

Insights Into the Function of Ireland's Souterrains

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Despite frequent discovery, very little has been gained as to the purpose and intention of souterrains in Ireland during the Early Medieval period, from 400 - 1169 C.E.. Little beyond description and planning of most of these man-made caves has been completed due to a simple lack of research focused on these sites alone. By performing a regional study of the souterrains found in County Cork, Ireland and a small sample selected for field investigation in Northern Ireland, this study has been able to ascertain potential insights into the nature of these structures. The focus of this study is on those souterrains that are located away from any known occupation enclosure of the period. The idea behind the study was that the evidence of settlement, or the lack of it, at souterrain sites could aid interpretations of the sites' purposes. Further, soil phosphate testing is being used at selected sites in Northern Ireland to determine if human occupation was present at the unassociated sites, or if these sites were traveled to from other permanent locations. Current results indicate that some of these souterrains were the location of summer transhumance, or locations of summer cattle grazing sites, and were designed to protect the women and children who cared for the cattle in the uplands. If souterrains were indeed designed for defensive purposes, the current image of conflict for the period could be drastically changed.

Introduction

It is the intent here to discuss the archaeological use of theories of landscape and conflict and as they apply to the study of Irish souterrains, built and used during the Early Medieval period. It will also touch on the purpose and intention of the construction of these souterrains. Through a regional study of those found in County Cork and a small sample selected for study in Northern Ireland, this study, so far, has been able to gain certain insights into the nature of these structures.

Souterrains are completely subterranean man-made structures thought currently to be used as places of storage and refuge, consisting of combinations of passages and chambers, some of which include additional features such as cupboards, escape passages, air-vents, drains, trapdoors, elevated trapdoors and jambstones. Some also contained defensive features. They could be entered through simple ramps, steps, hatches, shafts, pit-drops, or a combination of the above.¹ The passages could be easy to navigate or have constrictions in height and breadth making traversing inside difficult (Fig. 1). The inner dimensions of those souterrains used in this study were on average measured between two and three feet in height along the passages and around five feet high at the center of the chambers. It is important to point out that some passages measure as small as 20 inches square (Fig. 2). In comparison, the average height of men during this period was approximately 167.1 cm or five feet six inches and women averaged at 154.8 cm or approximately five feet tall according to a mortuary study conducted in County Donegal.²

Through associated finds and historical documents, the most recent researchers have placed souterrains in existence from c. 500- c. 1200 C.E..³ Clinton suggests souterrains were thriving between c. 750 - c. 1250 C.E. There are some that may have appeared before this time and a few that remained in use afterwards. Souterrains were tunneled into rock and boulder clay or were built from drystone within a prepared trench.⁴ Some were thought to have



Figure 1: Passage and Chamber of souterrain, located within Dromena Cashel (stone walled enclosure) in County Down, Ireland. This souterrain was built with a pit-drop entrance. Photo by H. Menz.

been natural rock caves or clefts that were expanded to suit specific needs and others may have been made from wood. A very small number of timber-built souterrains have been found.⁵

It is the general consensus that souterrains were built as places of storage which were occasionally used as a place of refuge. They are an architectural features that became more popular during a time when feelings of fear and conflict were rising. Through locational analysis, or the plotting/mapping of known sites and studying their location relation to their general environment and other sites, and looking at their inner design, we can provide some insights into their nature beyond the general statements made in previous works. Beyond simple excavation and description, not much attention has been paid to these features in the landscape. Some were located within known settlements/farmsteads, while others have no known enclosures or settlements associated with them at present. It is the intent to further investigate the nature of these unassociated souterrains and determine if people were in fact living at these sites, a detail



Figure 2: The creepway (approx. 0.5m square) and chamber (1m by 2m) of one of three souterrains located at the Ballywee settlement, County Antrim, Ireland. Photo by H. Menz.

that has only been assumed up to this point. The choice of settlement patterns, household organization and the adoption of technological innovation are only a few of the everyday tasks which are embedded with important cultural choices.⁶ The decisions made by the Early Medieval peoples in Ireland on where to place their farmsteads were influenced and guided by their cultural background and relationship with their local environment. Bender has written that “landscape is the spatial manifestation of the relations between humans and their environment.”⁷ People change their work spaces, living spaces, homes and environments according to how they effect their senses, value and use and therefore they are constantly changing as people engage with them and re-work them to their needs. Cultural identities are created and disputed partly through the engaging with their environment.⁸ As humans interact with their cognized environments, or the environment that is that peoples cultural understanding of nature as opposed to literal or operational environment, contradictions inevitably arise and these contradictions are the material of change. Changes come to fruition with the resolution of conflicts between and

among human groups, as well as between humans and the physical environment.⁹ These changes can be seen in Medieval Ireland in architectural features, changes in the written language, and farming techniques.

Early Christian or Early Medieval Ireland encompasses the period between c. 400 C.E. and c. 1169 C.E.. The evidence available for this period comes from both archaeology and several written documents. A good share of the information provided in the historical documents has been at least partly supported by archaeological data. Information provided by annalists and palynological data indicate a climate that made the growing of cereals difficult.¹⁰ There are several recorded instances in which nearly all the crops were lost, bread was not available and nearly all the cattle of Ireland were lost.¹¹ While previously these instances of economic shortages would have been interpreted as the cause of conflict, aggressiveness and war-like values, according to Ember and Ember¹² it is rather the recurring threat of unexpected disasters like these in this climate that was the cause of conflict. This pattern is most apparent, according to their study, in societies with less complex political structure.

More recent research has centered on the topic of the extent of the social hierarchy. Archaeologically, there is little to differentiate one site from another. Looking at the usual indicators of social stratification: burial practices, settlements patterns, and zooarchaeological assemblages, has revealed little.¹³ Soderberg believes that the archaeological evidence only shows that the clientage of Early Medieval Ireland, or relationship between lord and vassal initiated by the lien of cattle, fostered a higher degree of social stratification, but the cooperative features of the institution prevent too much distinction. The rather symbiotic relationship between lord and vassal of giving and taking shows very little differentiation in material culture between sites.

At this point in time, Ireland was dominated by a pastoralist economy and was transitioning

from local kin-based social politics to regional dynastic lordships. Another study includes paleoenvironmental data, documentary evidence, and settlement patterns to show a possible socio economic shift during this early period.¹⁴ Settlement patterns seem to shift towards more arable land coinciding with the height of souterrain use. Pollen data suggests that cultivation of cereals increased during the sixth through eighth centuries and again during the ninth century.¹⁵ This coincides with the supposed rise in Irish overlords during at least the eighth and ninth centuries if not earlier.¹⁶ The majority of the population comprised of mixed-farmers whom were dispersed over the landscape. Little buffer was allowed against agricultural deficits which led to hunger, increased morbidity, depressed fertility and plague. Much of the violence that occurred was scheduled and allowed in congruence with the agricultural calendar, the most violence occurring over the spring and summer when food stores were low and fields had yet to be harvested.¹⁷ It was around this time, with the rise of overlords, that there is a possible change in conflict patterns occurring that the rise of souterrains could be indicative of. A predictor of violent behavior was a socialization for mistrust.¹⁸ The enculturation of fear and mistrust of strangers, or others, resulted in a people much less likely to resolve conflict through negotiation as they see all culturally constructed 'others' as potential enemies. This idea of a 'socialization for mistrust' encourages us to look for other indicators of conflict in the archaeological record beyond the obvious walls, defenses, weapons, and skeletal remains and more towards physical evidence within the community.

The farmsteads of the between 400 and 750 C.E. before souterrains were at their height, were scattered across the landscape and consist mostly of enclosed, single family settlements (rath). This fragmentation of society into small nuclear dwellings, most of which were delineated by a circular earthen bank and ditch are a great example of an indicator of fear or mistrust.¹⁹ The introduction and rise of the souterrain, some of these souterrains

are located within one of these enclosed farmsteads, preliminary research suggests that up to 60% of souterrains are not associated with an enclosed settlement and are thought to be indicative of an open settlement.²⁰ Souterrains were clearly a defensive mechanism being completely subterranean and effectively invisible from the ground surface. Much like McCartney's study of fear in Iron Age France, this could represent a shift from small scale endemic warfare and mistrust of a fragmented society to a period of more complex, full scale warfare.²¹

A souterrain could protect important food stores and the families that built them in time of need. If souterrains were intended to protect against cultural outsiders, then the completely subterranean nature should be considered sufficient protection. However, access from within the souterrain itself was restricted by defensive mechanisms such as drop entrances, trap doors, jambstones, constricted passages (Fig. 2) and inner doors. This suggests that the builders of the souterrains were expecting them to be found, indicating a defense against members of their own culture familiar with the existence of these structures and who would be looking for them. The existence of machicolation (recessed alcove above passages where defenders could take an offensive stance such as dropping stones or other objects on attackers) like features in some support the refuge of people, in that someone would be waiting inside along the passage waiting to defend their people and belongings against intruders.

Present interpretations of the unassociated souterrains present in Ireland are previously unknown and unstudied open settlement types. Along these lines, they could indeed be simply be a single settlement type. Another interpretation could be that these souterrain sites are the colony sites of spreading and growing family groups. Farmers beginning their own farmstead, perhaps after earning their own cattle. Eventually these farmsteads could gain in economic status and are able to construct the earthen ramparts of an enclosed

farmstead for defensive/status/delineation purposes. It costs only two cows to build a souterrain according to the texts, but far more are required to build a rath.

Alternatively, the day-to-day activities of the people who built the souterrains may indicate a separate function or secondary option. These unassociated souterrains may be utilized at the summer transhumance or booley sites/villages in the uplands, often located a considerable distance from the more permanent dwellings.

The other issue at hand for this study is occupation. While it has been established that people were living at many of the raths located throughout the country, as single farmstead homes, were people actually living at the unassociated/unenclosed souterrain sites? If people were living at these sites, then the interpretation of a refuge for rapid and random raiding can be supported. If no one was actually living at these defensive sites, then the idea of the types of conflict put across by the texts of the periods may be misrepresenting the type of conflict that was occurring. In order to utilize these sites, if people were not living there, more advance notice of conflict would be required in order to travel to the souterrain. Alternatively, perhaps they were strictly to protect their goods and belongings at an off-site location.

For the purposes of this study two methods have already been utilized: Thiessen polygon landscape analysis and soil chemical phosphate analysis.

Thiessen polygons delineate areas of influence around a given set of points based on proximity. This means that the area delineated by the polygon is closer to that enclosed site point than any other site point, determined through simple Euclidean distance. This method was applied to those sites plotted in the regional analysis of County Cork I conducted in 2006.

Furthermore, a soil chemical analysis is currently being conducted on several sites located in the Counties Armagh and Tyrone

in Northern Ireland. Soil phosphate levels are being measured as indicators of human occupation. Elevation of phosphate levels has been proven to be the most stable indicator of human occupation. Phosphorus (P) is omnipresent in animal bone, tissue and manure, and is usually found naturally in soils only in low parts per million, however, human activities strongly elevate P in the soil and it remains relatively immobile.²² Archaeological features such as burials, refuse pits containing animal bones, hearths, cooking features, or middens contain highly elevated P levels.²³

First, all information available on the souterrains in County Cork was collected. A chart of 165 souterrains was created organizing the information by location, number of chambers, materials of construction, number of nearby raths, nearby historical monuments, and water resources. Those souterrains of which the exact location was found were plotted. The distance was measured between each souterrain and Thiessen polygons were constructed (Figure 3). Each was then separated from the other at half the distance. All the raths within these zones around the souterrains were noted as part of the landscape and any emerging patterns were analyzed.

Locational Analysis

Unassociated souterrains tend to be surrounded by raths in a semi-circular manner. One possibility is that these sites were colony sites. Farmers began their own farmstead, perhaps after earning their own cattle. Eventually these farmsteads gain in economic status and are able to build the ramparts of a rath for defensive purposes. In these cases, the farmsteads spent two cows to build a souterrain but were unable to gain enough cattle to build a rath. The fields of a rath were thought to radiate away from the rath, therefore it would make sense for a souterrain to belong to a farmstead that has yet to become a rath. One problem with this theory is that not all unassociated souterrains are in the vicinity of other raths. Other examples show a cluster of souterrains both within raths and unassociated in a circular pattern, but as of

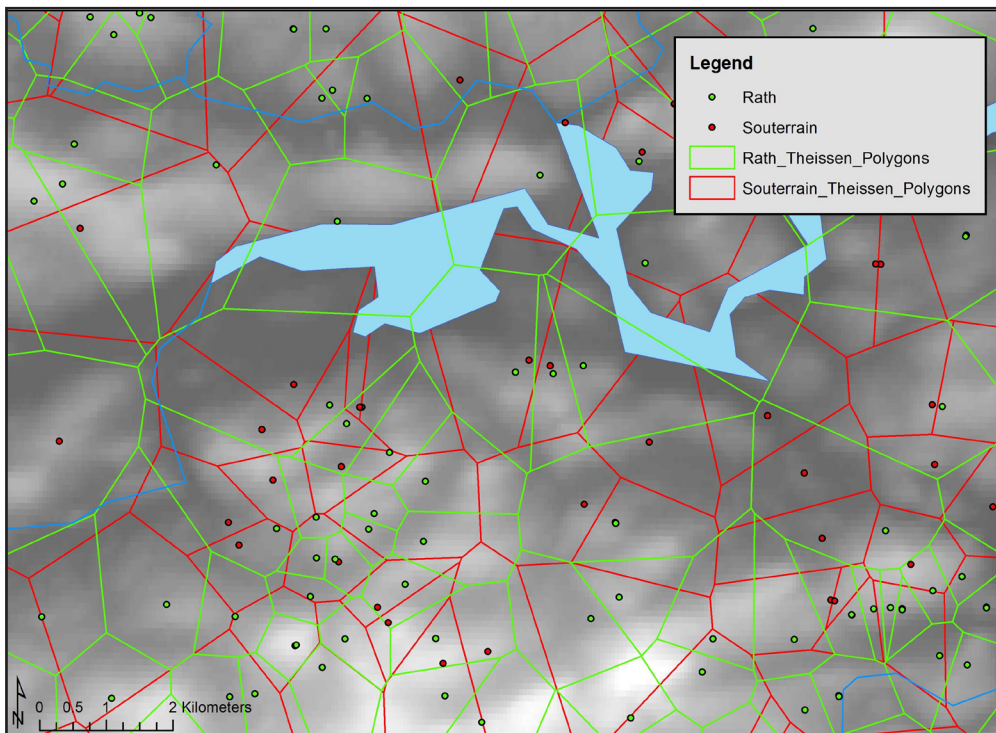


Figure 3: Thiessen Polygons of both souterrains and enclosed farmsteads (raths) in central County Cork Ireland.

the 1975 Ordnance Survey, there is no central rath. Some unassociated souterrains are located within two kilometers of another, while others are several kilometers apart. This supports the colony theory. The colonizers could move to the closest available land or decide to separate themselves from their origin even more. Without more fieldwork at these sites, it is very difficult to determine their origin. There is not enough conclusive evidence or consistency in these simple locational patterns to support this conclusively.

Alternative Explanations

Souterrains have been explained simply as a place of refuge for a farmstead, a cool storage place or a combination of the two. My extensive research has revealed other, more complex possibilities that have not been considered before. Extensive conflict is an obvious reason to place souterrains into a refuge category.

The day-to-day activities of the people who built these structures have not been taken into consideration. I have considered the secondary and recurrent functions.

Another theory would be that some of these unassociated souterrains were those used during the summer months as part of a booley (transhumance) village. Booleying is the summer grazing of cattle on upland and mountain pastures, often at considerable distance from the permanent dwellings.²⁴ Here, usually, the young girls of a settlement would tend to the cattle and make butter and cheese, which would eventually be transported back to their home settlement as the stocks accumulated. If these pastures were actually located within a manageable distance of their home then the milk may be taken there for processing instead. They lived in huts or small houses that were left vacant the rest of the year. It was documented at one village

that the walls of these huts were built of mud and sod.²⁵ The people of Berehaven neighborhood, Co. Cork were once quoted: "The mountains have good pasturage on them and they make huts and keep their cattle on the mountain in summer and live on new churn butter and milk."²⁶ According to the Life of St. Senán, transhumance involved the travel of moveable supplies to make a house and primarily involved women and children.²⁷ A current project being undertaken in a deserted booley village on Achill Island, Ireland has been dated as having been in use from the 12th to the 19th centuries.²⁸ Souterrains were in use through 1200 C.E., which falls into this time period. While these dates do not cover the entire period of souterrain use, it can be said that booleying possibly occurred before the 12th century in some fashion.

Souterrains, being an underground structure, would be a cool, even-temperature storage space for dairy goods. The defensive features could be to protect the goods created there. They could also have served as a refuge for those using the booley village. Many accounts have said that it was the young girls who accompanied the cattle to the booley village probably without a substantial male presence, during the season favored for cattle raiding.²⁹ The farmers would want a way to protect the girls from raiders, who would primarily be after cattle but definitely would not be against collecting slaves or wives as well.

Souterrains are frequently located near the higher elevations. Many of those who have published on the subject noted that they were located on the southern slopes. The southern slopes would protect the settlement from the prominent winds and provide for drainage. The average size of two to four chambers in souterrains would account for several farmsteads utilizing the same souterrain in the booley village especially considering that the upland pastures were used by many local families. In addition, the souterrain being used by several raths would account for the necessary labor to build the souterrain. Those booley villages that were within short distance

from their home settlements would have been satisfied by a souterrain with one chamber for they were only storing milk until it could be transported back home. Quite often, the souterrains that possess only one chamber are very close to a known rath, well within a day's travel. Those raths that contain souterrains may have had their booley villages close enough to allow for the regular transport of milk for storage there, with no necessity for girls to spend time isolated far from the settlement.

Geochemical Survey

The geochemical surveys have been completed at two of the six chosen sites in Northern Ireland at this time and a partial survey has been completed at a third. Samples were taken at ten meter intervals in the area directly associated with souterrain location and then every 25-50 meters in the surrounding area, covering at least 100 square meters. As most of these sites are located in land broken up into several fields used for pasturage, as much of the adjacent land was tested as feasible.

So far I have studied two unassociated souterrains and one associated with a rath. The souterrain associated with a rath presented phosphate hotspots, which after excavation proved to be associated with modern agricultural activity in the form of french drains.

The second site, the first of the unassociated souterrains, indicated the presence of human occupation through elevated phosphate right in the direct vicinity of the souterrain (Fig. 4). The excavation of a one-meter by three-meter trench revealed a possible house floor, though no datable material was recovered. The other difficulty presented at this site was also modern agricultural activity. The discovery of a house floor was not definitive as the compact, charcoal flecked surface indicative of house floors of this period and only presented itself in very small locations throughout the trench (Fig. 5). Much of the potential occupation layer had been disturbed the previous summer when the landowner plowed the field with a new twelve

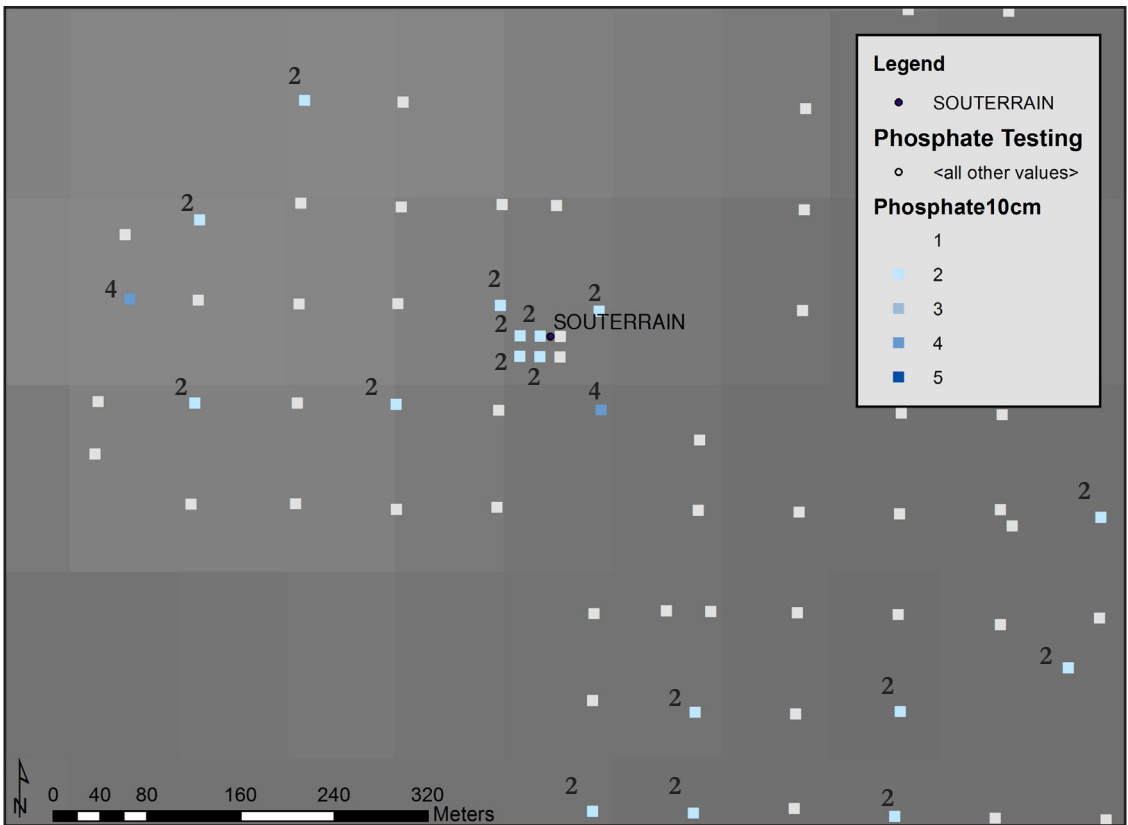


Figure 4: Phosphate results from a depth of 0 to 10cm below ground surface of fields surrounding unassociated souterrain, County Tyrone, Ireland.

inch plow, which replaced their much smaller four inch plow. Local archaeologists suggested studying a site in Northern Antrim where there would be less modern agricultural disturbances and this has been planned for the future.

At the third site, another unassociated souterrain, no excavation has occurred as no measurable increase in phosphate presented itself around the souterrain site. I was unable to conduct the chemical survey in one field adjacent to the site of the souterrain due to the planting of barley by a local farmer renting the land. There were no elevated phosphate levels found at the location of the souterrain.

The limited information provided by the phosphate testing thus far indicates that each unassociated site may have served a different purpose. Some may have been open settlement sites occupied by people in an adjacent house, while others remained alone with no associated occupation or very limited and short occupation phases that leave no chemical trace in the soil. It is my recommendation to further include geophysical testing in conjunction with the chemical analysis to reveal any other evidence of non-surface occupation that would not have been detected by the phosphate testing. It is possible that the diet and practices of the people living in Ireland during this period limit the function of phosphate testing as a prospection method.



Figure 5: Excavation trench at County Tyrone unassociated souterrain showing compact areas of possible house floor remains. Photo by H. Menz.

Conclusion

Architectural features indicate that the people of this time lived in small households, the majority of which are located within enclosed areas suggesting a considerable demarcation between family groups. This combined with the nature of souterrains and an ability to protect personal items indicates intra-group conflicts in fragmented society that may very well change before and after the arrival of the Anglo-Normans in 1169 C.E. but this is outside the scope of this article.

Much more excavation and research is needed to gain a better understanding of souterrains. It can be said that their physical features support the conclusion that they were intended as places for storage and temporary refuge. The locations of some suggest that their original purpose may have been as storage and refuge for booley villages, especially the unassociated sites, and eventually their usage was expanded to serve

other purposes. Those located within raths would have served the same purpose as those that were in a booley village. It is impossible to determine whether the unassociated sites pre-date those within raths, or possibly what they held until further excavation and testing can be set in motion. Their features have potential to tell us much information on the medieval Irish: economy, social organization, political status, gender/childhood, and religion. Thus, they deserve more attention. While they initially demonstrate minor or secondary functions to other settlements, they may hold a more prominent key to several other aspects of life in Early Medieval Ireland.

Endnotes:

- 1 Clinton 2001, 95
- 2 McKenzie and Murphy 2011, 134
- 3 Clinton 2001, 95
- 4 Warner 1979; Clinton 2001
- 5 Clinton 2001, 10
- 6 Lightfoot et al 1998
- 7 Crumley and Marquardt 1990, 73
- 8 Bender 1993, 3
- 9 Crumley and Marquardt 1987
- 10 Kelly 1997, 2
- 11 Kelly 1997, 2
- 12 Ember and Ember 1992
- 13 Soderberg 1999
- 14 Kerr et al 2009
- 15 Kerr et al 2009
- 16 Ó Corráin 1972
- 17 Patterson 1994, 134-135
- 18 Ember and Ember 1992
- 19 McCartney 2006, 103
- 20 Buckley 1988-89, 64
- 21 McCartney 2006
- 22 Woods 1977
- 23 Holliday and Gartner 2007
- 24 Lucas 1989, 50
- 25 Lucas 1989, 61
- 26 Lucas 1989, 62
- 27 Patterson 1994, 78
- 28 <http://www.gg.rhbc.ac.uk/qed27/link2htm>
accessed 2006
- 29 Patterson 1994, 91

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