

A Cultural Case for the Rewilding of Wild Boar (*Sus Scrofa*) In Wales

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University of Wales, Trinity St David, Lampeter 2020

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A Cultural Case for The Rewilding of Wild Boar (*Sus scrofa*) In Wales

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Abstract

Rewilding represents an innovative conservation strategy that has emerged during the 21st century and challenges the ideas and methods of traditional ecosystem management. The strategy seeks to restore ecosystems to a previous, more biodiverse, state in their history to ostensibly increase their resilience to external environmental change. One of the ways rewilding aims to achieve this is through species reintroduction.

In Wales, it is debated as to whether wild boar (*Sus scrofa*) should be reintroduced for the purposes of rewilding. This Thesis aims to provide a cultural argument regarding their posited return, by revealing the reverence Celtic people held for wild boar, as captured through their art and artefact. The first two chapters provide context to wild boar as a rewilding agent, briefly outlining their life history and role as a keystone species. The third chapter explores Celtic identity and the environment of Iron Age North West Europe. Chapters four, five and six delve into the mythology, archaeology and zooarchaeology of the Iron Age Celts in the context of wild boar. The thesis concludes in chapter seven with a hypothesis regarding Jungian psychology and applying the concepts of the 'Collective Unconscious' and 'Archetypes' to the representations of wild boar in the Celtic cultural psyche. It is ultimately argued that at least from a cultural perspective, wild boar represent a significant part of a self-identifying 'Celtic' nation such as Wales, and therefore should strongly be considered in any future plans to rewild the Welsh wilderness.

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Introduction

From the riveting hunt of the Twrch Trwyth in *Culhwch ac Olwen* to the mystical white boar that led Pryderi to his imprisonment at the hands of Llwyd in *Manawydan*, wild boar (*Sus scrofa*) occupy a sacred place in the mythology of Wales. This reverence is further supported by innumerable references across wider prehistoric Celtic and European culture yet, despite the preoccupation with capturing boar across art and artefact, modern Wales is no longer home to these animals. As the 21st century continues to see anthropogenic pressure tighten on the environment, potential remedies in the form of novel conservation strategies are being considered. Reintroduction ecology and rewilding are two such strategies that have gained momentum over the last decade, and the status of wild boar as a keystone species and former constituent of Welsh biodiversity has produced much discourse regarding their potential role as agents of Welsh ecological restoration.

This essay considers the validity of wild boar reintroduction in Wales by exploring their place in Celtic culture. Assessing the impression of wild boar in the Celtic psyche not only reflects wild boar's prominence in the Celtic natural world, but also their presence in the identity of the Celtic people. Such an assessment may provide a foundation on which to place a cultural argument for the reintroduction of wild boar in Wales. This essay will touch on the concept and processes of rewilding, wild boar's place as a potential reintroduction candidate and the question of Celtic identity itself. References, and their associated implications, of wild boar in Celtic and wider European myth, ritual and material culture will also be explored. The essay will conclude with a brief consideration of Jungian psychology, how concepts such as archetypes and the collective unconscious may suggest the prevalence of wild boar in Celtic culture goes beyond a simple reverence for nature; to yet speak of something deep within the Celtic heart itself.

CHAPTER ONE: *Rewilding*

Cambrian Wildwood is a rewilding project in all but name. It was set up in the early 2000s by the project director, Nigel Ayres, in the Welsh Cambrian Mountains. The site itself is situated over 350 acres at Bwlch Corog, where highland cattle (*Bos Taurus*) and wild horses (*Equus ferus*) prepare the land for natural forest re-colonization. Ultimately, the team hope to re-introduce lost Welsh species such as Beaver (*Castor fiber*), Pine Marten (*Martes martes*) and perhaps even Wildcat (*Felis sylvestris*).

Rewilding is a novel conservation strategy that has evolved in response to the environmental challenges of the 21st century. It seeks to increase the resilience of ecosystems by promoting biodiversity and interspecies dynamics.¹ Rewilding's emphasis is placed upon restoring the trophic levels of an ecosystem, rather than a particular species.² The idea is to restore an ecosystem to an earlier state in its existence where it benefited from a higher level of biodiversity and interspecies dynamics. Over the course of the Anthropocene, biodiversity has been eroded by human activity to such an extent that many extant ecosystems resemble a shadow of their former selves and the 'trophic completeness' that rewilding seeks to administer is a relative rarity.³

Trophic levels can be thought of as a step pyramid. The foundation is comprised of primary producers, which convert solar energy into biomass, and the successive steps work to assimilate this biomass for themselves. Of course, all systems are inefficient by nature, haunted by the 2nd law of thermodynamics. Energy is lost at each step (as waste or heat etc), so each successive step becomes smaller and a pyramid structure is assumed. Imagining the steps as measures of species abundance, it can be seen that there are far more primary producers than apex predators in a given ecosystem.

This trophic step-pyramid requires a complicated set of inter-species, inter-trophic and species-enviro dynamics to maintain its shape. When these processes breakdown, the pyramid becomes unstable and is analogous to a fragile ecosystem that is vulnerable to

¹ Jepson and Ladle, 2010. Conservation A Beginner's Guide. Pp 6-7

² Joris P G M Cromsigt and others, 'Trophic Rewilding as a Climate Change Mitigation Strategy?' <<https://doi.org/10.1098/rstb.2017.0440>>.

³ Richard T Corlett, 'Restoration, Reintroduction, and Rewilding in a Changing World', 2016 <<https://doi.org/10.1016/j.tree.2016.02.017>>.

collapse when exposed to external pressure. Many examples of ecosystem degradation involve the uppermost block, as apex predators (e.g. wolf) which are seen as a threat to human lives both directly and indirectly and are therefore extirpated, leaving many European ecosystems devoid of their uppermost trophic level.⁴ Lower trophic levels are subsequently released from hunting pressures and their populations increase to unnatural sizes, placing a strain on the ecosystem. This is exemplified by the abundances of red deer (*Cervus elaphus*) in systems without natural predation. A trophic cascade is created, where the deer over-consume underlying trophic levels, reducing overall biodiversity and interrupting crucial ecosystem services.⁵

Traditional conservation has prioritised endangered species, a worthy endeavour that has prevented many extinctions; yet this is a rather narrow approach to ecosystem management and can also obstruct natural processes. For example, heather habitat in Britain is prized for its ability to attract rare species of butterfly, e.g. *Plebejus argus*, which are protected by conservation agencies due to their endangered status. However, the natural process of succession will ultimately convert the heather into forest, replacing the plant community and the butterflies which rely on them. Forests are more biodiverse, robust ecosystems, but their formation is prevented by focusing efforts on individual ailing species.⁶

This is not to say that rewilding also does not sometimes harbour a preoccupation for certain species. It often involves 'keystone' species which are animals that have a disproportionate effect on their environment relative to their size. Examples include elephants that topple acacia trees or beaver which dam rivers; keystone species significantly alter their environment and therefore represent many of the biodynamics to which their parent ecosystem is adapted.⁷ Much like apex predators (of which many are also keystone),

⁴ Yalden D, The History of British Mammals. Poyser Natural History, 1999 Ch 1

⁵ Holdo RM, Sinclair AR, Dobson AP, Metzger KL, Bolker BM, Ritchie ME, Holt RD. 2009 A disease-mediated trophic cascade in the Serengeti and its implications for ecosystem C. PLoS Biol. 7, e1000210.

⁶ Richard T Corlett, 'LANDSCAPE DESIGN AND PLANNING FOR ECOLOGICAL OUTCOMES (G SIRIWARDENA, SECTION EDITOR) The Role of Rewilding in Landscape Design for Conservation', *Current Landscape Ecology Reports* <<https://doi.org/10.1007/s40823-016-0014-9>>.

⁷ Plas F, Howison RA, Mpanza N, Crooms J, Olf H. 2016 Different-sized grazers have distinctive effects on plant functional composition of an African Savannah. J. Ecol. 104, 864 – 875.

such species tend to find themselves in conflict with human society as, in general, they obstruct the human desire to hold the landscape in temporal and spatial stasis.

A large component of rewilding focuses on 'reintroducing' keystone species in an attempt to restore ecosystem functionality, of which moderate disturbance is an essential component (intermediate disturbance hypothesis⁸). In practise, reintroduction biology gained significance in the 1990's when wolves (*Canis lupus*) were restored to Yellowstone National Park and a slew of environmental benefits were observed.⁹ Rewilding efforts have crossed the Atlantic and are starting to be embraced more in Europe, with several projects ongoing or under proposal.¹⁰ Beavers in Scotland have been a success, and Oostvaardersplassen in Holland remains a pioneering voice in the debate.^{11,12} These projects are in line with the Council Directive 92/43/EEC, otherwise known as the Habitat Directive, which seeks to restore native species to their prior ecosystems. The feasibility for such reintroduction is stated within the IUCN guidelines,^{13,14} assessing the historic distributions of native species within the proposed reintroduction region and mitigating the potential negative consequences. There is, understandably, much caution surrounding the potential reintroduction of an animal and it often reflects the reason they were driven to extinction in the first place. Therefore, to fully implement a reintroduction programme it is necessary to assess both the positive and negative impacts that will occur as well as having a convincing initial argument to even consider the reintroduction. This 'convincing argument' should contain a variety of sub arguments, spanning a wide variety of related fields. Three main areas for such an argument to be constructed are natural historical, ecological/economic and cultural.

⁸ Cromsigt, JPGM, Beest T, Kerley G, Landman, M, Le Roux E, Smith F., Trophic rewilding as a climate change mitigation strategy? Philosophical transactions of the Royal Society of London. Series B, Biological Sciences (2018), Vol. 373 (1761)

⁹ Monbiot, G, Feral, Penguin Books pp 84-6

¹⁰ Jepson P, Ladle R., Conservation 'A Beginner's Guide', Oneworld Publications 2010., pp 1-5

¹¹ Belt H 2004 'Networking nature or "Serengeti behind the dikes"'. *History and Technology*, 20: 311-333

¹² Crumley J., Nature's Architect 'The beaver's return to our wild landscapes'. Saraband 2015, pp 39 -50

¹³ 1998 *IUCN guidelines for re-introductions*. Gland, Switzerland: International Union for Conservation of Nature Retrieved from <http://www.iucn-whsg.org/node/1471>

¹⁴ 2013 *Guidelines for reintroductions and other conservation translocations*. Gland, Switzerland: International Union for Conservation of Nature Retrieved from <https://www.iucn.org/content/new-guidelines-conservation-translocations-published-iucn>

Natural Historical:

A natural historical argument outlines the validity of the species as part of the ecosystem in which it will be reintroduced. This will involve zooarchaeological evidence, such as faunal remains, to quantify when the animal became absent from the assemblage. Looking at proximal geographical countries or analogous habitats can also aid in making the case for reintroduction.

The main issue with this line of argument is that the past is in a state of constant flux; which period/age exactly should be used as a blueprint for contemporary ecosystems? There is much debate in this area¹⁵ but an option is to investigate the environment during the general period of extinction. This usually will involve human society in the landscape, which is critical even now, as it seems redundant to search for a blueprint in a primordial past which cannot become a contemporary reality.

To construct a proper natural historical argument for the rewilding of any landscape, it is necessary to first understand the natural history of that landscape. A story of the flora and fauna through time will reveal how the biological and anthropogenic forces have shaped the ecosystem which we observe today. It allows us to understand the conditions with which it evolved and the circumstances behind its decline and therefore make an argument for or against the reintroduction of certain species.

Ecological/Economic:

These arguments are from a utilitarian perspective of nature and its processes. This mode of thinking is often employed when conserving rainforests, as statistics of rare medicinal plants are circulated in the media. In terms of rewilding, the ecological benefits are more obvious. Keystone species almost always alter their surrounding environments in a way that creates more biological niches and boosts biodiversity, with increased biodiversity seen almost

¹⁵ José Manuel De Cózar-Escalante, 'Ethics, Policy & Environment Rewilding. A Pragmatist Vindication', 2019 .

unanimously as a desired outcome.¹⁶ However, the economic benefits can also be potent. The biggest is eco-tourism, a massive financial aid for many countries¹⁷ and a useful way to convince farmers that they will be compensated for potential losses. Other benefits include flood defence, carbon sequestering and animal/plant resource export.¹⁸

Cultural:

A cultural basis for implementation is often overlooked, yet it is hugely important. To prove the significance of an animal in the culture of a people, can allow for a greater public sense of approval and support. Cultural evidence can be accrued from historical texts, art and archaeological findings. It is perhaps the most poignant argument as ultimately, rewilding itself is a cultural phenomenon, so clearly visions of these beasts coexisting alongside us exist in the collective subconscious; they must be awakened.

A Wilder Wales

During the 1970s there were plans to rewild parts of Snowdonia in Wales.¹⁹ The idea was to allow regeneration of woodland over the uplands, restoring tree cover to a state that would have been similar to the apparent Mesolithic environment of upland Wales. This process was halted, however, due to concerns that the tree cover would obscure the visual representation of history within the land. The *Hafodydd* preserved in the *Fridd* pastures were an important part of land use during the 16th century and their distinctive markings on the land can be observed today due to the barren nature of the Snowdonia Uplands.^{20,21}

¹⁶ Croomsigt, JPMG, Beest T, Kerley G, Landman, M, Le Roux E, Smith F., Trophic rewilding as a climate change mitigation strategy? Philosophical transactions of the Royal Society of London. Series B, Biological Sciences (2018), Vol. 373 (1761)

¹⁷ Jepson P, Ladle R., Conservation 'A Beginner's Guide', Oneworld Publications 2010 pp 61-62

¹⁸ Sophus O S E Zu Ermgassen and others, 'Ecosystem Service Responses to Rewilding: First-Order Estimates from 27 Years of Rewilding in the Scottish Highlands', *International Journal of Biodiversity Science, Ecosystem Services & Management*, 14.1 (2018), 165–78 <<https://doi.org/10.1080/21513732.2018.1502209>>.

¹⁹ Rotherham I, 2013. Trees, Forested Landscapes and Grazing Animals. *Routledge* p 36

²⁰ Hooke D, 1997a. 'Place-names and vegetation history as a key to understanding settlement in the Conwy valley', in Edwards N (ed) *Landscape and Settlement in Medieval Wales*, Oxbow Monogr, 81, Oxford, pp 79-95.

²¹ Hooke D (2003) 'Place-names and land use in coastal Ardudwy, with comparisons with the Conwy valley in north Wales', in Unwin T & Spick T (eds) *European Landscapes: From Mountain to Sea*, Huma publishers, Tallinn, Estonia, pp139-145.

Field patterns and stone wall perimeters of historical farmsteads would have the visual evidence of their presence diminished with increased tree cover. Ultimately, these reasons halted the plans for the rewilding of Snowdonia. Yet this unsuccessful attempt highlights a recurring issue of rewilding, choosing a particular reference frame to restore, as it is clear that this area of Wales did indeed at one time have extensive forest cover.²² It isn't even necessary to travel all the way back to the Mesolithic, as a forested history of Snowdonia is tantalisingly glimpsed from a study by Rotherham on the parishes of Caerhun and Llanbedycennin. Rotherham revealed how settlements had place names such as *Coed, Gelli, Llwyn or Goitre or* (Forest, Grove, Homestead in a wood),²³ indicating possible tree cover as recently as the Welsh medieval era.

Rewilding in the UK resurfaced during the 1990s, perhaps inspired by the Yellowstone project, yet this time with the idea of animal species reintroduction and the corresponding protection of habitat. Moose, elk, wild boar, beaver, wolf, lynx were all among the species posited for a return. Yet, unlike America or even elsewhere in Europe, Britain proved a difficult environment for such reintroductions and rewilding visions due to the land ownership culture and inextricable link between people and nature. Areas that could be considered 'completely wild' or devoid of some form of human disturbance were practically non-existent but large tracts of land with minimal anthropogenic disturbance, linked through wildlife corridors would be more feasible. Certain reintroductions have indeed since been implemented, such as the sea eagle (*Haliaeetus*) and beavers in Scotland²⁴ and recent studies have estimated that the UK would be able to support a population of 450 lynx.²⁵ Polecats (*Mustela putorius*) are also resurging in numbers in Wales and wild boar have thrived since an unofficial release in parts of England and Ireland, including the Forest of Dean.²⁶

CHAPTER TWO: *Wild Boar*

²² Caseldine A, 1990

²³ Rotherham I, 2013. *Trees, Forested Landscapes and Grazing Animals. Routledge* p 36

²⁴ Rotherham I, 2013. *Trees, Forested Landscapes and Grazing Animals. Routledge* p 36

²⁵ Hetherington D (2008) 'The history of the Eurasian lynx in Britain and the potential for its reintroduction', *British Wildlife*, 20 (2): 77-86.

²⁶ Rotherham I, 2013. *Trees, Forested Landscapes and Grazing Animals. Routledge* p 36

So why consider wild boar, rather than an apex predator such as wolf or lynx to rewild Wales? Currently, although the presumed effect of trophic cascades induced by apex predators is accepted, the literature has not produced significant evidence of its occurrence. Perhaps the strongest argument comes from Yellowstone²⁷ where, after 15 years, wolf reintroduction has been linked not only with the ecological release of plant species such as willow and aspen from elk grazing pressure, but also beaver (from the release of willow) and bison (due to decreased inter specific competition). Yet the role of carnivores as inevitable agents of environmental restoration is not so clear, and their effectiveness can vary spatially and temporally with subsequent mesopredator release/suppression.²⁸ The actual evidence for carnivore reintroductions, aside from Yellowstone, having significant impacts on lower trophic recovery is sparse.²⁹ This is weighed against the fact that many apex predators also pose threats to human safety and are more likely to disrupt current agricultural systems from taking livestock etc (a particular issue in Wales given the prevalence of sheep farming). Therefore, when looking to rewild Wales, perhaps it is better to consider a non-apex predator keystone species. Of the remaining candidates, wild boar seem chief among them in suitability. Known for their rooting, foraging habits, they are excellent providers of the aforementioned moderate disturbances that ecosystems crave. Wild boar combine significant ecosystem services, whilst also seeming to be a cultural trademark of Celtic society, with a plethora of associated deities, ritual and artefacts. In terms of practicality, wild boar are a relatively unique candidate as unlike other former keystone species of Britain's past, such as auroch (*Bos primigenius*), they are neither endangered nor threatened on the continent as a whole, with their populations increasing at a healthy rate.³⁰ Wild boar are also unintentionally already an aspect of UK countryside with an

²⁷ 'Trophic Cascades in Yellowstone: The First 15years after Wolf Reintroduction | Elsevier Enhanced Reader' <<https://reader.elsevier.com/reader/sd/pii/S0006320711004046?token=9A2D35DBE2B3E36293F0C711214E50038FA667BE88A83129E0C01D7107807C9471500CE452BAE9EDA997495D82B4FAE6>> [accessed 15 July 2020].

²⁸ 'Ecosystem Restoration with Teeth: What Role for Predators? | Elsevier Enhanced Reader' <<https://reader.elsevier.com/reader/sd/pii/S0169534712000067?token=82DFBADBDBA843D69496B5D0AD3A198DED87B51D53191A9FA1C2B774484C236D9C643B403AA14876C32E5C56E7C9B>> [accessed 15 July 2020].

²⁹ Adam T. Ford and Jacob R. Goheen, 'Trophic Cascades by Large Carnivores: A Case for Strong Inference and Mechanism', *Trends in Ecology and Evolution* (Elsevier Ltd, 2015), 725–35 <<https://doi.org/10.1016/j.tree.2015.09.012>>.

³⁰ Giovanna Massei and others, 'Wild Boar Populations up, Numbers of Hunters down? A Review of Trends and Implications for Europe', 2014 <<https://doi.org/10.1002/ps.3965>>.

unofficial release during 2004 in the Forest of Dean, Gloucestershire, resulting in a thriving feral community. There are also populations stemming from unofficial releases in Dorset, East Sussex, Herefordshire and Kent.³¹

A Matter of Contention

To understand wild boar's place in the rewilding debate, it is first necessary to consider aspects of their life history. Wild boar are large ungulate mammalian vertebrates, and presumably the ancestors of domestic pig. They are omnivorous but largely subsist on vegetable matter with their preferred food being the mast of trees, particularly of oak and beech. Due to favouring these foodstuffs, they are predominantly woodland creatures where they live in groups comprised of roughly two breeding females and their brood. One particular study calculated that a minimum viable population for wild boar is roughly 50 individuals and would need roughly 1000 ha of forest.³² Despite requiring such a sizeable area of woodland, their gastronomic improvisation allows wild boar to exist alongside farmland. Wild boar are known to heavily supplement their diet with arable crops such as oats and potatoes and strong fencing is required to withstand their foraging efforts.³³ More than 40 varieties of crop species have been found to comprise the diet of wild boar³⁴ and in the UK, the potential for pastureland rooting is a significant cause for concern.³⁵ Wild boar can live up to 14 years and have litters of roughly 6 piglets per annum. The timing of breeding and the size of the litter can be heavily influenced by the presence of mast for that year and the rate of natality is very high (as much as 50%) for roughly two years.^{36,37,38} A

³¹ Rotherham I, 2013. *Trees, Forested Landscapes and Grazing Animals*. Routledge

³² O Howells and G Edwards-Jones, *A FEASIBILITY STUDY OF REINTRODUCING WILD BOAR Sus Scrofa TO SCOTLAND: ARE EXISTING WOODLANDS LARGE ENOUGH TO SUPPORT MINIMUM VIABLE POPULATIONS*, *Biological Conservation*, 1997, LXXXI.

³³ Christopher J Sandom, Joeline Hughes, and David W Macdonald, 'Rewilding the Scottish Highlands: Do Wild Boar, *Sus Scrofa*, Use a Suitable Foraging Strategy to Be Effective Ecosystem Engineers?', 2012 <<https://doi.org/10.1111/j.1526-100X.2012.00903.x>>.

³⁴ Schley L & Roper TJ (2003) 'Diet of wild boar *Sus scrofa* in Western Europe, with particular reference to consumption of agricultural crops', *Mammal Review*, 33: 43-56.

³⁵ Goulding (2003) 'Investigation of free-living wild boar (*Sus scrofa*) in southern England', unpublished PhD thesis, University of Sussex, Brighton

³⁶ Jezierski W & Myrcha, A. (1975) Food requirements of a wild boar population. *Pol.ecol. stud.* 1, 61-83.

³⁷ Barrett RH (1978) The feral hog on Dye Creek Ranch, California, *Hilgardia* 46, 281-355.

³⁸ Tisdell CA, (1982) *Wild Pigs: Environmental Resource or Economic Pest*. Pergamon Press. Oxford.

common fate is to succumb to Winter frosts as piglets are susceptible to low environmental temperatures yet, despite this, wild boar can rapidly increase in number and establish thriving communities. This has been witnessed by the unofficial releases in England,³⁹ in part due to the comparatively milder climate as opposed to the colder Winters of continental Europe. Wild boar are primarily vegetarians, with roughly 90% of their diet coming from vegetative matter, the rest comprising small invertebrates, birds and mammals.⁴⁰ This can impact on intra species dynamics as Spanish studies have found that wild boar predate nests belonging to red-legged partridges (*Alectoris rufa*)⁴¹ and also several other bird species, listed as protected, including the Bittern (*Botaurus stellaris*).⁴² Wild boars' penchant for consuming mast may also lead to competition with small mammals who rely on buried mast caches for survival.⁴³

Wild boar are particularly fond of rhizomes and will root enthusiastically for these below the soil. This action disrupts the soil, draining and aerating it. It also breaks up monocultures (which tend to dominate in low or high disturbance systems hence the 'intermediate disturbance hypothesis').⁴⁴ This enthusiastic rooting behaviour and opportunistic omnivorous feeding habits contributes to the controversial nature of wild boar reintroductions. Although wild boar's disruptive ecological services allow for greater biological diversity in the future; to reach the productive stages of their disturbance is to initially accept damage to the contemporary system. Aside from damaging local species assemblages, and the agricultural interference, wild boar can impact on human health as they are potential reservoirs for disease. Zoonotic pathogens may spread to humans through direct contact or indirectly through contaminating domestic pig (*Sus scrofa*

³⁹ Rotherham I, 2013. Trees, Forested Landscapes and Grazing Animals. *Routledge*

⁴⁰ Dardaillon M (1987) 'Seasonal feeding habits of the wild boar in a Mediterranean wetland, the Camargue (southern France)', *Aeta Theriol*, 32: 389-401.

⁴¹ Leaper R., Massei G., Gorman ML., et al. (1999) 'The feasibility of reintroducing Wild Boar (*Sus scrofa*) to Scotland', *Mammal Review*, 29: 239-59.

⁴² Bertolino, S., Angelicz C., Scarfo F, et al (2010) 'Is the Wild Boar an important nest predator in wetland areas? An experiment with dummy nests', in *Book of Abstracts: 8th International Conference on Wild Boar and other Suids*, Food and Environment Research Agency (FERA), York, p54, <https://secure.fera.defra.gov.uk/wild-boar2010/documents/bookOfAbstractsWildBoarNov10.pdf>, accessed 2 June 2012

⁴³ Focardi S., Capizzi D & Monetti (2000) 'Competition for acorns among wild boar (*Sus scrofa*) and small mammals in a mediterranean woodland', *Journal of Zoology, London*, 250: 329-34.

⁴⁴ Eva Horčíčková, Josef Brůna, and Jaroslav Vojta, 'Wild Boar (*Sus Scrofa*) Increases Species Diversity of Semidry Grassland: Field Experiment with Simulated Soil Disturbances', 2019 <<https://doi.org/10.1002/ece3.4950>>.

domesticus) populations. These diseases include African swine fever, classical swine fever, Aujeszky's disease, bovine tuberculosis and foot-and-mouth. Despite this long list, the action plan of the Department for Environment, Food and Rural Affairs (DEFRA)⁴⁵ concluded that interactions between wild boar and domestic pigs are infrequent enough to allow for effective suppression of any emerging endemics.

There is also good reason for their historically infamous reputation as aggressive beasts, and their size can involve them in dangerous instances of Road Traffic Accidents (RTAs).

European data on RTAs was used in conjunction with UK population density in 2005 to estimate that roughly six RTAs due to wild boar would occur each year,⁴⁶ yet the Forestry Commission recorded 22 instances of wild boar RTA deaths during the time from 1 April 2010 to 31 March 2011. Farmed wild boar in Britain are listed in the 1984 amendment of the Dangerous Wild Animals Act 1976 yet, concerning the Forest of Dean population, there is just one recording of an injury to a person by wild boar according to the Forestry Commission.⁴⁷

A Feasible Habitat?

Howells and Edwards-Jones, in a study regarding the feasibility of Wild boar reintroduction to Scotland, used the VORTEX simulation model software (Lindenmayer et al 1995) to suggest a minimum viable population of Wild boar (which could survive 90 years) of around 300 individuals (Howells and Edwards-Jones 1996); yet this number could be significantly reduced by introducing several boar each year from an initial number of roughly 50 individuals. They estimated that to support this population, an area of woodland would need to be at least 500 hectares. To put this into perspective, Cambrian Wildwood Project in

⁴⁵ Defra (Department for Environment, Food and Rural Affairs) (2008) *Feral Wild Boar in England: An Action Plan*, www.naturalengland.org.uk/Images/feralwildboar_tcm6-4508.pdf, accessed 2 June 2012.

⁴⁶ Wilson CJ (2005) 'Feral wild boar in England. Status, impact and management. A Report on behalf of Defra European Wildlife Division', Defra, Bristol, www.naturalengland.org.uk/Images/wildboarstatusimpactmanagement_tcm6-4512.pdf, accessed 2 June 2009.

⁴⁷ Forestry Commission (2011) *Feral Wild Boar Management Plan, Forest of Dean, 2011 to 2016*, Forestry Commission, England, www.britishwildboar.org.uk/Feral Wild Boar Management Plan Forest of Dean.pdf, accessed 2 June 2011

Wales has an area of around 150 ha. Despite this difference in size, Howells and Edwards-Jones did acknowledge the fact that many European populations of Wild Boar have supplementary feeding throughout the year as they are popular hunting stock. Landowners in the UK would undoubtedly supplement the diet of boar on their land if it meant increased revenue from hunting licences etc. Therefore, this estimate of 500 ha may not apply. The Forest of Dean has over 9000 ha of land and the largest forests in Wales are *Coed y Brenin* in North Wales and *Brechfa* in Carmarthenshire (2000 ha and 5800 ha respectively). Yet *Brechfa* is primarily coniferous which is less favoured habitat for wild boar compared with old growth Forest containing beech and oak (*Quercus* spp), with one study in Poland concluding that wild boar densities could be almost five times more in old growth compared to more commercialised forests predominated by spruce (*Picea* spp) and pine (*Pinus* spp).⁴⁸ It seems then that small populations of wild boar are indeed feasible in the current ecological habitats available in Wales.

Previous Wild Boar Rewilding Projects

Wild boar's rooting behaviour introduces moderate disturbance to the soil, removing plant cover and creating novel ecological niches for further colonisation of a wider variety of plant species. Studies have produced conflicting results as to whether this behaviour actually promotes biodiversity with Bratton in 1975 concluding that rooting within The Great Smoky National Park, USA, decreased the understorey of the forest by almost 80%, together with a decrease in plant species. Further continental studies such as those conducted in Germany and Sweden have found wild boar to raise plant biodiversity.^{49 50 51} A British study has been conducted by Sims in 2006. This study was short-term and focused on three locations in East

⁴⁸ Jedrzejewska B., Okarma H., Jedrzejewski W & Milkowski L. (1994) Effects of exploitation and protection on forest structure, ungulate density and wolf predation in Bialowieza Primeval Forest. Poland. *J. Appl. Ecol.* 31, 664-676.

⁴⁹ Milton SJ., Dean WRJ & Klotz S. (1997) 'Effects of small scale animal disturbances on plant assemblages of set-aside land in Germany', *Journal of Vegetation Science*, 8: 45-54.

⁵⁰ Arrington DA., Toth LA & Koebel JW (1999) 'Effects of rooting by feral hogs *Sus scrofa* L. on the structure of a floodplain vegetation assemblage', *Wetlands*, 19: 535-44.

⁵¹ Welander, J. (1995) 'Are wild boars a future threat to the Swedish flora?'. *IBEX Journal of Mountain Ecology*, 3: 165-7.

Sussex.⁵² Sims concluded that wild boar rooting may be beneficial, as plant diversity and cover increased, together with leaf litter decomposition. Sims also touched on the debate regarding destruction to bluebell (*Hyacinthoides non-scripta*) monocultures, suggesting that such damage was temporary.

It is therefore important to exercise caution when reintroducing a species such as wild boar. One possible method of reintroduction is to conduct a 'trial' period where the species in question is contained within a set perimeter for a limited period of time and the environmental impact is observed. Studies using this method have found that their foraging habits and therefore overall environmental impact varies significantly based on the season, with far more rooting activity taking place in the Autumn and Winter.⁵³ It is feasible that this method can also be applicable as a temporary form of land management for certain estates. Boars can be temporarily implemented to till the soil and produce a multitude of new biological niches for plant matter and then withdrawn from the area. This, however, requires expensive fencing to ensure the quarantine of the population. Indeed, it was escaped boar that started the Forest of Dean community.

CHAPTER THREE: A Question of Celtic

Upon considering the reintroduction of wild boar to Wales, why is 'Celtic' rather than Medieval, or even a general history of Wales, chosen to create a cultural argument? In archaeology, the people identified as 'Celts' are primarily associated with the Hallstatt (fl. C. 750-600 BC) and La Tène (fl. C. 500-100 BC) cultural concepts.⁵⁴ These were developed from the discovery of similar art and burial distributions. Likely to have originated in South Central Europe; their motifs found their way to Britain and Germany, where certain art pieces even became incorporated into later 'insular' Christian artwork.⁵⁵ Using Celtic as an ethnic identity seems to hold validity when describing the prehistoric peoples of Central and Western Europe, but La Tène culture also extends to the British Isles, whose ancient

⁵² Sims NKE, (2006) 'The ecological impacts of wild boar rooting in East Sussex', unpublished DPhil thesis, University of Sussex, Brighton.

⁵³ Sandom, Hughes, and Macdonald.

⁵⁴ Aldhouse-Green M & Howell R, 2000. Celtic Wales. University of Wales Press p14

⁵⁵ JM Wooding, The Idea of the Celt, University of Wales Press pp 39-59

inhabitants are not referred to as Celts by the classical sources. Yet this term is applied to them in both academic and popular literature.

There is much debate in Celtic Studies as to the validity of the term 'Celt' to group the nations of Wales, Ireland, Scotland, Cornwall, Brittany etc. This debate has given rise to the concept of 'Celtoscepticism' yet regardless of academic consensus it is a fact that the general public of these countries experience a strong sense of identity with this title.⁵⁶

The term 'Celt' itself is derived from classical sources, where *Keltoi* (Greek) and *Celti* or *Celtae* (Latin) is used to describe the peoples residing to the North and North-West of the Mediterranean.^{57 58 59} *Galli* is also used in classical literature to describe what is accepted to be the same ethnic identity, yet this term is arbitrarily reserved in the modern era to describe the prehistoric Gauls of what is now France. Certain classical authors seem to demonstrate a preference between *Keltoi*, *Galatai* and *Galli*, yet in general they are considered synonymous.⁶⁰ It has proven difficult to study the etymology of these terms, yet the research suggests that *Keltoi* derives from the root **kel*, meaning 'exalt'. This provides a translation for *Keltoi* as 'the high ones' or '*uchelwyr*'.⁶¹ In an attempt to linguistically unite the peoples of Iron Age North Western Europe, Edward Lhuyd in the 16th century created the idea of 'Celtic' languages which were shared by the Scots, Irish, Welsh, Cornish and Breton. Lhuyd formed the idea of P and Q Celtic to differentiate between the differences of Irish and Scottish Gaelic from Welsh, Cornish and Breton.

Lluyd's work inspired the archaeological use of Celtic to denote ancient Britons from the 16th and 17th centuries. It was argued that they were linguistically similar enough to their

⁵⁶ Collis J 2018 *Celts Ancient and Modern: Recent Controversies in Celtic Studies* Studia Celtica Fennica XIV, 58-71

⁵⁷ Chapman M (1978) *The Gaelic Vision in Scottish Culture*. London: Croom Helm

⁵⁸ Renfrew C, (1987) *Archaeology and Language: The Puzzle of Indo-European Origins*. Cambridge: Cambridge University Press.

⁵⁹ Tierney JJ (1960) The Celtic Ethnography of Posidonius. *Proceedings of the Royal Irish Academy* 60: 189-275.

⁶⁰ Hubert, pp. 21-24 'The Celts through Classical Eyes', in *The Celtic World*, pp. 21-33 (p. 22).

⁶¹ DE, Evans, *Gaulish Personal Names* (Oxford, 1967), pp. 332-33; KH, Schmidt, 'Galatische Sprachreste', in *Forschungen in Galatien*, edited by Elmar Schwetheim (Bonn, 1994), pp. 15-28 (p. 15).

continental neighbours to be included within the ethnic term.⁶² The scholar Collis argues how Celtic may be a useful label to denote the family of languages which branched from Gallic yet should not be used as a label for a people that spoke one of these languages.⁶³ Its use has recently become a matter of contention, with a rising number of scholars subscribing to 'Celtoscepticism'. A labelling of a people can be viewed from two perspectives, either referring to a group from the outside, or reference to the group from within. The classical evidence for the concept of Celtic identity is heavily from the outside perspective, this begins to impart doubt on whether the Iron Age peoples of Central and Western Europe self-identified with the term. Indeed, for much of their history, the Lhuyd 'Celtic' provinces of Scotland, Ireland and Wales do not seem to call themselves Celtic until the 18th century, instead referring to the contemporary labels of Irish, Scot, Cymry etc.⁶⁴ Collis argues that even from a material culture perspective, there was enough variation over Europe despite a wider theme of La Tène motif to imply a multitude of culturally distinct people who were connected through language and trade.⁶⁵ The rise of Celtoscepticism sees its supporters argue that the use of the blanket label 'Celtic' creates too many assumptions and obscures historically important subtleties between historical people, and also that from a historical perspective it may simply just be inaccurate, ahistorical modern convention.⁶⁶

Celtoscepticism raises the question of how to define culture and what parameters are placed upon its use when referring to a historical people. This thesis indeed uses the term Celtic to group the lands of Wales, Scotland, France and Ireland as it speaks to the contemporary culture of those regions and the contemporary cultural climate is to identify as Celtic nations. It is also reasonable for any groupings to be made based on linkage, and in the context of this thesis these lands are linked through their references to wild boar in their independent history, mythology and archaeological records. Therefore, despite the term Celtic being potentially 'ahistorical' it appears relevant for this paper and will be used as

⁶² Piggott, *Ancient Britons*, p. 129.

⁶³ JR Collis, JR (1996) *The Origin and Spread of the Celts* Studia Celtica pp 17-34.

⁶⁴ Dietler M (1994) "Our Ancestors the Gauls": Archaeology, Ethnic Nationalism, and the Manipulation of Celtic Identity in Modern Europe. *American Anthropological Association*. Vol.96 (3), p.584-605

⁶⁵ Collis J (1984) *The European Iron Age*. London: Batsford

⁶⁶ James S (1999) *The Atlantic Celts: Ancient People or Modern Invention?* London: The British Museum Press.

such in line with convention, to describe the Iron Age peoples of Central and North Western Europe.

Now that the label of Celtic in the context of this essay has been considered, it is important to justify the actual environmental setting. To make an effective cultural argument for the reintroduction of wild boar into a modern self-identified 'Celtic' country such as Wales, it seems reasonable to use the Celtic period as setting for the argument. The Celtic Setting in Wales is primarily composed of the British Bronze age and Iron Ages (roughly 2,400 BC to 43 AD). This period of time also represents a setting where wild boars were (presumably from sources) rather abundant in British ecosystems. This is despite living alongside a (albeit a much smaller) human population. Using the Welsh Celtic period as a rewilding reference state allows the consideration of wild boar coexisting alongside simpler versions of modern society and agricultural systems, with widespread pastoralism and reduced tree cover (when compared to earlier time periods).⁶⁷ The official extinction date of wild boar lies somewhere around the 18th century, yet pure bred wild boar were more likely lost around the 13th century.⁶⁸ Therefore, the Celtic era represents the period of time before significant demise to the UK population.

Wild boar likely found their way to the British mainland during the post glacial period of the late Palaeolithic and early Mesolithic. During this time, the climate allowed for rapid expansion of mixed deciduous woodland from the European mainland.⁶⁹ The Welsh Neolithic era, however, saw the shift in economies from hunter gathering to pastoralism which subsequently resulted in the clearance of forests. The environmental record shows that the Bronze and Iron Ages in Wales appear to have continued the Neolithic tradition of forest clearance, with a greater emphasis on pastoralism rather than cereal cultivation.⁷⁰ Much like today, Sheep become predominant in the zooarchaeological record and evidence of milking is present from the size and age of the assemblages.⁷¹ Dendrochronological

⁶⁷ Caseldine A, 1990

⁶⁸ O'connor T & Sykes N (2010), *Extinctions and Invasions A Social History of British Fauna* Oxbow Books, Oxford p64

⁶⁹ Caseldine A, 1990

⁷⁰ Caseldine A 1990

⁷¹ Mercer R 1981, *Farming Practise in British Prehistory*, Edinburgh University Press, Edinburgh.

studies suggest three major environmental shifts during the middle of the Bronze Age and it is thought that the relatively warmer climate of the Neolithic began to cool and become wetter.⁷² This would have been particularly apparent in the upland areas of Britain, which may have influenced the greater emphasis towards pastoralism. In Wales, pollen evidence suggests that elms continued to decline as well as tilia, with forest clearance occurring at many sites.⁷³ There is also some evidence, however, of forest regeneration; particularly of the hazel species which suggests a 'patchwork' environment of forest and grassland.⁷⁴ It seems then that despite wild boar arriving on to the UK mainland during a time of widespread forest cover where they established a thriving population, they were able to adapt to the anthropogenic and climatic changes to the environment. This is particularly interesting when considering the reintroduction of wild boar in Wales, as the impending century may well bring a variety of climatic change and intensified anthropogenic pressure. It is useful for a reintroduction candidate to be able to withstand these changes and adapt to environmental pressures, all while providing their fundamental ecosystem services.

CHAPTER FOUR: *Mythologies*

The term 'Celtic' and time period of the Welsh Bronze and Iron Age (2,400 BC to 43 AD) establishes the foundation on which to build the cultural argument for the reintroduction of wild boar. Yet to analyse wild boar's place in the Celtic cultural psyche, it is necessary to analyse their place within the key mythological texts. When regarding the mythology of Wales, the primary text is the *Mabinogion*, a compilation of Welsh Medieval prose that features eleven tales. The first four are referred to as the 'Four Branches' or *Pedair Cainc* and the tonality and thematic content of them seem congruent with one another, extolling the virtues of wisdom, loyalty, and martial prowess. These congruences have led scholars to suggest that the Branches may have been recorded by an individual redactor or author and comprise a single overarching narrative.¹⁴ The rest of the *Mabinogion*, however, comprises of 7 tales which seem to be unrelated aside from the belief that they have their origins in earlier Welsh oral tradition. Artefactually, the *Mabinogion* is preserved within two texts, the

⁷² Baille M, 1982 Tree Ring dating in archaeology. Croom Helm, London.

⁷³ Caseldine A, 1990

⁷⁴ Caseldine A, 1990

Llyfr Coch Hergest (Red Book of Hergest) c. 1382 – 1410,⁷⁵ and the *Llyfr Gwyn Rhydderch* (White Book of Rhydderch) c. 1350).⁷⁶ The dating of the original redaction of the tales is still a matter of contention, with *Culhwch and Olwen* c.1100⁷⁷ argued to be the oldest with the *Four Branches* closely following. Their origins are placed during the late eleventh to early twelfth centuries,⁷ with their actual origins debated to exist in oral form much earlier.⁷⁸ The other 6 Mabinogion tales are thought to have been recorded roughly during the middle to late medieval period (12th – 13th centuries).⁷⁹ Even earlier documentary evidence of these tales exists, with certain fragments being recovered from manuscripts dating to roughly a century prior to the *Llyfr Gwyn Rhydderch*.⁸⁰ It is this possible reflection of pre-Christian Celtic society that qualifies the tales for consideration during this thesis. The tales contain a wide variety of styles and themes, potentially reflecting diverse origins.⁸¹ Other than the human figures that play central roles in the narratives, nature is often a prominent inclusion.

The Mabinogion and The Role of Animals

Much of the creatures within the tales are participants in the hunt, a common motif across the literature of the Medieval period.⁸² Beasts of the hunt: hounds, horses and, of course, wild boar feature most heavily, indicating their value to Medieval Welsh society. Joyce Salisbury described how Medieval society distinguished between domestic and wild animals. Domesticated beasts would act as property for the owners, bestowing material wealth and status whereas beasts of war and the hunt had the highest value.⁸³ The hunt

⁷⁵ Davies S, *The Mabinogion*, p. ix; Huws D, *Medieval Welsh Manuscripts*, p. 82; Bromwich R & Evans DS, *Culhwch ac Olwen. An Edition and Study of the Oldest Arthurian Tale*, p. ix; Bollard JK, *Companion Tales to the Mabinogi, Legend and Landscape of Wales*, p. 9.

⁷⁶ Davies S, *The Four Branches of the Mabinogi*, p.9; Davies S 'Horses in the Mabinogion', p. 122; Davies S, *The Mabinogion*, p. ix; Davies S, 'Mythology and the Oral Tradition: Wales', p. 786; Huws D, *Medieval Welsh Manuscripts*, p. ix; Davies S, 'Mythology and the Oral Tradition: Wales', p. 786; Huws D, *Medieval Welsh Manuscripts*, p. 89; Green & Howell R, *Celtic Wales*, p. 103; Johnston D, *The Literature of Wales*, p 17; Bollard JK, *Companion Tales to the Mabinogi. Legend and Landscape of Wales*, p. 9.

⁷⁷ Bromwich R & Evans DS, *Culhwch ac Olwen. An edition and Study of the Oldest Arthurian Tale*, p. lxxxii

⁷⁸ Davies S, *The Mabinogion*, pp. 34, 46 and 64

⁷⁹ Davies S 'Mythology and the Oral Tradition: Wales', pp. 786-787

⁸⁰ Davies S, *The Four Branches of the Mabinogi*, p. 9

⁸¹ Davies S, 'Mythology and the Oral Tradition: Wales', p. 786.

⁸² Smets A & van den Abeele B, 'Medieval Hunting', p.71.

⁸³ Salisbury JE, *The Beast Within: Animals in the Middle Ages*, pp. 7-27.

itself is clearly a pastime of utmost significance, particularly for the nobility of the court. It seems to be a display of martial prowess and courage in the face of wild and ferocious creatures such as wild boar.⁸⁴ The beasts depicted in the tales often exhibit an Otherworldly quality, whether it be unusual size or colour. They seem to frequently lead hunters toward strange and unexpected encounters as observed in *Pwyll* and also *Historia Peredur vab Efrog*. The chase leaves the hunters astray from their entourage, often to stumble upon the Otherworld where certain virtues are assessed, this is also a recurring vernacular medieval literary motif.⁸⁵

Wild boar represent several key characters and occurrences within the events that unfold over the course of the *Mabinogion*. They seem to act as catalysts for change, or guides to another state of being. This is observed in *Manawydan*, the third branch of the *Mabinogion*, where a 'gleaming-white wild boar'⁸⁶ entices Pryderi into becoming imprisoned in a magical fort conjured by Llwyd. This scene represents an integral part of the narrative and may also demonstrate swine's ability to reveal the inner nature of characters. Pryderi's swine revealed Gwydion to be the vengeful trickster (in *Math*), and the wild boar of Llwyd may have revealed Pryderi's rash nature as he desires to lift the curse on Dyfed (in *Manawydan*). This nature is compared to the temperance of Manawydan, who also features in the hunting of Twrch Trwyth in *Culhwch*.⁸⁷

Yet it is the oldest tale, *Culhwch ac Olwen* that is perhaps most important for analysing the value of wild boar in the cultural psyche as the narrative features two major set pieces involving boar hunts and the titular *Culhwch* is particularly bound to these animals. The hunts form part of the tasks given to Culhwch and his retinue by the giant Ysbaddaden for the hand of his daughter in marriage. The tasks themselves are related to the preparation of the attendees of the wedding and the event itself. The foremost boar hunt occurs fairly early in the completion of the tasks and involves 'Ysgithrwyn Pen Baedd',¹⁰ which translates as 'White Tusk Chief of Boars'.⁸⁸ The tusk of this beast is requested by Ysbaddaden to shave

⁸⁴ Salisbury JE, *The Beast Within: Animals in the Middle Ages*, pp. 38-40

⁸⁵ Green DH, 'The Pathway to Adventure', pp. 185-186; See also Green MJ, *Celtic Myths*, pp. 29-30

⁸⁶ Davies S, *The Mabinogion*, p. 54

⁸⁷ *Ibid.*, p. 212

⁸⁸ *ibid.*, p.270

for the potential wedding, and the object is to be plucked from the still alive creature. Despite this, the boar's head is cleaved in two⁸⁹ by an axe and further, it 'was not the dogs that Ysbaddaden had demanded of Culhwch that killed the boar but Cafall, Arthur's own dog'.⁹⁰

The second boar hunt, that of the 'Twrch Trwyth, son of Taredd Wledig'⁹¹ represents a much larger portion of the tale, with greater description applied. Linguistically, *trwyd* is an older form of *trwyth* and is 'cognate with the Irish *triath* meaning 'king' or 'boar'.⁹² The figure is also paralleled in early Irish literature in the form of 'Torc Triath, king of the boars of Ireland'.⁹³ The boar's Irish connection is further instilled by the setting of the initial part of the hunt and that he has 'destroyed one-third of Ireland,⁹⁴ and before coming to Wales proceeds in laying waste to another fifth. It is eventually revealed that the boar was indeed a king changed form as penance from God for sins committed.⁹⁵ These sins are not described in detail. He is one of the major characters of the narrative, representing the primary obstacle to Culhwch's marriage to Olwen and the greatest challenge to Arthur.⁹⁶ Twrch Trwyth ferociously protects his piglets,⁹⁷ of which six were named. One of these was Grugyn Gwrych Eaint or Grugyn Silver-bristle,⁹⁸ named for his bristles which 'were like wings of silver, and one could see the path he took through the woods and over fields by the way his bristles glittered'.⁹⁹ Twrch Trwyth is not described in detail himself, but the hunt proves a chaotic, dangerous and arduous affair, revealing a true ferocity to the beast. This intimidating and formidable impression of the boar is further highlighted by the act of Arthur to gather 'every warrior...every choice hound and celebrated steed'¹⁰⁰ to aid him in the quest for the comb between Twrch Trwyth's ears. Arthur himself, when pitted against

⁸⁹ *Ibid.*, p. 208

⁹⁰ *Ibid.*, p. 208

⁹¹ *Ibid.*, p. 198

⁹² *Ibid.*, p. 209

⁹³ Bromwich and Evans DS, *Culhwch ac Olwen*, p. lxxviii.

⁹⁴ Daves S, *The Mabinogion*, p. 208

⁹⁵ *Ibid.*, p. 209

⁹⁶ Ross A, *Pagan Celtic Britain*, p. 398

⁹⁷ Davies S, *The Mabinogion*, pp. 209-211

⁹⁸ *Ibid.*, p. 274

⁹⁹ *Ibid.*, p. 209

¹⁰⁰ *Ibid.*, p. 209

the beast for 'nine night and nine days'¹⁰¹ only managed to slay one piglet. The hunt's climax 'ends virtually in a draw between Arthur and the boar, although the carnage on both sides is great'.¹⁰² Amongst the dead are the piglets and many of Arthur's retinue. Twrch Twryth is 'driven straight into the sea,¹⁰³ and doesn't come back. Yet despite not slaying the boar, 'the purpose of hunting the boar was not, in any case, to kill him, but to obtain the valuable treasures from between his ears'.¹⁰⁴ These treasures are the shears, razor and comb that 'appear to symbolise his regal status,¹⁰⁵ and are procured just before the beast disappears into the ocean. The shears are needed for the trimming of Ysbaddaden's hair for the wedding of Culhwch and Olwen. This is related to the trophy from the previous boar hunt, Ysgithrwyn's tusk to shave the giant. Both Ysgithrwyn and Twrch Twryth are narrative catalysts, with their treasures taken in order for the marriage to go ahead. The *Mirabilia* which is appended to *Historia Brittonum*¹⁰⁶ (c. 829-30)¹⁰⁷ 'also features the hunting of Twrch Twryth by Arthur and Cafall, his hound. This implies that the famous boar chase may have existed prior to the written version of Culhwch ac Olwen as an independent tale, which the redactor merged in with the overall narrative of *Culhwch*.¹⁰⁸ The Twrch Twryth is also alluded to in other Welsh literature, reinforcing the idea that this was a well-known tradition.¹⁰⁹ The cultural importance of the tale is reflected in the onomastics. Many placenames are attributed in origin to *Culhwch* like Garth Grugyn, the location of the piglet Grugyn's demise. Perhaps the rivers Twrch and Gwys which may 'commemorate or gave rise to the tales of these mythic boars'¹¹⁰ also find origins in *Culhwch*.

it is also interesting that the titular character is inextricably related to pigs. He is born in a sty and reared by a swineherd, even the two central boar hunts are perhaps to be expected given *Culhwch's* porcine associations; with Ysbaddaden perhaps plotting the character's death in a manner which reflected his birth. If this is true, it also conveys the relatedness of

¹⁰¹ *Ibid.*, p. 209

¹⁰² Ford PK, *The Mabinogi and Other Medieval Welsh Tales*, p. 119

¹⁰³ Davies S, *The Mabinogion*, p. 212

¹⁰⁴ Bromwich R & Evans DS, *Culhwch ac Olwen*, p. liv.

¹⁰⁵ *Ibid.*, p. ixix

¹⁰⁶ Morris J, *Nennius: British History and The Welsh Annals*, p. 42

¹⁰⁷ Charles-Edwards T, 'The Arthur of History', p. 15

¹⁰⁸ Bromwich R & Evans DS, *Culhwch ac Olwen*, p. lxvii

¹⁰⁹ *Ibid.*, p. lxv.

¹¹⁰ Bollard JK, *Companion Tales to the Mabinogi. Legend and Landscape of Wales*, p. 62

wild boar and swine to the Celtic people which supports the idea that the value of the pig was in some part due to the sacred value of the boar. Even Pryderi, who is postulated to be the primary hero within the interwoven plot of the *Four Branches* appears to be connected with swine. The gifted swine from Annwn to Pwyll indirectly leads to his death, and they are only described during the Fourth Branch, despite ostensibly being gifted within the first.¹¹¹ In *Math* the magical swine of Arawn are used by Gwydion to spark war between the Kingdoms of North and South Wales. He influences Math to obtain these creatures, yet it is an effort to get alone with Math's lap maiden, Geowin. When refused the herd of swine, as Pryderi 'should not part with them until they had bred twice their number in the land',¹¹² Gwydion uses magic to create an illusory hoard of treasures to pay for the pigs. When the spell is broken and the truth revealed, war is announced between the kingdoms of Math and Pryderi which results in Pryderi's death and Geowin's rape. Ultimately, the swine play a crucial role in the termination of Pryderi's character arc, a huge event in the context of the Four Branches, underlying the swines' role as catalyst for change. This is also seen in the raping of Geowin, which sparks the penance of Gwydion which eventually leads to the introduction of Blodeuwedd. The penance involves Gwydion and his brother, Gilfaethwy being transmogrified into three animals consecutively and forced to breed in each form. The subsequent broods are named according to the animals which birthed them and are then entered into the court of Math to serve as a reminder of the brothers' misdeeds. The beasts are deer, wolf and indeed, wild boar. The narrative of *Math* eventually leads to a sow aiding in recovering Lleu by guiding Gwydion to his location. Gwydion follows the sow to a spot beneath an oak tree where the sow feasts on viscera which descends from an eagle resting in the branches above. This eagle is a wounded Lleu, who is then reverted to human form and healed, yet it is interesting that again, such a prominent narrative event in the arc of a major character is facilitated by a pig.

This prominence of swine is also observed In *Bran*, where appears that Matholwch's swine may also potentially have been derived from the Otherworld, as it is hinted that he visited a mound which may have been the mound of Arberth from *Pwyll* and *Manawydan*,¹¹³ where

¹¹¹ Davies S, *The Mabinogion* p. 48

¹¹² *Ibid* p. 49

¹¹³ *Ibid.*, pp 8-10, 36 & 43

he encountered the giants Cymidei Cymeinfoll, Llasar Llaes Gyfnewid and an enchanted cauldron in their possession.¹¹⁴ Given the relationship of wild boar to the Otherworld, could the act of Matholwch and Pryderi obtaining swine from this magical realm be in some way a reflection of the act of domestication and interbreeding of wild boar to produce domesticates? The wild boar itself may resemble the mystical realms of nature and the domesticated pig representative of the bounty such nature provides for man. If this were true then it may also imply the status bestowed upon swine in the mythologies is in part due to their association with wild boar, which again reflects their reverent status in the Celtic psyche.

Aside from *Culhwch* and the Four Branches, pigs also often 'recur frequently in Celtic Saints' lives in which the saint is directed to follow a white boar or sow who will lead him to a suitable building site for his church'.¹¹⁵ This latter association with the Saints demonstrates the relation to the pig with the supernatural and also with the fate of characters and the land. This relationship is strengthened when considering the fact that it is a pig that provides companionship to *Myrddin* when he ventures into the forest during the events of the poems *Yr Afallennau* and *Hoinau*.¹¹⁶

To fully assess the place of wild boar in the wider Celtic context it is necessary to analyse literature from adjacent lands which would have similar influences and reflect a similar environment. Celtic mythology is most often comprised of Welsh and Irish myth, as there are fewer records of Gallic, Bretonic etc tradition. Across the Irish sea, mythical boars and magic swine abound in the literature.¹¹⁷ These include the Torc Triath, pigs of Cruachan and six pigs of Derbrenn,¹¹⁸ of which one pig is even of the name 'Caelcheis' which may represent a cognate of *Culhwch*.¹¹⁹ Boars frequent insular myth primarily in the form of food during feasting and the quarry of wild hunts. The element of the hunt is extensively featured as 'Pig-hunting appears in many early Irish tales, especially of the *Fianna*'¹²⁰

¹¹⁴ *Ibid.*, p. 26

¹¹⁵ Bromwich R, *Trioedd Ynys Prydein*, p. 55

¹¹⁶ Bollard JK, 'Myrddin in Early Welsh Tradition', pp. 22-30

¹¹⁷ Ross A, *Pagan Celtic Britain*, p. 399

¹¹⁸ MacCulloch, JA. *Celtic Mythology*, pp 125-127

¹¹⁹ Ni Chathàin, P., 'Swineherds, Seers, and Druids', p. 202; Bromwich R & Evans DS, *Culhwch ac Olwen*, p. 47.

¹²⁰ Mac Coitir, N., *Ireland's Animals: Myths, Legends and Folklore*, p. 85.

including the boars Ben Gulban and Formael, with the former ultimately causing Diarmaid's death.¹²¹ In addition to this, 'Fenian warriors are constantly portrayed as hunting not only powerful boars, but tremendous, transformed otherworld animals, whose purpose seems to be to lead the heroes to some Otherworld abode'.¹²² This Otherworldly association with pigs is shared with Welsh tradition and is further exemplified by the fact that Irish narrative often 'attributes the introduction of pigs in Ireland to the Gods, the Tuatha Dé Danann'.¹²³ This of course resembles the acquisition of swine by Pwyll, as they were gifted to him from the Otherworld by Arawn. Perhaps the most epic of the Irish traditions, the *Táin Bó Cúailnge* sees the significance of the swineherd portrayed¹²⁴ and even the bulls at the heart of the tale were initially swineherds themselves who had suffered consecutive transmogrifications.¹²⁵

Boar's presence in the narratives signify their importance to the contemporary medieval audience. This is further exemplified through other notable works of Medieval literature, such as *Gawain and the Green Knight*, which also features an epic hunt of wild boar. Scholars have stated how 'boar remained a powerful figure in medieval imagination, feared and respected. It represented power, invincibility, and fearlessness and appeared in literature marking these qualities'.¹²⁶ Yet this Medieval perspective on wild boar would have owed much to the preceding societies, and scholars have suggested that the 'boar is, without doubt, the cult animal *par excellence* of the Celts'.¹²⁷

In the wider European Iron age, Norse myth, which is based on earlier Germanic tradition, features several references to wild boar. Davidson explains how, In the poem *Skaldskaparmal*, Loki is seen to be responsible for crafting divine treasures of the Gods.¹²⁸ The trickster god employs a team of dwarves to create trinkets such as Mjolnir (Thor's Hammer), Draupnir (Odin's ring) and Gullenbursti, a golden boar crafted for Freyja and

¹²¹ Ross A., *The Pagan Celts*, p. 117

¹²² Ross A., *Pagan Celtic Britain*, p. 401

¹²³ *Ibid.*, p. 398

¹²⁴ Ni Chatháin P., 'Swineherds, Seers and Druids', p.203

¹²⁵ Mac Coitir N., *Ireland's Animals: Myths, Legends and Folklore*, p. 9

¹²⁶ Salisbury JE, *The Beast Within: Animals in the Middle Ages*, p. 40

¹²⁷ Ross A, *Pagan Celtic Britain*, p. 390

¹²⁸ Davidson & Davidson (1993) *Lost Beliefs of Northern Europe* Routledge pp. 84-85

Freyr. Davidson proceeds in stating how the boar symbolism of this last pair of gods who have been attributed to the Old Norse 'Lord and Lady' continues with Snorri's additional names for Freyja which include 'Syr' or 'sow', again reflecting the female analogue of Freyr's boar symbolism.¹²⁹ In Norse and Irish myth, feasting on swine is reflected in several tales. In *Gylfaginning* 37, a boar is eaten in Valhalla by the Einherjar each night before regenerating to be consumed the following evening. This draws comparisons In Irish myth, where the God Manannan has a herd of pigs that could be consumed repeatedly and the Dagda in the second conflict of Mag Tuired had swine which were 'perpetually alive'.¹³⁰ Again, as discussed previously, this may lead to the idea that the distinction between boar and pig was not particularly great, and therefore the status of swine and their herders may represent value in the reverence for wild boar. Bernhard Meier writes in his book *A companion to Religion in Late Antiquity* about the similarities in ritual, religious culture and personal belief held between the Germanic and Celtic peoples of Early Iron Age Europe. He explains how both reflect a common root, as well as wider Roman influence.¹³¹ At the very least the Gundestrup cauldron, which was found in Jutland, Denmark, suggests strong Celtic imagery; and that material culture flowed between Celtic and Germanic people, if at least for trade.¹³² Therefore, there is justification in the consideration of boar in Germanic mythology to better understand the beast in the Celtic cultural psyche.

The prominence of swine in Bronze, Iron Age and Medieval society in the British Isles is also reflected in the etymology of locations. Pigs are responsible for several Irish place names¹³³ and by using the Archwillio reference network to search for Welsh placenames involving the Welsh words *Twrch/Tyrchod* and *Baedd/Baeddod* it was possible to construct a list of Welsh placenames that may potentially relate to Boar (*Figure 1*). The tradition of placenames describing the local environment is clear, such as evidenced by the recent research into the historical Welsh distribution of golden eagles and sea eagles.¹³⁴ Therefore, it is possible that

¹²⁹ Davidson & Davidson (1993) *Lost Beliefs of Northern Europe* Routledge pp. 84-85

¹³⁰ *Ibid.*, pp.84 and 108-111

¹³¹ Maier B 2018, *The Celtic and Germanic West and North* chapter in 'A companion to Religion in Late Antiquity' Wiley pp 99-100

¹³² Bergquist A & Taylor T., (1987) *The Origin of the Gundestrup Cauldron* Antiquity, **61** (231): pp. 107-124

¹³³ Mac Coitir N. *Ireland's Animals: Myths, Legends and Folklore*, pp. 15 & 87

¹³⁴ Sophie-lee Williams and others, 'An Evidence-based Assessment of the Past Distribution of Golden and White-tailed Eagles across Wales', *Conservation Science and Practice*, 2020
<<https://doi.org/10.1111/csp2.240>>.

placenames describe local ecology as well as geography. Of course, there may be other explanations for the presence of boar in a placename unrelated to the physical geography of the location in question. It may reflect a trade, cult, legend, hero, or trait. Yet even these explanations reinforce the strength of boar in the cultural Celtic psyche. A total of 91 results were found, spread across the entire region of Wales. Of the various counties, Carmarthenshire is responsible for 30 of the 91 locations, representing nearly a third of all placename accounts of boar in Wales. The most common word by far is *Twrch*, literally boar, and the most common associated geographical feature is *Cwm* or valley. Other popular associated features are variants of *Waun* and the word *Cae*.

CHAPTER FIVE: *Wild Boar in Archaeology*

Boar are an insignia of Celtic culture. This is apparent archaeologically, where wild boar appear on the crests of helmets, scenes on the Gundestrup cauldron, coinage, the musical instrument carnyx as well as a wide array of artwork and metal figurines.¹³⁵ The symbolised boars often sport bristles exaggerated in size and prominence in order to illicit an aura of aggression and awe. They were adopted as images of war, because of their ferocity and indomitability; and they were symbols of prosperity, because pork was a favourite Celtic food and played an important part in feasting'.¹³⁶

Gundestrup Cauldron

Archaeological evidence for swine is legion. They are frequently depicted on metalwork such as the Gundustrup cauldron, found in 1991 in the north of Jutland, Denmark. It represents one of the most widely circulated Celtic archaeological discoveries, yet it should be remembered that its Celtic identity is not conclusive, with several scholars suggesting a more

¹³⁵ Green M, *Symbol and Image in Celtic Religious Art*, pp. 139-140

¹³⁶ *Ibid.*, pp 139-140

northern or eastern location for its construction and purpose.¹³⁷ Thought to be dated to the early Iron Age (first century BC), the cauldron is beaten from silver and contains several panels both on the interior and exterior which offer a tantalising glimpse into prehistoric belief and ritual. The exterior panels, of which there are seven, are observed to display figures which may be deities. There are seven in total, with four male and three female, yet they do not complete the circumference of the cauldron and it is speculated that another 8th panel has become lost to time.¹³⁸ The interior panels focus more on ritualistic scenes than individual figures. There has been debate over the cultural origins of the cauldron despite being found in Northern Europe. Several depictions of scenes involving bulls have prompted scholars to create a link between the cauldron and Hindu belief, yet among the fantastical creatures present on the artefact, the representation of 'real' creatures such as stag and boar strongly suggest a Celtic representation. Boar feature on three separate panels, two on the interior and one on the exterior (*Figures 2-5*). The inside panels show a procession of individuals using carnyxes carved into the heads of boar (more on carnyxes later), whilst the other panel displays a seated, horned individual accompanied either side by a stag and a boar. The exterior panel is referred to as 'The Master of Animals' and shows a large figure holding a man in each hand, who in turn are each holding a boar. The seated individual has been linked to the Celtic deity Cerunnos, who is thought to be depicted on a pillar in Paris known as the 'Pillar of the Boatmen' or *Nautes Parisicae*. The pillar features a relief of a seemingly older man with short antlers that each bear a torque. Similar images thought to be Cerunnos have been found across Europe and it is thought that the figure represents a shaman or deity that is connected to the natural world, hence its depiction as 'The Master of Animals' on the Gundestrup Cauldron.¹³⁹ This figure seems to be of some prominence in the Celtic pantheon and therefore its association with boar on the Cauldron would imply a strong reverence for the creature. The panel with the carnyx procession also features four cavalrymen astride their mounts. One of these riders is wearing a helm adorned with a boar figurine. There is an example of a figurine of a bronze boar which was 10.5 cm in length recorded at Luncani,

¹³⁷ Hachmann, Rolf (1991). Gundestrup-Studien. Untersuchungen zu den spätkeltischen Grundlagen der frühgermanischen Kunst, in: Bericht der Römisch-Germanischen Kommission, Band 71 1990, 2. Teil: 568-903. Mainz am Rhein: Verlag Philipp von Zabern.

¹³⁸ Davidson & Davidson 1993 *Lost Beliefs of Northern Europe* Routledge

¹³⁹ Green, Miranda J. (1989). *Symbol and image in Celtic religious art*. London/New York: Routledge pp 141

Romania and dated to the 1st or 2nd century BC.¹⁴⁰ This figurine likely represents a decoration for a helmet (*Figure 6*). Three similar bronze boar helm attachments were found at Hounslow in England and dated to the early 1st century or late 2nd century BC.¹⁴¹ Not only can the boar attachment be seen on a helm in the Gundestrup cauldron but also on a silver coin from Esztergom, Hungary, which also depicts a person wearing a boar adorned helm, and is dated to the 1st century BC.¹⁴² The cauldron as a whole has been strongly linked to Irish myth, particularly the *Tain*.¹⁴³ Boar symbolism is strongly apparent in Celtic Irish myth and if the Gundestrup Cauldron indeed represents many instances of what is sacred to the Celtic peoples, it is clear that the form of the boar is among them.¹⁴⁴ Also of course, the cauldron was known to be a sacred item among the Medieval Welsh and possibly their Celtic forebears, with Arthur retrieving the cauldron from the Otherworld in *Preiddeu Annwfn*, and the Cauldron of rebirth in *Bran*.¹⁴⁵

Carnyx and Coinage

The instrument of the carnyx was synonymous with North Western European La Tène material culture¹⁴⁶. The carnyx was a horn of war, similar to the *Lituus* of the Etruscans, with specimens occurring from the Balkans, Gaul and Britain. Records indicate that its use was primarily between 4th century BC and 4th century AD.¹⁴⁷ The carnyx often took the form of a boar's head, with the sound of the instrument translated into the bellowing of wild boar. Such an instrument proved striking to Classical writers such as Polybius, who wrote of the carnyx upon describing the battle Between Gauls and Roman at Telamon in 225 BC:

¹⁴⁰ Green, Miranda J. (1989). *Symbol and image in Celtic religious art*. London/New York:Routledge pp 141

¹⁴¹ [A. W. Franks (1865). *[Account of the additions made to the collections of British Antiquities at the British Museum during the year 1864]*. In: 'Thursday, 23rd March, 1865'. *Proceedings of the Society of Antiquaries of London (Second Series)*, 3, pp 83-94 (for the Hounslow hoards, see pages 90-92)].

¹⁴² Megaw R & Megaw V (1989) *Celtic Art. From its Beginning to the Book of Kells*, Thames & Hudson, London

¹⁴³ Olmsted G (1976) *The Gundestrup version of Táin Bó Cuailnge* Cambridge University Press, 50 (198) pp. 95-103

¹⁴⁴ Davidson & Davidson 1993 *Lost Beliefs of Northern Europe* Routledge

¹⁴⁵ Davies S (2006) *The Mabinogion* pp 26

¹⁴⁶ Swan D (2018) *The Carnyx on Celtic and Roman Republican Coinage* *The Antiquaries Journal* 98, pp 81-94

¹⁴⁷ Hunter F (2001) 'The carnyx in Iron Age Europe' *Antiq J* 81, 77-108

*'For there were among them such innumerable horns and trumpets, which were being blown at the same time from all parts of their army, and their cries were so loud and piercing, that the noise seemed to come not from human voices and trumpets, but from the whole countryside at once'*¹⁴⁸

Such was the cultural significance of the carnyx and the boar for the Gallic Celtic people, that the romans adopted the image on their coinage as an emblem of conquest over such a proud and fierce people as a demonstration of their imperialism.¹⁴⁹ Coins are an interesting insight into a particular culture as the images contained on them would have been imprinted into the subconscious psyche. The role of coins in gift giving, funerary rites and as a sign of social status also imbues these images with a cultural significance. It is still a matter of contention as to what role coins played in Gallic and British society, and perhaps more emphasis was placed on them used during rites than for the operation of an economy.^{150,151} It is likely that at least in certain areas, they were used economically due to the findings of coinage at settlement sites.¹⁵² The carnyx is depicted on several examples of Iron age coinage from North West Europe (*figure 7*).¹⁵³ The player of the carnyx on Gallic and British coinage seems to be often attributed with supernatural associations, for example a Gallic statue found at Pauvreley, France is observed to be carrying a carnyx yet the player features an extra finger on one hand. This has been theorised as simply a physical anomaly yet, as we have seen previously with mythical depictions of boar and the over emphasis of physical features, it may reflect the mystical status of the player, perhaps a deity or supernaturally blessed individual, indeed both abnormality and supernatural status need not be mutually exclusive.¹⁵⁴ When carnyxes have been recovered from sites in Romania, Switzerland and Scotland (Sălustan, Kappel, and Deskford, respectively) it was found that they were all

¹⁴⁸ Oldfather CH (ed) (1933). *Diodorus Siculus: Bibliotheca Historica*, Harvard University Press, Cambridge

¹⁴⁹ Crawford MH (1974) *Roman Republican Coinage*, Cambridge University Press, Cambridge

¹⁵⁰ Fitzpatrick A (1992) 'The roles of Celtic coinage in south-east England', in M Mays (ed), *Celtic Coinage. Britain and Beyond: the eleventh Oxford symposium on coinage and monetary history*, 1-33, Tempus Reparatum, Oxford.

¹⁵¹ Sillis J (2003) *Gaulish and Early British Gold Coinage*, Spink, London

¹⁵² Holman D (2005) 'Iron Age Coinage and settlement in east Kent', *Britannia*, **36**, 1-54

¹⁵³ Swan D (2018) *The Carnyx on Celtic and Roman Republican Coinage* The Antiquaries Journal **98**, pp 81-94

¹⁵⁴ Aldhouse-Green M (2004). *An Archaeology of Images: iconography and cosmology in the Iron Age and Roman Empire*, Routledge, London

broken prior to deposition.¹⁵⁵ The destruction of various cultural paraphernalia such as statues, tools and swords occurs elsewhere throughout North West Iron Age Europe yet other also in independent cultures. The Native American Pueblo tribe would destroy ritualistic drums in order to uphold the belief that this act would release the spirit contained within.^{156,157} This may also explain the dismantling of the carnyx and if so, would confer supernatural associations not only with the player, but also of the instrument itself. Therefore, if the most popular guise of the revered instrument was in the shape of a boar, it would be reasonable to assume the supernatural status of wild boar among North West Iron Age people. This supernatural connotation is expanded upon when it is considered that artistic depictions of the carnyx, such as those discussed earlier in the Gundestrup Cauldron, display an ostensibly religious ceremony.

Focusing on Britain in particular, the First century BC King that ruled in the Kent area, Dubnovellaunus had coinage which depicted a female figure holding a carnyx whilst riding naked on a horse.¹⁵⁸ Naked women were not common representations on coins, with the exception of the deity Victory, and their inclusion often results from the representations of deities such as Demeter or Ariadne.¹⁵⁹ This Dubnovellaunus coinage likely follows the same pattern and therefore strengthens the supernatural connotations of the carnyx. The female figure herself has not been identified yet it is possible that she is related to the woman who rides a horse naked on ancient Breton (Armorican) coinage.¹⁶⁰ These would have been produced perhaps nearly a hundred years before and seem to have militaristic associations due to the woman being armed. There is also a Post-Caesarean conquest find at Loire, France, of Victory herself carrying an instrument thought to be the carnyx.¹⁶¹

Beyond supernatural examples of representing the carnyx, many examples also display association with the social elite. Frequent representations of the carnyx in Britain involve

¹⁵⁵ Hunter F (2001) 'The carnyx in Iron Age Europe', *Antiq J*, **81**, 77-108

¹⁵⁶ Vanpool CS (2009) 'The signs of the sacred: identifying shamans using archaeological evidence', *J Anthrop Archaeol*, **28**, 177-90

¹⁵⁷ Vanpool CS (2012) 'The spirit in the material: a case study of animism in the American south-west', *American Antiq*, **77**, 243-62

¹⁵⁸ Rudd C (2010) *Ancient British Coins*, Page Bros, Norwich

¹⁵⁹ *Ibid.*, pp. 2864, 2879

¹⁶⁰ De Jersey P (1994). *Coinage in Iron Age Armorica*, Oxford University Committee for Archaeology, Oxford

¹⁶¹ Hunter F (2001) 'The carnyx in Iron Age Europe', *Antiq J*, **81**, 77-108

cavalrymen clad in chainmail, and those in Gaul are often of charioteers and severed head wielding warriors.¹⁶² Chainmail would have been expensive armour accessible only to the upper echelons of Celtic society, likewise with chariots. It also seems that cavalrymen and charioteers were the prized assets of the Celtic army with Caesar commenting on the fact that it was these troops which would engage in battle first, and therefore would have access to greater glory.¹⁶³ The Gallic coins depicting carried human heads may be related to the activity of head hunting, which again displays martial prowess and dominion over the enemy. Therefore, the carnyx found in relation to these powerful social images strongly suggests its status and value in Celtic society if not among the supernatural, then at least the elite.

CHAPTER SIX: Zooarchaeology

Moving beyond the realms of material archaeology, where it seems that wild boar are reflected in images of the social and religious importance, it is important to consider the zooarchaeological remains of wild boar in the Welsh historical record. Zooarchaeology is the study of animal bones in (relatively) recent geological history. Otherwise known as ‘quaternary palaeontologists’, zooarchaeologists largely focus on the animal remains of human influence from agricultural and hunting lifestyles. Zooarchaeology can therefore tell us a great deal of information not only regarding the lives of people throughout history, but also of the past environment in which humans were a significant component. In the context of wild boar, zooarchaeological records in the Celtic era allow an estimate of their prevalence not only in the wider European ecology of the time but also of their place in Celtic society from associations with burial rites and feasting etc. Zooarchaeological evidence can be extremely useful in both constructing ‘natural historical’ and ‘cultural’ arguments for the reintroduction of a species.

As discussed earlier, the boar’s prevalence and connection in Celtic religion results in their faunal remains occurring over Iron Age Europe. Whole skeletons have been found in

¹⁶² Rudd C (2010) *Ancient British Coins*, Page Bros, Norwich

¹⁶³ Hammond, C (ed) 1996. *Julius Caesar: the Gallic Wars*, Oxford University Press, Oxford

Chelmsford, Britain and Sopron, Hungary¹⁶⁴. The Welsh zooarchaeological record is plagued by the poorly preserving acidic nature of the soils, particularly in Mid and North Wales. Despite this, wild boar remains are occasionally found. Among these sites are Dyserth and Dryslwyn Castle, and the Romano British site of Prestatyn.^{165 166} Even prehistoric Welsh sites contain wild boar, with Ogof yr Ychen on Caldey Island¹⁶⁷ and the Gwent levels at Goldcliff.¹⁶⁸ However, it is the recent archaeological work at Llanmaes which may reveal much on the presence of wild boar in Celtic cuisine and wider culture.¹⁶⁹ The Iron age site of Llanmaes contains a midden where over 71% of the domesticated animal remains were pigs. Further than that, it seems that the vast majority of pig remains were the right fore quarter. Llanmaes has been speculated to have been the site of elaborate feasting events and potentially fits Hayden's criteria of a competitive feasting site. Competitive feasting was a practise which occurred in Celtic culture that saw high status individuals host ever more lavish feasts in order to demonstrate wealth and power. Madgwick and Mulville, however, argue that Llanmaes may instead have been a site where feasts were used to strengthen social bonds rather than demonstrate the dominion of the elite.¹⁷⁰ The particular nature of the pig remains (primarily right fore quarter) may have been due to sacred offerings of a religious context. The overall presence of pig itself makes sense given their applicability to feasting as they have large, sometimes multiple annual litters, show little discrepancy over food, gain weight quickly and do not harm secondary economic product systems when slaughtered. It is very likely that some of these pig remains also represent wild boar that have been misidentified (this will be explored later). Another paper looked at the DNA sequencing of pigs at a Hallstatt salt mine in the Austrian Alps where many pigs were

¹⁶⁴ Green MJ (1992a) *Dictionary of Celtic Myth and Legend*, Thames & Hudson, London

¹⁶⁵ Jackson (1915) *Note on the vertebrate and molluscan remains from Dyserth Castle*. In Glenn (1915). Arch Camb. 70, 77-82

¹⁶⁶ Jones (1989c) *The animal bone* In Blockley K (1989) 'An Iron age farmstead and a romano-british industrial settlement in North Wales' B.A.R. British Series, 210, 211-221

¹⁶⁷ Davies M in Ford T 1989. *Limestones and Caves of Wales*, Cambridge University Press, pp 79-92

¹⁶⁸ Bell M, Allen J, Nayling N, Buckley S. 2002. Mesolithic to Neolithic coastal environmental change c. 6500-3500 cal BC Archaeology in the Severn Estuary 12 (for 2001): 27-53.

¹⁶⁹ Madgwick R, Mulville J, 2015. *Feasting on fore-limbs: Conspicuous Consumption and Identity in later prehistoric Britain*. Cambridge University Press.

¹⁷⁰ Madgwick R, Mulville J, 2015. *Feasting on fore-limbs: Conspicuous Consumption and Identity in later prehistoric Britain*. Cambridge University Press.

routinely taken to be preserved for later consumption.¹⁷¹ Not only does this paper reinforce the idea that pork was central to the Iron Age Celtic diet, but also that the DNA analysis provides evidence that wild boar were also largely present in the diet and there was much interbreeding between wild and domestic pig. Perhaps it is this interbreeding that allowed the Celts to have such fierce domestic pig as described by the classical accounts.

Roman accounts of the Celts often highlight their taste for 'fresh and salted' pork. With archaeological evidence supporting the accounts of the 'champion's portion of pork'. Writers of the Classical age like Strabo spoke of the prominence of pork in Celtic cuisine¹⁷² and the bones of pigs appear regularly in graves and may have an association with feasting in the Otherworld.¹⁷³ Psodonius described the traditions of the champion's portion of pork among the continental Celts. Evidence suggests that the Celts did indeed hunt wild boar¹⁷⁴ but it seems as though wild boar did not comprise a large part of the consumed foodstuffs,¹⁷⁵ implying a ritualistic function or indication of status and martial prowess. This idea is supported by the fact that archaeofaunal records 'for domestic pigs is very abundant, but boar bones are rare'.¹⁷⁶ Therefore, the archaeological evidence conveys the cultural significance of swine to the Celts, a significance which is preserved in the narrative traditions of later Medieval Wales and Ireland. The domestic swine of the European Celtic peoples were noted for their size and pugnacity.¹⁷⁷ The feasting on pork also occurs frequently in the mythology of these peoples. The hunt of wild boar also seems to be a huge cultural process, a sign of status and martial prowess, intimately connected with the Gods and the Otherworld. Despite this, archaeofaunal evidence has turned up a relatively small amount of boar remains, compared to domestic pig. This has led some researchers to question whether there indeed was a thriving population of wild boar in Iron Age Europe.¹⁷⁸

¹⁷¹ Hammer S, et al (2018) *Bronze Age meat industry: ancient mitochondrial DNA analyses of pig bones from the prehistoric salt mines of Hallstatt (Austria)* BMC research notes, Vol. 11 (1), p. 243-7

¹⁷² Koch T & Carey J. *The Celtic Heroic Age: Literary Sources for Ancient Celtic Europe and Early Ireland and Wales*, p. 17

¹⁷³ Green M, *Symbol and Image in Celtic Religious Art*, pp. 139-140

¹⁷⁴ Green M. *Symbol and Image in Celtic Religious Art*, p. 139; Maier B. *Dictionary of Celtic Religion and Culture*, p. 224.

¹⁷⁵ Maier B, *Dictionary of Celtic Religion and Culture*, p. 224

¹⁷⁶ Green M, *Animals in Celtic Life and Myth*, p. 46

¹⁷⁷ Strabo, and Roller DW (2014) *The Geography of Strabo*. New York, Cambridge University Press, 2014, chapters 5-7

¹⁷⁸ Menial P (1987a) *Chasse et élevage chez les Gaulois (450-2 Av J.C.)* Editions Errance, Paris.

However, recent research suggests that by adopting different classification techniques of swine remains, using nitrogen analysis to identify bones rather than simple metric measurements,¹⁷⁹ would yield greater numbers of wild boar identifications among zooarchaeological assemblages. As discussed previously, the accounts of Celtic domestic swine described unusually large creatures compared to swine of the Classical Mediterranean people. This would render a simple metric analysis as unreliable. Nitrogen isotopes however, measure for a difference in diet. Domestic swine would likely have had a more carnivorous diet than wild boar, utilising the leftover animal foods of the Celtic Societies, whereas wild boar are almost entirely vegetarian. It may well be the case that many bones identified as domestic pig are actually wild boar and therefore a review of deposits should be conducted, such as those at Llanmaes.

The zooarchaeological record obtained from a variety of sites (caves, hill forts etc) imply that that the reliance of deer as a food source decreased during the bronze age, with red, rather than roe deer being the preferred hunted quarry.^{180,181} Despite these findings directly indicating the diet, and not the ecology of early Celtic Wales, it is likely to reflect in some way the environment. The prevalence of red deer, over roe deer, supports the wider paleoenvironmental evidence of forest clearance and re-emergence of grasslands as red deer can adapt well to this habitat. The general picture of the ecosystem by the Iron Age then, appears to have been one where large tracts of woodland till existed, yet they were probably fragmented by areas of extensive pastoralism and settlement. This scenario would reflect the future of modern Wales well as it is unreasonable to suggest a return to a woodland-dominated landscape and the removal of pastoral and social systems, yet there may not need to be. The Iron Age site of Llanmaes¹⁸² was home to several specimens of wild boar, indicating that there was still sufficient woodland left in Wales and the surrounding area to maintain a harvestable population of these species, for special events at least. At

¹⁷⁹ Rowlett R (1994) *Did Iron Age Celts Really Hunt Wild Boar (Sus Scrofa)?* Proceedings of the Harvard Celtic Colloquium Vol. 14, p. 195-210

¹⁸⁰ Pinter-Bellows in Hughes (1992) *The excavation of a late prehistoric and Romano-British settlement at Thornwell Farm, Chepstow, Gwent* Oxford.

¹⁸¹ Davies M in Ford T 1989. *Limestones and Caves of Wales*, Cambridge University Press, pp 79-92

¹⁸² Madgwick R, Mulville J, 2015. *Feasting on fore-limbs: Conspicuous Consumption and Identity in later prehistoric Britain*. Cambridge University Press.

minimum, this does not rule out the possibility of extensive agricultural systems operating alongside wilder tracts of land with thriving wild boar populations.

CHAPTER SEVEN: *Jungian Boars*

Prehistoric societies often reflected the nature surrounding them in their religious systems. Celtic society was no different, animism seems to have been a large part of their spirituality with natural symbolism found on iconography, artwork, and archaeological finds such as cauldrons, armour, weapons and coinage.¹⁸³ Deities represented are of Romano-Celtic belief with Arduinna the boar goddess,¹⁸⁴ Epona the horse goddess¹⁹ and of course, Cerunnos. As mentioned earlier, Cerunnos seemed to be a shamanistic figure with shape shifting capabilities.¹⁸⁵ There are parallels with the Norse God Odin, who is considered to be head of the Aesir not due to simple divinity but through having access to the power of shapeshifting. The boundaries between human and animal become blurred when considering these shamanic figures, starkly contrasting to the later cultural perspectives of the Christianised medieval and renaissance periods where man was believed to possess inherent dominion over nature, rather than comprising part of the natural whole.

Carl Gustav Jung was fascinated by the interplay between the conscious and subconscious of the human psyche. Jungian psychology acknowledges that consciousness is borne from unconsciousness, and there are varying levels of organisation of unconsciousness with which to provide information to the conscious.¹⁸⁶ This is akin to driving a car where the actions needed are not rationally considered once learned. The same can be observed in playing a musical instrument and many other examples of human behaviour. It is also related to the idea of 'Eureka' where Archimedes stumbled upon his revelation of calculating the volume of objects from supposedly measuring the rise in water level of his bath. Certain scholars believe that this is the 'creative solution' to problems, where immersion is first required into the mechanics of the issue, before frustrating the

¹⁸³ Green M (1986) *The Gods of the Celts* The History Press pp 155

¹⁸⁴ *Ibid* pp. 171

¹⁸⁵ Green, Miranda J. (1989). *Symbol and image in Celtic religious art* . London/New York:Routledge

¹⁸⁶ Jung CG (1969) *The Collected Works of C. G. Jung, Vol. 9i: The Archetypes and the Collective Unconscious*. Bollingen Series XX. G. Adler & Hull RF, eds. Princeton: Princeton University Press

consciousness regarding a solution.¹⁸⁷ After a period of rest, the subconscious then provides the solution, and this method is often attested to by inventors who use dreams to innovate. Jung desired to explore how the subconscious was able to do this, and as a result extensively studied mythology, primitive art, dreams, and patients under hypnosis in order to explore the subconscious mind as expressed through unconscious states (hypnosis, trance, sleep) and also through prehistoric art, which he felt had been manipulated less by rational artistic thought. Patterns that emerged across patients or cultures may reveal the workings not only of the individual unconscious, but also the collective unconscious. Jung felt that people's unconscious was able to extend to a collective state where ancestral or group memory was able to be accessed in order to react to present situations.¹⁸⁸ These collective instincts, he initially entitled primordial images, but later settled on Archetypes. They are similar to the concept of 'predispositions' as described for individuals who demonstrate innate abilities for certain skills.

It could be argued that culture, therefore, may express the collective unconscious archetypes of a people, yet the particular culture will manifest these archetypes into different guises based on their environment. *Homo sapiens'* evolution is ripe with evidence for the development of imagination. Particularly when considering the burial ceremonies of ancient peoples and their artistic production in the forms of paintings or carvings, attempting to capture the nature they were immersed in. Hutton uses this as argument as well as the construction of technology for music or worship to portray the inherent capability of humans to conceive religion. It seems that the collective unconscious that Jung described has existed from the very inception of humans in this world.¹⁸⁹ The repeated image of the boar in Celtic culture may indicate such an archetype, whether it is the resilient, rugged spirit of man to survive in difficult circumstances or the warlike spirit of the aggressor. In relation to rewilding and the argument of cultural significance, the acknowledgment of boar, not only as an animal of reverence, but as a manifestation of the Celtic spirit is perhaps the greatest argument one can make for the cultural case of wild boar

¹⁸⁷ Koestler A, *The Act of Creation* (1964) New York: Dell p. 118

¹⁸⁸ Robertston R (2016) *Jungian Archetypes: Jung Gödel, and the History of Archetypes*. New York: Open Road Distribution pp 127

¹⁸⁹ Hutton R. *Pagan Britain*, 2013. Yale University Press pp 1-3

reintroduction. As, potentially, a Celtic land without boar is a land without the reflection of the Celtic spirit.

Conclusion

After reflecting on the archaeological, natural historical, archaeofaunal and mythological contexts of wild boar in Iron Age Welsh and wider European Culture, it appears clear that the animal was at the forefront of the Celtic psyche. Wild boar are keystone species that offer intermediate disturbance to ecosystems. A practise that likely increases biodiversity and ecosystem resilience in the long term by sacrificing short term damage to the existing flora and fauna, particularly impacting monocultures. Their potential risks to humans and the environment can be mitigated through use of certain reintroduction techniques such as using temporary, seasonal holdings. Within the Celtic Iron Age cultural psyche, wild boar hold prominence as symbols of prosperity, war, mysticism and royalty. References to wild boar abound in Celtic and Irish myth and on archaeological works such as the Gundestrup Cauldron, reflecting their wider place in the Celtic belief system. Their remains have been found across Europe, and in Wales at Llanmaes they are inextricably linked with feasting. Furthermore, wild boar may reflect Jungian concepts of archetype in the collective Celtic unconscious and therefore perhaps represent part of the Celtic Identity itself. This should be considered when assessing the validity of wild boar reintroduction into Welsh ecosystems. Not only do they fill a necessary ecological niche that their absence has left in the Welsh environment, but they also restore the cultural framework of a land that proudly boasts its heritage.

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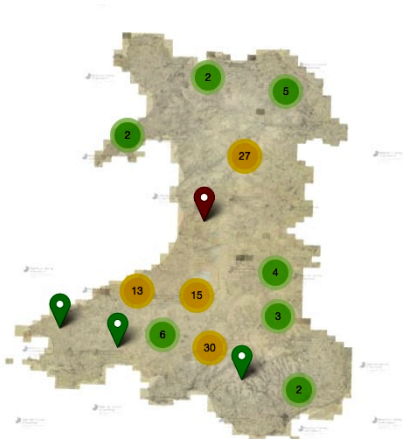


Figure 1: Wild Boar Placename Map of Twrch from Archwillio.

<https://historicplacenames.rcahmw.gov.uk/placenames?q=twrch> ACCESSED 29/09/2020



Figure 2 Gundestrup Cauldron: Eluère, C (1993). *The Celts – First masters of Europe*, London: Thames & Hudson p117.



Figure 3 Gundestrup Cauldron: Master of the Animals/Cerunnos

https://78.media.tumblr.com/108f06214bc9b5ded01b317133b7cb53/tumblr_inline_nwxt0c1kWOLSFJJKPP_1280.JPG [ACCESSED 18 Mar. 2018]



Figure 4 Gundestrup Cauldron: Carnyx procession

https://78.media.tumblr.com/de194c44037d21b71ac3720c3c4918c2/tumblr_inline_nwxt10w3zq1sfjjkp_1280.jpg [Accessed 18th March 2018]



Figure 5 Gundestrup Cauldron: Four riders from the inner plate C 6574: cf. Fig.21



Figure 6: Bronze Boar figurines thought to have adorned helmets:

<https://balkancelts.files.wordpress.com/2014/06/lictt-cluj.jpg> [Accessed 2nd April 2018];

<https://balkancelts.files.wordpress.com/2014/06/gund-houn.jpg> [Accessed 2nd April 2018];

<https://balkancelts.files.wordpress.com/2014/06/obverse-of-a-celtic-silver-coin-from-esztergom-hungary-early-1st-c-bc.jpg> [Accessed 3rd April 2018]



Figure 7: Gallic Coins depicting a rider holding carnix. Photograph: courtesy of the Portable Antiquities Scheme, SF-4C72C3, <https://finds.org.uk/data-base/artefacts/record/id/215360> (accessed 28 June 2018)

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