modern

studies (Placenames Branch 2012) would suggest that -ura, -ure and -oura endings were likely to refer to yew trees. The Gaelic name for yew, *Taxus baccata*, is *iubhar*.

### Places defined as ‘*breac*’, speckled, spotted

While Dinneen (*op cit.*, 118) defined *breac*, as speckled, spotted and variegated, O’Donoghue listed approximately 20 names which he interpreted as either striped, streaked, spotted or speckled. As well as a simple form in Ballybrack (10, 186), *Baile Breac*, ‘Spotted place’, the adjective *breac*, defines various kinds of land surfaces in the study area: Islands, Bracklagh, *Breaclach*, (Bere Island, 313), and Spanish Island (28), *Inis Bhreac*, (*Innis Bregge* in 1659); Knolls/hillocks, *Meall*, in Mallabracka (73) and in Maulbrack (28, 88); Fields, *Achadh*, in Aughabrack (314), *Gort*, in Gortbrack, (2, 40) and in part of Kilcatherine (315); Glen, *Gleann*, in Glanbrack (99); Plain, in Brackloon (319), *Breac-chluain*; River inch, Inchibrackane (236), *Inse an Bhreacain* and an unspecified little feature, *Bailtin*, as in Balteenbrack (78, 118). Mac Cárthaigh (1972/3, 8) noted another: *Breac-Ros*, ‘Speckled promontory’, while the Placenames Branch (2012) glossed Ardbrack (P. Ringcurran) as *An tArd Breac*. In two instances, O’Donoghue noted a link or overlap between *breac* and *riabhach*: Knockrea (211), *Cnoc Riabhach*, ‘Grey/striped hill’ and Clashreagh (258), *Clais Riabhach*, ‘Striped vale’.

### Possible causes or origins of speckledness, variegation

The evidence of the twentieth century literature supports Joyce’s contention (pp. 288/9) that the descriptive term, *breac*, speckled, may arise from a variety of sources – vegetation, soils, rocks. There are reasons for, and examples of, small fields having two, three or more soil surface colours, especially on rolling gravelly terrain, easily observed and demarcated when freshly ploughed. Spotted surfaces may also arise from local, usually small-scale mixing/inversion of soil horizons (e.g., tree-throw); additions of extraneous materials to particular fields; selective erosion/topsoil depletion; and animal burrowing/bird roosting. Common and obvious features of many steep grassy slopes are terracettes (‘catsteps’), series of little benches which follow the contours of the surface (Clavin, 2000). One example may be *Leaca Riabhach*, ‘striped or furrowed slope’, noted by Mac Cárthaigh (1973, 6) at Ardgroom. Where they are accentuated by the trampling of grazing animals, the subsurface soil is often exposed and soil erosion may follow. Dark spots may be observed on exposed, peaty hillsides where sheep excavate temporary shelters in the terracette risers (Clavin, *op. cit.*). Repeated or serried breaks of the soil surface, whether parallel or perpendicular to the contours of the ground, may constitute a striped feature. Vullings *et al.*, (2013, 106) described the terrain of Soil Map Unit Q in Clare Island as ‘...a mosaic of hand-cut turf banks; weathered rock outcrops; scattered boulders; deep, artificial and straight-edged pools; relict turf-drying stands and bog roads of unknown vintage’. A reference worth noting is from Smith (1750, I, 190) for the Inchigeelagh area: ‘Many of those mountains have been formerly tilled; for when the heath that covers them, is

pulled up and burned, the ridges and furrows of the plough are visible. About 100 years ago this country was all a forest’.

If a speckled or spotted land surface may be described as the occurrence of patches of one or few types of material against a more uniform background of another type, then some of the following compositions may be so described:

- 1 glacial boulders, most likely lichen-covered, scattered throughout bare, grassy terrain;
- 2 patches of sand/gravel, often elongated, deposited by over-bank flooding;
- 3 isolated large trees or charcoal pits (see Foxhall, (in O’Donoghue, 1986, 95 Clashagoule, *Clais a’ Ghuail*, ‘Charcoal pit’) left following a hillside clearance;
- 4 grafted terrain showing complexes of stones, grey ash heaps and undug sod remnants.

Spanish Island (p. 28), as *Inis Bhreac*, ‘Spotted or striped island’, may owe its variegation to seaweed manure; writing of Clare Island, Co. Mayo, Cotton (1912, p. 152) identified a red seaweed and noted that streaks of white among the red were due to patches of bleached *L. digitata* and *L. saccharina* which give ‘striking colour effects on the green fields’. (Literature on seaweed as a fertiliser has been reviewed by Bell and Watson (2008).) In contrast, Knockabrocka, (part of Annagannihy, p. 277), *Cnoc Broca*, ‘Grey or speckled hills’, may represent stone garlands/polygons, (legacies of frozen ground conditions), or scree material that may have persisted, unvegetated, on side-slopes.

Speckledness may be extended to include the overlap between the use of *buidhe*, *órdha* and *grianach* in place-names discussed by O’Donoghue; he noted the following: Greenane/Grenanes (4, 118, 313), *Grianain*, ‘Sunny spots...’; Ardnagreena (28); Gortagrenane/Gortigrenane (121, 183) and Tooreenagrena (305). These names seem to indicate the receiving or absorbing areas as opposed to reflection/refraction of the sun’s rays suggested in both Carrigagreenane (99) and Knockagreenane. It may be worth noting that almost total reflection of impinging radiation is the basis behind the name ‘Sugar Loaf’, assigned to vegetation-sparse, conically-shaped quartzitic peaks in many English-language countries, including the 1887ft (362m) high ‘Sugarloaf Mountain’ in the Beara peninsula. (In former times, refined sugar was produced and sold in crystalline, cone-shaped loaves). Also in Beara, light reflection seems to underlie the old name for the county’s highest peak at 2251 ft (687m), Hungry Hill, *Cnoc Dead*, ‘Hill of the tooth’. The deposits of quartzite-dominated scree, *Clocha Bána*, on its sideslopes were referred to above.

## Endnote

Notwithstanding Joyce’s warnings about vague and useless conjectures, this author thought it opportune to refer to advances in the earth sciences and in land-use studies (mostly late 20<sup>th</sup> century publications) in an attempt to elucidate one aspect of the names given to a proportion of West Cork places. In so doing, it is

to be emphasised that most components of the landscape are always changing, however imperceptibly, and that the present may not be a reliable key to the past. The note by Smith (1750, I, 190) regarding cultivation ridges hidden under a blanket of peat at Inchigeelagh is a reminder of the repetitive and cyclic nature of land use, exemplified in the maxim: *Teóra h-uaire do cur Éire, Teóra monga, agus teóra maola dhí*; ‘Three times Ireland was cultivated, thrice wooded and thrice bare’ (Hardiman, 1846, 8). If this statement is even partially true, there were many opportunities for places to be named or renamed, perhaps repeatedly. The use of colour could and would have been an easy, but, nevertheless, a useful option. Perhaps the above maxim may have had an origin in the often-referenced ‘Little Ice Age’ of the 1500s-1700s, during and after which period the need to apply differentiating names to landforms seems to have become more urgent. Contemporary meteorological effects arising from volcanic activity and industrial ‘revolution-era’ pollution may also have induced our ancestors to recognise in their surroundings ‘a touch of colour’!

Pastoral agriculture being the predominant land use, it is probably not surprising that Ireland’s 135 grass species and hybrids (Feehan *et al.*, *op cit.*) and closely related sedges, would contribute in a major way to the naming of places. Being wind-pollinated, colourful petals and sepals were unnecessary, but it seems that the senescent, rather than the productive stages, contributed most to the colour-naming of the Irish countryside. In commenting on the need to know and have a name for local, and not so-local, places, Ó Cuiv (1966/7) saw a conformity between the charioteers of old and the taxi-drivers of the late twentieth century. Keller (1994) also referred to legends and lore in his discussion of communications about the landscape: ‘the mere mentioning of certain names will produce associations far beyond that of a geographical point’. Robinson (1994) encountered such an association in the townland of Garraunbawn in his Connemara studies. He found that a huge chunk of milk-white quartz was connected to a half-forgotten legend of an otherworldly horse – ‘an ancient, perhaps totemic, white horse of stone, which has been ridden over four thousand years of its existence by various meanings we can only guess at’. It could be noted that the words ‘Whitehorse Stone’ and ‘Gearranbaun Rock’ are inscribed on OS Sheet 108, Cork, (1<sup>st</sup> and 2<sup>nd</sup> editions respectively), but the boulder in question is composed of purplish (Devonian) sandstone (Geological Survey of Ireland 1858).

The study reported here suggests that those who wish to elucidate the reasons behind colour choice in local names may find (some) answers, not only in the legends and lore of old but in some of the rapidly expanding earth science data bases as well as in the recent histories of land use and occupation. While recognising that West Cork has only a limited number of the many possible nationwide inter-relationships between meteorology, geology, topography, biology and other disciplines, it is hoped that findings reported here may encourage others to investigate their applicability to different regions of the country.

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## References

- Beese, A. (1998). The place names of Horse Island: an interpretation. *Mizen Journal*, 6: 36-55.
- Bell, J. and Watson, M. (2008). *A history of Irish farming, 1750-1950*. Four Courts Press, Dublin.
- Bowman, M. J. (1934, 2000), *Placenames and antiquities of the Barony of Duhallow*. The Kerryman Ltd., Tralee. (Unpublished MA thesis, UCC, 1934, edited by J.J. McCarthy and published in 2000).
- Burke, J.M. (1914-9). Some West Cork place names. *Journal of the Cork Historical and Archaeological Society*, XX: 151-3, 1914; XXI: 41-5, 1915; XXII: 88-9, 1916; XXIII: 108-11, 1917; XXIV: 76-9, 126-30, 1918; XXV: 39-42, 1919.
- Clapp, C.E. and Hayes, M.H.B. (1999). Sizes and shapes of humic substances. *Soil Science*, 164 (11): 777-789.
- Clavin, D.J. (2000). *Terracette studies in the hill and mountain environment of western Ireland with emphasis of the role of livestock*. Unpublished M. Agr Sc. thesis, Department of Crop Science, Horticulture and Forestry, University College Dublin.
- Collins, J.F. (2008). *Quickening the earth: soil minding and mending in Ireland*. UCD School of Biology and Environmental Science. Dublin. 510p.
- Collins, J.F., Hammond, R.F. and Walsh, M. (1989). Microscopic study of humiluvic and coprogenic materials from Creagh bog, Co. Mayo. *International Peat Journal*, 3: 129-138.
- Conry, M.J. and Ryan, M. (1963). *Soils*, pp. A15-A24, in West Cork Resource Survey. An Foras Talúntais, Dublin.
- Conry, M. and Ryan, P. (1965). Some observations in West Cork soils. *Irish Journal of Agricultural Research*, 4: 61-66.
- Cotton, A.D. (1912). Marine Algae. *Royal Irish Academy Proceedings*, 31, Section 1, part 15: 1-178. (Clare Island Survey, 1911-1915).
- Creamer, R. *et al.* (2014) *National Soil Map of Ireland*. Teagasc, Wexford.
- Daly, E. (2004). *Heir Island, its history and people*. Heron's Way Press, Leap, Co. Cork.
- Dinneen, P.S. (1927). *Irish / English Dictionary*, Irish Texts Society, London.
- Dixon, D. (2005). *Old world colony, Cork and South Munster, 1630-1850*. Cork University Press, Cork.

- Fay, D. Kramers, G, Zhang C, Mc Grath, D, and Grennan, E. (2007) Soil Geochemical Atlas of Ireland. Teagasc and the Environmental Protection Agency, Wexford.
- Feehan, J. (2003). *Farming in Ireland*. Faculty of Agriculture University College Dublin
- Feehan, J. and O'Donovan, G. (1996). *The Bogs of Ireland*. The Environmental Institute, University College Dublin.
- Feehan, J., Sheridan, H. and Egan, D. (2012). *The Grasses of Ireland*. Walsh Printers, Roscrea, Co. Tipperary.
- Ferguson, K. (2001). An English and French etymology of 'bawn'. *Irish Sword*, 20 (90): 361-369.
- Flanagan, D. and Flanagan, L. (1994). *Irish place names*. Gill and Macmillan, Dublin.
- Gardiner, M.J. and Radford, T. (1970) *Soil Associations of Ireland and their land use potential*. Soil Survey Bulletin No. 36. *An Foras Talúntais*, Dublin.
- General alphabetical index to the townlands and towns, parishes and baronies. (1861) HMSO, Dublin.
- Geological Survey of Ireland (1858). *Explanations to accompany sheet 193 of the maps of the Geological Survey of Ireland*. Memoir No. 49. Geological Survey of Ireland, Dublin.
- Hammond, R.F. (1979). *The Peatlands of Ireland*. An Foras Talúntais, Dublin.
- Hardiman, J. (ed.) (1846). *A chorographical description of West or H-Iar Connaught written in AD 1684 by Roderic O'Flaherty*. Irish Archaeological Society, Dublin.
- Hayes, M.H.B., Clapp, C. and Edward, C. (2001). Humic substances, peats and sludges: health and environmental aspects. *Soil Science*, 166 (11): 723-79.
- Hayes, T.M. and Hayes, M.H.B. (1997). *Consideration of the influences of water soluble humic substances on the solubilities of anthropogenic organic chemicals*. In J. Drozd, S.S. Gonet, N. Senesi, and J. Weber (eds). The role of humic substances in ecosystems and in environmental protection. *Proceedings of the 8<sup>th</sup> Meeting of the Humic Substances Group*, PTSH, Wroclaw, Poland, pp 655-669.
- Heiermeier, A. (1956). *Ir. Buide 'gelb', mit Flussnamen-Exhurrs: Eine Probe aus der Ferben-Kategorien irischer Flussnamen*. In: Indogermanische Etymologien de Keltische H 2, 166-181.
- Joyce, P. W. (1875, reprinted 1912). *The origin and history of Irish names of places*. 2 vol. Longmans Green & Co (Re printed 1973 by EP Publishing, Yorkshire).
- Keller, C. (1994). The theoretical aspects of landscape study. Chapter 7 in T. Collins, (ed.) *Decoding the Landscape*. Centre for Landscape Studies, University College Galway, Galway.
- Kelly, F. (1997). *Early Irish Farming*. School of Celtic studies; Dublin Institute for Advanced Studies. Dublin.

- Lambert, R.A. (2015) Environmental history and conservation conflicts. Chapter 4 in S.M. Redpath, R.J. Gutiérrez, K.A. Wood, K.A. and J.C. Young J.C. (eds). *Conflicts in Conservation*. Cambridge University Press.
- Law and Practice Commissioners (1845). *Report of the Commissioners of Inquiry into the state of the law and practice in respect of the occupation of land in Ireland* (Devon Commission). 5 parts. A Thom, for HMSO, Dublin.
- Lucas, A.T. (1960). *Furze – a survey of its history and use in Ireland*. National Museum of Ireland. The Stationary Office, Dublin.
- Lucas, A.T. (1970). *Paring and burning in Ireland, a preliminary survey*. Pp 99-147 in A. Gailey and A. Fenton (eds): *The spade in northern and Atlantic Europe*. Ulster Folk Museum, Belfast.
- Lucas, A.T. (1989). *Cattle in ancient Ireland*. Boethius Press, Kilkenny.
- Lyons, J. (1892-4). *Local names, topographical and personal*. Journal of the Cork Historical and Archaeological Society, IA: 149-51, 211-2, 1892; IIA: 77-9, 1893; IIIA: 64-5, 1894.
- Mac Cárthaigh, M. (1966/7). *Dursey Island and some placenames*. *Dinnseanchas*, 2 (2): 51-55
- Mac Cárthaigh, M. (1970/1). *Placenames of Innismurray*. *Dinnseanchas*, 4 (3): 60-72.
- Mac Cárthaigh, M. (1972/3). *Placenames of the parish of Kilcatherine*. *Dinnseanchas*, 5 (1): 4-12+ map; 5 (2): 29-46.
- Mac Cárthaigh, M. (1974). *Placenames of the parish of Kilnamanagh*. *Dinnseanchas*, 6 (1): 13-25; 6 (2) 37-59.
- Mac Cárthaigh, M. (1977). *Placenames of the parish of Kilaconenagh*. *Dinnseanchas*, 4 (4): 124-148.
- Mac Neill, J. (1913). Placenames and family names. *Proceedings of the Royal Irish Academy* 31 (Section 1, part 3, 3-41 Clare Island Survey, 1911-1915).
- McDonnell, R., Holden, N.M., Ward, S.M., Collins, J.F., Farrell, E.P., and Hayes, M.H.B. (2001) *Characteristics of human substances in heathland and forested peat soils of the Wicklow mountains*. *Biology and the Environment*, 101B: 187-197.
- McWilliams, B. (2012). *Illustrated weather eye*. Gill and Macmillan, Dublin.
- Miller, F.P., Rasmussen, W.D. and Myler, L.D. (1975). *Historical perspectives of soil erosion in United States*. Chapter 3 in: R.F. Follett and B.A. Stewart, (eds) *Soil erosion and crop productivity*. American Society of Agronomy, Madison, Wisconsin.
- Munsell Color. (2000). *Munsell Color Charts*. New Windsor, New York.
- Ní Chinnéide, S. (1952). Coq. De Montbret's impression of Galway City and County in the year 1791. *Journal of the Galway Archaeological and Historical Society*, XXV:1 & 2, 1-14.
- Ní Chinnéide, S. (1976). A Frenchman's tour in Connacht in 1791. *Galway Archaeological and Historical Society Journal*, 35: 52-66.

- Nichols, K. (2001). Woodland cover in pre-modern Ireland. In P.J. Duffy, D. Edwards and E. Fitzpatrick (eds). *Gaelic Ireland C. 1250-C. 1650: land, lordship and settlement*. Four Courts Press, Dublin, pp 181-206.
- Ó Cuív, B. (1966/7). Dinnsenchas – The literary exploitation of Irish place-names. *Ainm*, 4: 90-106.
- O'Donoghue, B. (1986). *Parish histories and place names of West Cork*. The Kerryman Ltd., Tralee.
- Ó Foghludha, R. (1935). *Log ainmneacha .i. Dictionary of Irish placenames (7000), English-Gaelic*. Brún agus Nualláin, Teo., Dublin.
- Ó Muraile, N. (1999). The place-names of Clare Island. In C. Mac Cárthaigh and K. Whelan, (eds). *New Survey of Clare Island, Volume 1: History and cultural landscape*. Royal Irish Academy, Dublin, pp 99-141.
- O'Riordan, R., Myers, A., McGrath, D., Delaney, J., Cussen, R. and Cronin, M. (2002). *An extremely exposed shore: Lecknacanny, Clare Island*. Volume 3, 11-27, New Survey of Clare Island. RIA, Dublin.
- Ó Riain, P., Ó Murchadha, D. and Murray, K. (eds) (2003). *Historical dictionary of Gaelic placenames*, Fascicle 1, Irish Texts Society, Dublin.
- Ó Ríordáin, S.P. (1933). The place names and antiquities of Kinalmeaky Barony, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, XXXVIII: 57-66.
- Placenames Branch. (2012). *An tOrdú Logainmneacha (Contae Chorcaí) 2012*. I. R. Uimh. 395 of 2012. Department of Arts, Heritage and the Gaeltacht, Dublin.
- Parnell, J. and Curtis, T. (2012). *Webb's an Irish Flora*. Cork University Press.
- Power, P. (1917/8). Placenames and antiquities of South east Cork. *Royal Irish Academy Proceedings*, XXXIV C: 1-32; 184-230; 1923, XXXVI C: 164-205.
- Pracht, M. and Sleeman, A. G. (2002) *Geology of West Cork*. Geological Survey of Ireland, Dublin.
- Price, L. (1938). The place-names of the Barony of Newcastle, County of Wicklow. *Royal Irish Academy Proceedings XLIV C*: 139-79.
- Price, L. (1941). The place-names of the Barony of Newcastle, County of Wicklow. *Royal Irish Academy Proceedings XLVI C*: 237-86.
- Rannóg an Aistriúcháin (1958). *Gramadach na Gaeilge agus Litriú na Gaeilge: An Caighdeán Oifigiúil*, The Stationery Office, Dublin
- Robinson, T. (1994). *A Connemara fractal*. Chapter 2 in T. Collins, (ed) *Decoding the Landscape*. Centre for Landscape studies, University College Galway, Galway.
- Rye, G. (1730). *Considerations on agriculture: treating the several methods practised in the different parts of the Kingdom of Ireland*. Grierson, Dublin.
- Sleeman, A.G. (1991). *The geology of Cork city and harbour*. Geological Survey of Ireland, Dublin.
- Sleeman, A.G. and Pracht M. (1991). *Geology of South Cork*. Geological Survey of Ireland, Dublin.
- Smith, C. (1745). *The antient and present state of the County of Waterford*. Reilly, Dublin.

- Smith, C. (1750). *The antient and present state of the County of Cork*. Ewing *et al.*, Dublin.
- Smith, C. (1756). *The antient and present state of the County of Kerry*. Ewing *et al.*, Dublin.
- Townsend, H. (1803). *An essay on the Agriculture of the County of Cork, to which is added ... by Wm Meade, M.D.* H. Horgan, Cork.
- Townsend, H. (1810). *Statistical Survey of the County of Cork*. 2 vol. Graisberry and Campbell, Dublin.
- Townsend, H. (1815). *A general and statistical survey of the County of Cork*. Edwards and Savage, Cork.
- Vullings, W., Collins, J.F. and Smillie, G. (2013). *New Survey of Clare Island, Volume 8: Soils and Soil Associations*. Royal Irish Academy, Dublin.
- Webb, D.A. (1959). *An Irish flora*. Dundalgan Press Ltd., Dundalk.